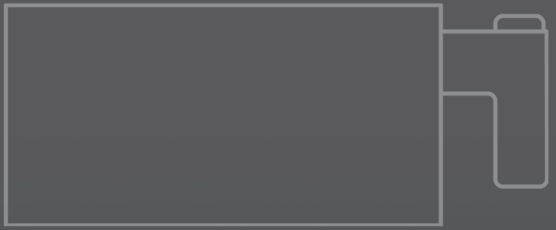
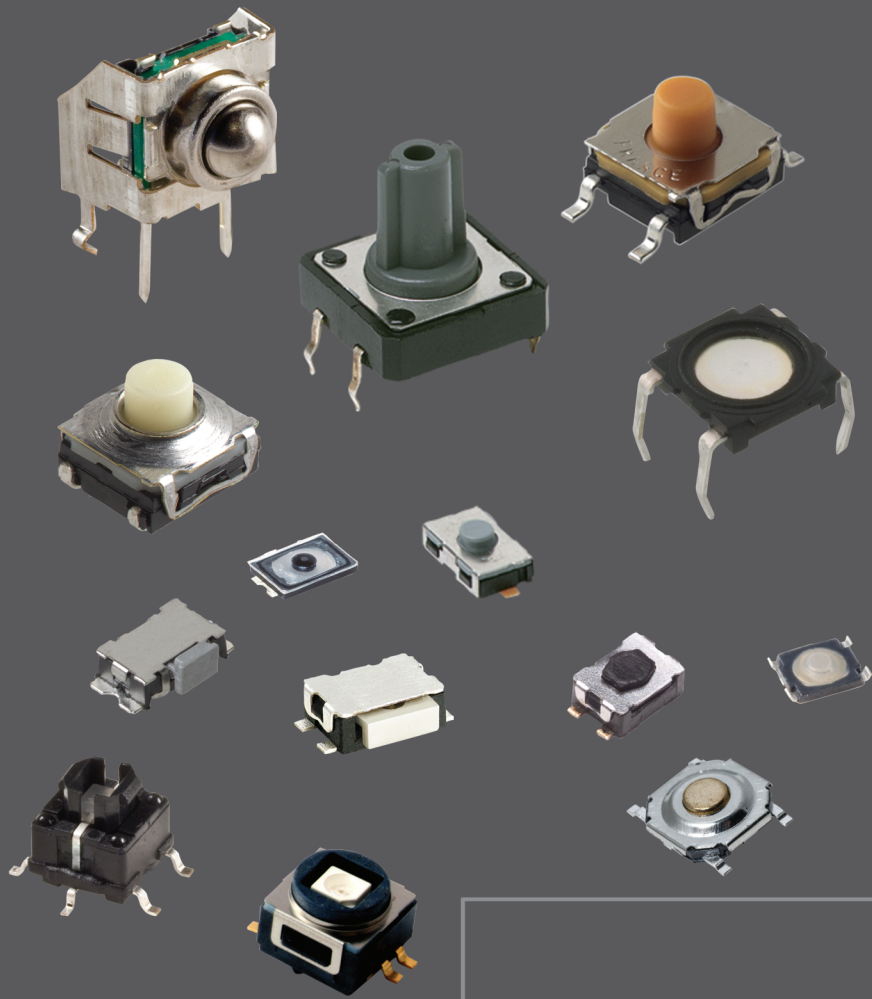


audio  
automotive  
aerospace  
communication devices  
consumer appliances  
consumer electronics  
datacom  
data storage  
handheld devices  
industrial  
industrial equipment  
instrumentation  
medical  
military  
mobile phones  
portable tools  
pumps & motors  
security alarms  
telecom  
test equipment  
thermostatic controls











# tactile

# Tactile Switches

## Product Selection Guide

Tactile Switches

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|--|---|---|---|
| Series                          | KXT3  | NanoT   | KMT2  | KMT0  | KMR 2-8  | KMS   | PTS525  | PTS526  |
| Footprint                       | 3 x 2   | 2.1 x 1.65<br>2.2 x 1.7   | 3 x 2.6   | 3 x 2.6   | 4.2 x 2.8  | 4.2 x 3.55  | 5.2 x 5.2   | 5.2 x 5.2   |
| Total Height (mm)               | 0.6   | 0.55<br>1.65  | 0.65  | 0.65  | 1.9<br>2.5   | 1.42  | 0.8 and 1.5   | 0.8; 1.5;<br>1.7; 2.0   |
| Travel (mm)                     | 0.13  | 0.1   | 0.15  | 0.15  | 0.2 to 0.35  | 0.25 to 0.3   | 0.3   | 0.25  |
| Actuation Force (N)             | 100 gf<br>160gf<br>240 gf<br>330 gf   | 100 gf<br>180 gf<br>240 gf  | 1.0<br>1.6  | 1.0; 1.6<br>2.3; 3.4  | 1.2; 2.0<br>3.0; 4.0   | 2.0<br>3.0  | 1.6<br>2.6  | 1.6; 2.5;<br>3.2  |
| Contact Type                    | Silver  | Silver  | Silver  | Silver  | Silver / Gold  | Silver / Gold   | Silver  | Silver  |
| Max. Voltage (V)                | 15  | 15  | 32  | 32  | 32   | 32  | 32  | 12  |
| Max. Switching Power (VA)       | 0.5   | -   | 0.5   | 0.5   | 1 / 0.2  | 1 / 0.2   | 1   | 0.6   |
| Life Cycles                     | 300 000<br>500 000  | 200,000<br>300,000  | 150 000   | 300 000/600 000<br>1 000 000  | 100 000<br>300 000   | 100 000   | 100 000   | 100 000 to<br>1 000 000   |
| IP Rating                       | IP64  | IP67  | IP54  | IP68  | IP40   | IP40  | IP40  | IP40  |
| Page Number                     | B-7   | B-9   | B-13  | B-15  | B-17   | B-27  | B-29  | B-33  |

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|--|---|---|---|
| Series                          | PTS530  | PTS540  | PTS810  | PTS815  | PTS820   | PTS830  | PTS840  | PTS841  |
| Footprint                       | 4.5 x 4.5   | 3.7 x 3.7   | 4.2 x 3.2   | 4.2 x 3.2   | 3.9 x 2.9  | 3.5 x 2.6   | 3.5 x 3.55  | 3.6 x 3.5   |
| Total Height (mm)               | 0.55 and 0.65   | 0.55 / 0.65   | 2.5   | 2.5   | 1.5/2.0/2.5  | 1.4   | 1.35  | 1.25  |
| Travel (mm)                     | 0.2   | 0.15  | 0.15/0.2  | 0.2   | 0.2  | 0.15  | 0.2   | 0.2   |
| Actuation Force (N)             | 1.0; 1.6;<br>2.0; 2.6;<br>4.0; 6.0  | 160 gf<br>230 gf  | 1.6; 2.6;<br>4.0; 6.0   | 180 gf;<br>250 gf;<br>400 gf  | 1.6<br>2.5   | 160 gf<br>450 gf  | 1.6<br>2.2  | 180gf; 250gf  |
| Contact Type                    | Silver  | Silver  | Silver  | Silver  | Silver   | Silver  | Silver  | Silver  |
| Max. Voltage (V)                | 12  | 12  | 16  | 12  | 12   | 12  | 12  | 12  |
| Max. Switching Power (VA)       | -   | -   | -   | -   | -  | -   | -   | -   |
| Life Cycles                     | 150 000 to<br>1 000 000   | 300 000<br>500 000  | 50 000 to<br>150 000  | 100 000   | 100 000<br>200 000   | 200 000<br>500 000  | 100 000   | 100 000   |
| IP Rating                       |   | IP40  | IP40  | IP40  | IP40   | IP40  | IP60  | IP40  |
| Page Number                     | B-37  | B-39  | B-41  | B-43  | B-45   | B-48  | B-52  | B-55  |

# Tactile Switches Product Selection Guide

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|--|---|---|
| Series                          | PTS845  | PTS850  | PTS847  | KSR   | KSS  | KSC V   | KSC 1-11  |
| Footprint                       | 4.5 x 3.4   | 5.4 x 5   | 4.6 x 2.2   | 7.15 x 3.8<br>7.3 x 3.8   | 5.5 x 4.4  | 2 holes ø 1.1<br>2 pads ø 1.5<br>x 0.8  | J 6.8 x 6.2<br>G 10 x 6.2   |
| Total Height (mm)               | 3.3   | 1.8   | 2.6   | 2.5   | 1.7  | 5.0*  | 2.5 to 7.7  |
| Travel (mm)                     | 0.,2  | 0.2   | 0.15  | 0.3 to 0.5  | 0.3  | 0.7*  | 0.20 to 0.75 *  |
| Actuation Force (N)             | 80gf;160gf;<br>260gf  | 180gf; 350gf  | 160gf; 350gf  | 1.2; 2.0;<br>3.0; 4.5   | 2<br>2.5<br>4  | 3.5*  | 1.1 to 5.5 *  |
| Contact Type                    | Silver  | Silver  | Silver  | Silver / Gold   | Silver / Gold  | Silver / Gold   | Silver / Gold   |
| Max. Voltage (V)                | 12  | 12  | 15V DC  | 32  | 32   | 32  | 32  |
| Max. Switching Power (VA)       | 50 mA   | 50 mA   | DC 15V<br>20mA  | 1 / 0.2   | 1 / 0.2  | 1 / 0.2   | 1 / 0.2   |
| Life Cycles                     | 100 000   | 50 000  | 200 000   | 100 000<br>200 000  | 100 000  | 300 000   | 100 000 to 3 000 000  |
| IP Rating                       |   |   |   | IP50  | IP40   | IP67  | IP67  |
| Page Number                     | B-57  | B-59  | B-62  | B-68  | B-72   | B-97  | B-74  |

B Tactile Switches

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|---|--|---|---|---|---|
| Series                          | KSC XA  | KSC SLT   | KSC DCT   | KSC PF  | KSC OF  | KSC TE   | KSE   | EL  | KST   | KT  |
| Footprint                       | 6.2 x 6.2   | 6.2 x 6.2   | 6.8 x 6.2   | 6.8 x 6.2   | 6.2 x 6.2   | 6.2 x 6.3  | 6.8 x 6.2   | 6.2 x 6.2   | 6.2 x 6.2   | SA SA2<br>7.5x5 7.5x7   |
| Total Height (mm)               | 4.9   | 5.0   | 5.2   | 5.2   | 5.1   | 3.5  | 3.1 / 4.3   | 3.5 / 5.2   | 5.0   | 6.6<br>7.11 with tab  |
| Travel (mm)                     | 0.7   | 1.35  | 0.85  | 0.5 to 1.0  | 0.5 / 0.65  | 0.3  | 0.3   | 0.3 to<br>0.6   | 1.3   | 0.3 to 0.5  |
| Actuation Force (N)             | 3.5; 4.0;<br>5.5; 6.8;<br>9.6   | 2.4; 3.5  | 4.75  | 1.7 to<br>6.25  | 1.65;<br>4.0  | 1.6  | 1.5<br>2.25   | 2<br>3.5  | 1.6<br>2.45   | 3   |
| Contact Type                    | Silver  | Silver /<br>Gold  | Silver  | Silver  | Silver  | Silver   | Silver  | Silver  | Silver /<br>Gold  | Silver /<br>Gold  |
| Max. Voltage (V)                | 24  | 32  | 32  | 32  | 32  | 24   | 32  | 18  | 32  | 50  |
| Max. Switching Power (VA)       | 1   | 1   | 1   | 1   | 1   | 0.03   | 1   | 0.9   | 1 / 0.5   | 1 / 0.2   |
| Life Cycles                     | 1 000 000;<br>500 000;<br>300 000   | 200 000   | 300 000   | 300 000   | 300 000   | 10 000 000   | 300 000   | 200 000   | 100 000   | 100 000   |
| IP Rating                       | IP67  | IP40  | IP67  | IP67  | IP67  | IP67   | IP67  | IP67  | IP40  |   |
| Page Number                     | B-77  | B-78  | B-84  | B-85  | B-86  | B-87   | B-100   | B-103   | B-105   | B-107   |

\* Other options available by request



Dimensions are shown: mm  
Specifications and dimensions subject to change

# Tactile Switches

## Product Selection Guide

Tactile Switches B





| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|--|---|---|
| Series                          | K5AT  | K8  | K5V   | KSF/KSI   | KSA  | KSA-V   | KSA MKII  |
| Footprint                       | G<br>8.4 x 10.8   | G<br>8.4 x 10.8   | 8 x 9 x 17 /<br>9 x 13  | 7.62 x 5.08   | 7.62 x 5.08  | 7.62 x 2.54   | 7.62 x 5.08   |
| Total Height (mm)               | 6.1   | 6   | 9 / 13  | 2.6   | 4.7<br>button option   | 8   | 4.7   |
| Travel (mm)                     | 0.5   | 0.45  | 1.2   | 0.3 to 0.5  | 0.3 to 0.5   | 0.3 to 0.5  | 0.3 to 0.5  |
| Actuation Force (N)             | 4   | 4   | 4   | 1.3<br>3.0    1.6<br>5.0  | 1.3<br>3.0<br>5.0  | 1.3<br>3.0<br>5.0   | 1.3<br>3.0<br>5.0   |
| Contact Type                    | Gold  | Silver  | Gold  | Silver / Gold   | Silver / Gold  | Silver / Gold   | Silver / Gold   |
| Max. Voltage (V)                | 32  | 32  | 32  | 32  | 32   | 32  | 32  |
| Life Cycles                     | 100 000   | 300 000   | 25 000  | 100 000   | 100 000  | 100 000   | 100 000<br>1 000 000  |
| IP Rating                       | IP40  | IP40  | IP40  | IP60  | IP60   | IP60  | IP67  |
| Page Number                     | B-112   | B-114   | B-117   | B-123   | B-125  | B-125   | B-130   |

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|--|---|
| Series                          | KSL   | KSL-V   | KSJ   | KSJ-V   | PTS636   | PTS641  |
| Footprint                       | 7.62 x 5.08   | 7.62 x 2.54   | 7.62 x 5.08   | 7.62 x 2.54   | 6 x 3.5  | 6.3 x 6.4   |
| Total Height (mm)               | 9.9   | 8   | 6.65  | 8   | 2.5<br>4.3<br>5.0  | 2.5<br>3.1<br>3.4   |
| Travel (mm)                     | 0.3 to 0.5  | 0.3 to 0.5  | 0.55 to 0.7   | 0.55 to 0.7   | 0.25 to 0.30   | 0.20 / 0.30   |
| Actuation Force (N)             | 1.3<br>3.0  | 1.3<br>3.0  | 2.0<br>3.0  | 2.0<br>3.0  | 1.3; 1.80<br>2.5; 3.2  | 160 gf<br>250 gf<br>320 gf  |
| Contact Type                    | Silver / Gold   | Silver / Gold   | Silver / Gold   | Silver / Gold   | Silver   | Silver  |
| Max. Voltage (V)                | 32  | 32  | 32  | 32  | 12   | 12  |
| Life Cycles                     | 100 000   | 100 000   | 100 000<br>30 000   | 100 000<br>30 000   | 20 000 to<br>100 000   | 100 000   |
| IP Rating                       | IP60  | IP60  | IP60  | IP60  | IP40   | IP40  |
| Page Number                     | B-125   | B-125   | B-132   | B-132   | B-134  | B-141   |



# Tactile Switches Product Selection Guide

| Surface Mount Thru-Hole Options |  |  |  |  |  |  |  |
|---------------------------------|---|---|---|---|---|---|---|
| Series                          | PTS645  | PTS645V   | PTS647  | PTS125  | ITS   | ILS   | TLS   |
| Footprint                       | 6 x 6   | 7.0 x 2.5   | 4.5 x 4.5   | 12 x 12   | variety of sizes available  | variety of sizes available  | 8.6 x 8.4   |
| Total Height (mm)               | 4.3; 5.0; 7.0; 9.5;   | 7.1   | 3.8<br>5.0<br>7.0   | 4.3<br>7.3 Sq. 8.5<br>12.0  |   |   | 3.95  |
| Travel (mm)                     | 0.25  | 0.25; 0.35  | 0.25  | 0.30  | 0.25  | 0.25  | 0.9   |
| Actuation Force (N)             | 1.3; 1.6<br>2.0; 2.6  | 1.3; 1.6<br>2.0; 2.6  | 1; 1.8<br>2.5   | 1.6<br>2.6  | 160 gf  | 180 gf<br>250 gf  | 4; 7; 10  |
| Contact Type                    | Silver  | Silver  | Silver  | Silver  | Silver  | Silver  | Silver  |
| Max. Voltage (V)                | 12  | 12  | 12  | 12  | 12  | 12  | 16  |
| Life Cycles                     | 100 000   | 100 000   | 100 000   | 200 000   | 50 000  | 100 000   | 300 000 to 500 000  |
| IP Rating                       | IP40  | IP40  | IP40  | IP40  | IP40  | IP40  | IP54  |
| Page Number                     | B-143   | B-151   | B-154   | B-156   | B-161   | B-170   | B-174   |

| Surface Mount Thru-Hole Options |  |  |  |  |
|---------------------------------|---|---|---|---|
| Series                          | TLSM  | RK  | RKC2  | SFS   |
| Footprint                       | 6.0 x 6.1   | 4.5 x 4.5;<br>4.2 x 3.2;<br>3.5 x 2.6   | 3.5 x 2.7   | 12 x 12   |
| Total Height (mm)               | 3.45  | 0.55; 2.5; 1.4  | 1.7   | 4.95  |
| Travel (mm)                     | 0.3   | 0.15 to 0.2   | 0.15  | 0.6, 0.7, 0.8   |
| Actuation Force (N)             | 2   | 160gf; 180gf;<br>250gf; 400gf;<br>450gf; 540gf                                      | 180gf; 250gf;<br>350gf; 500gf   | 360gf<br>680gf<br>970gf   |
| Contact Type                    | Silver  | Silver  | Silver  | Gold  |
| Max. Voltage (V)                | 16V DC  | 12 to 15  | 12  | 35  |
| Life Cycles                     | 3 000 000   | 100 000 to 500 000  | 100 000 to 200 000  | 300 000   |
| IP Rating                       | IP54  |   |   | IP40  |
| Page Number                     | B-175   | B-177   | B-182   | B-185   |

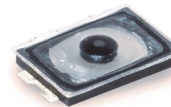
# KXT3 Series Ultra Low Profile Top Actuated

## Features

- Smallest footprint 3.0 x 2.0 mm
- 0.6 mm thickness
- High number of cycle

## Typical Applications

- Wearable electronics
- In-Ear headphones, Earbuds
- Mobile Phones
- Portable Electronics
- Hearing Aids



Tactile Switches

## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
 TERMINALS: G type for SMT  
 TRAVEL: 0.13 mm ± 0.05 mm

## Mechanical

|             | Operating force<br>gf | Operating<br>Life | Casing<br>Color |
|-------------|-----------------------|-------------------|-----------------|
| KXT 311 LHS | 100 ± 50              | 300,000           | Black           |
| KXT 321 LHS | 160 ± 50              | 500,000           | Black           |
| KXT 331 LHS | 240 ± 70              | 500,000           | Black           |
| KXT 341 LHS | 330 ± 70              | 300,000           | Black           |

## Electrical

MAXIMUM VOLTAGE: 15 VDC  
 MAXIMUM CURRENT DC: 20 mA  
 DIELECTRIC STRENGTH: (50/60 Hz, 1 min) 250 Vrms  
 CONTACT RESISTANCE: ≤ 500 mΩ  
 INSULATION RESISTANCE: ≥ 50 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
 STORAGE TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

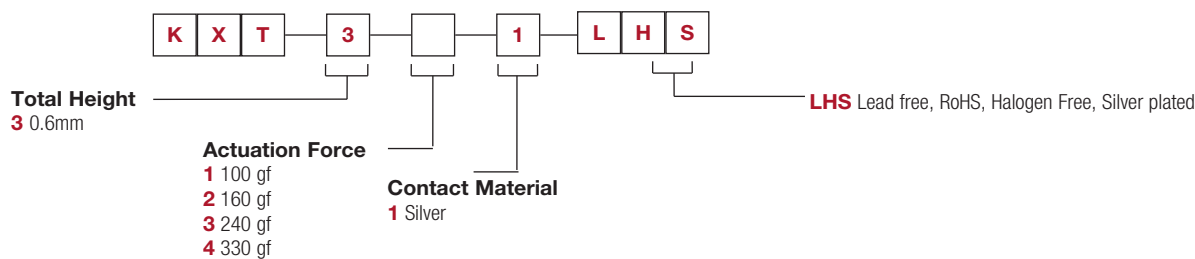
## Packaging

In reels of 8,500 pieces  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

**NOTE:** Specifications listed above are for switches with standard options.  
 For information on specific and custom switches, consult Customer Service Center.

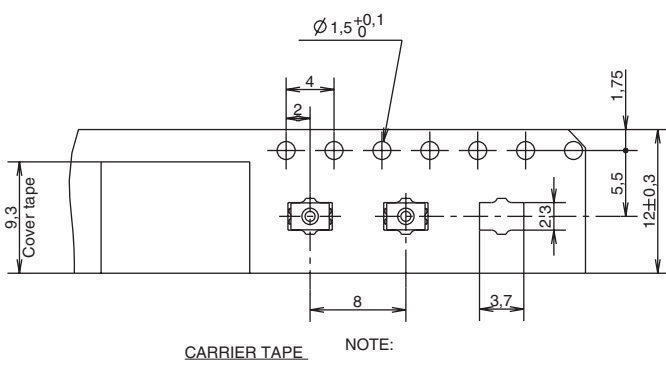
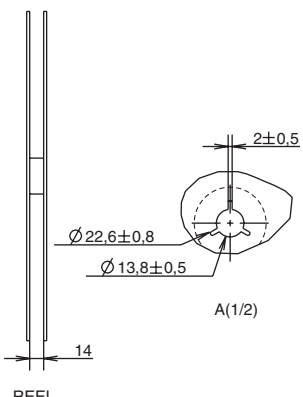
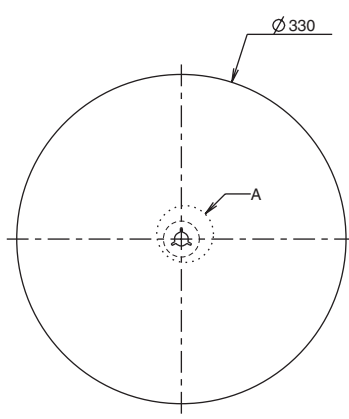
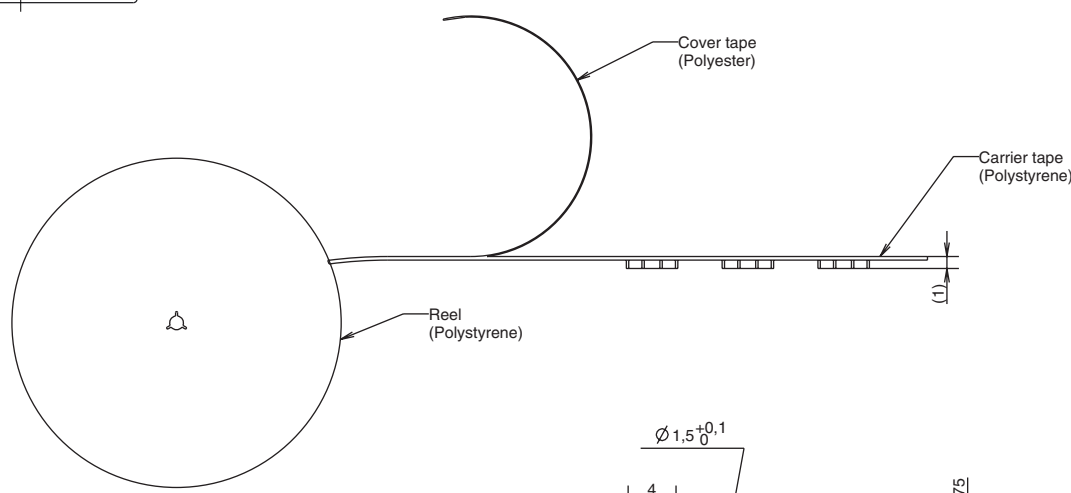
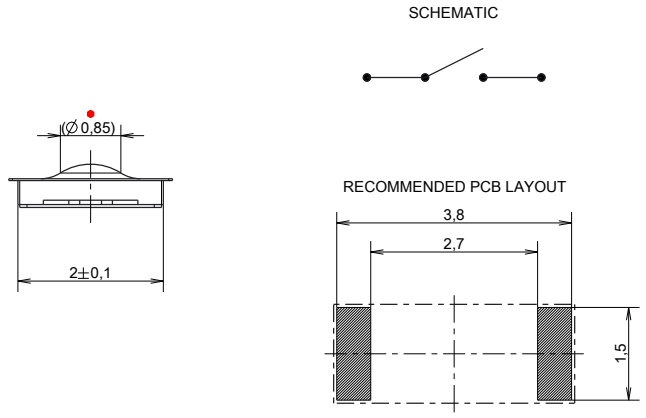
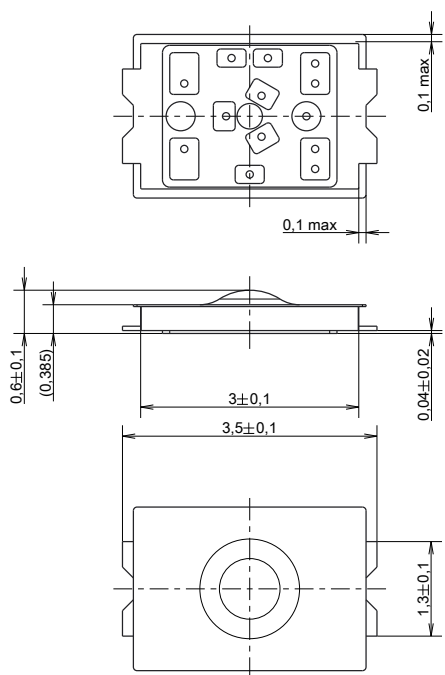
## Part Number Description

For any part number different from those listed above, please consult your local representative.



# KXT3 Series

## Ultra Low Profile Top Actuated



NOTE:

# NanoT Series

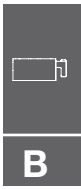
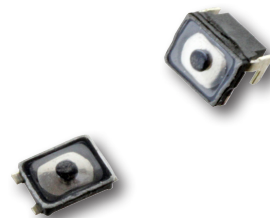
## The Most Compact Nano Size Tact Switch

### Features

- Ultra Compact Size
- SMT or PIP versions
- IP67
- Integrated Actuator
- High life cycles

### Typical Applications

- Hearing Aids
- Headsets
- Sports watch
- IoT portable device



B

Tactile Switches

| Part Number  | Style                               | Force (gf)  | Life (Cycles) |
|--------------|-------------------------------------|-------------|---------------|
| NanoT 100 AS | Top Actuated with SMT termination   | 100 +40/-30 | 200,000       |
| NanoT 160 AS | Top Actuated with SMT termination   | 160 +/- 50  | 300,000       |
| NanoT 240 AS | Top Actuated with SMT termination   | 240 +/- 60  | 200,000       |
| NanoT 160 BP | Side actuated with PIP* termination | 160 +/- 50  | 300,000       |
| NanoT 240 BP | Side actuated with PIP* termination | 240 +/- 60  | 200,000       |

\*PIP: Pin in Paste also called Pin Through Paste

### Specifications

TRAVEL: 0.1 mm +/- 0.05 mm  
 OPERATING TEMPERATURE: -40 ~ +85°C  
 OPERATING TEMPERATURE: -40 ~ +85°C  
 RATING: 15V D.C. / 20mA  
 INSULATION RESISTANCE: 100 MΩ Min.  
 WITHSTAND VOLTAGE: 250V A.C. (50~60Hz 2mA) for 1 min.  
 BOUNCE: ON/OFF 10 ms Max.  
 CONTACT RESISTANCE: 500mΩ Max.

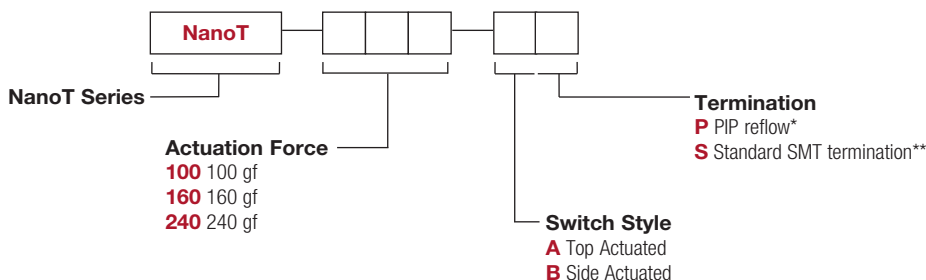
### Packaging

In reels of 7,500 pieces for the Side actuated  
 In reels of 8,000 pieces for the Top actuated  
 Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 330 mm ± 2 mm.

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**

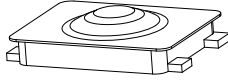
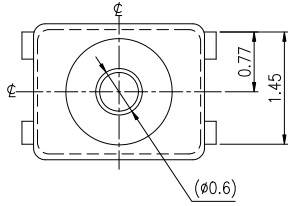


\* P termination for side version only  
 \*\* S termination for top version only

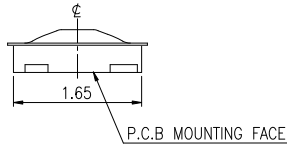
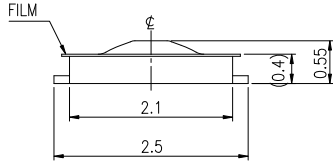
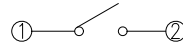
# NanoT Series

## The Most Compact Nano Size Tact Switch

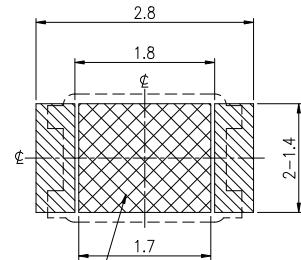
### TOP ACTUATED



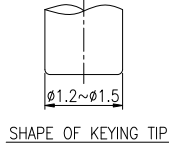
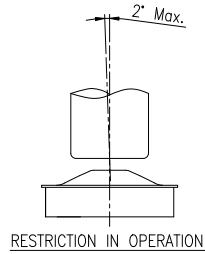
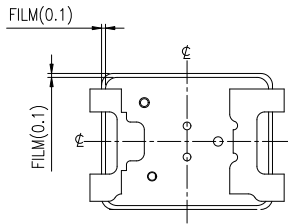
SCHEMATIC



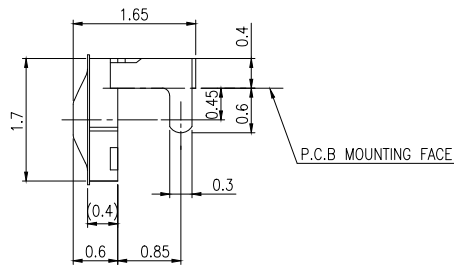
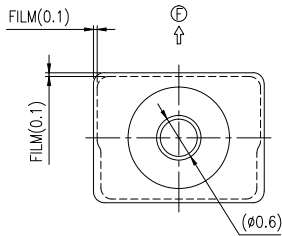
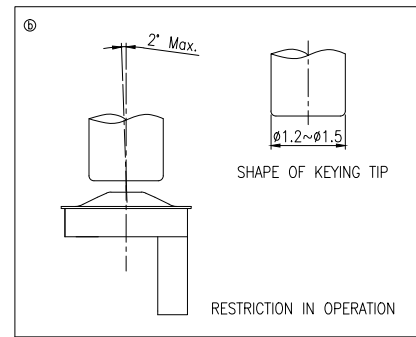
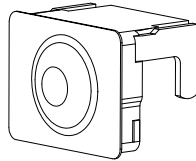
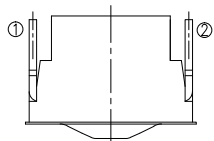
P.C.B LAYOUT



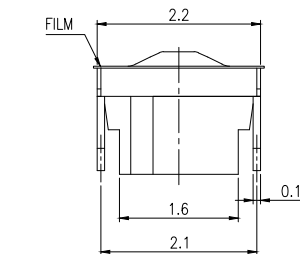
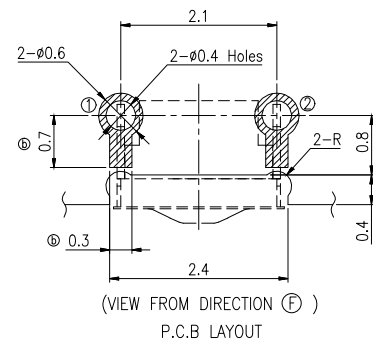
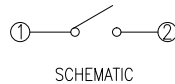
Any land pattern or vias should be prevented at area.



### SIDE ACTUATED PIP



P.C.B MOUNTING FACE



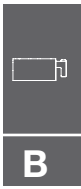
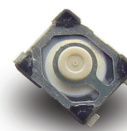
# KMT2 Series Nano-Miniature SMT Top Actuated

## Features

- **Smallest footprint**
- **High number of cycles within the smallest packaging**
- **Smallest thickness with integrated actuator**
- **Ground pin option**
- **Halogen free**

## Typical Applications

- **Mobile Phones**
- **Hearing Aids**
- **MP3 accessories**
- **Bluetooth Headset**



**B**

Tactile Switches

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type G and NG  | Operating force Newtons (grams) | Operating Life | Tactile Feeling | Travel mm  |
|----------------|---------------------------------|----------------|-----------------|------------|
| KMT 211 HF LFS | 1.0 (100) ± 0.25                | 150,000        | ≥ 10%           | 0.15 ± 0.1 |
| KMT 221 HF LFS | 1.6 (160) ± 0.40                | 150,000        | ≥ 30%           | 0.15 ± 0.1 |

## Electrical

|                        |                  |
|------------------------|------------------|
|                        | Silver           |
| MAXIMUM POWER:         | 0.5 VA           |
| MAXIMUM VOLTAGE:       | 32 VDC           |
| MINIMUM VOLTAGE:       | 20 mV            |
| MAXIMUM CURRENT DC:    | 50 mA            |
| MINIMUM CURRENT DC:    | 1 mA             |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms (1mn) |
| CONTACT RESISTANCE:    | ≤ 150 mΩ         |
| INSULATION RESISTANCE: | ≥ 50 MΩ          |
| BOUNCE TIME:           | ≤ 6 ms           |

## Environmental

|                        |                                   |
|------------------------|-----------------------------------|
|                        | Silver                            |
| OPERATING TEMPERATURE: | -40°C to 85°C                     |
| STORAGE TEMPERATURE:   | -55°C (10 days)<br>+85°C (4 days) |

## Process

SOLDERING: This component is suited to the following methods:  
– Lead free reflow soldering process in accordance with IEC 61760-1.

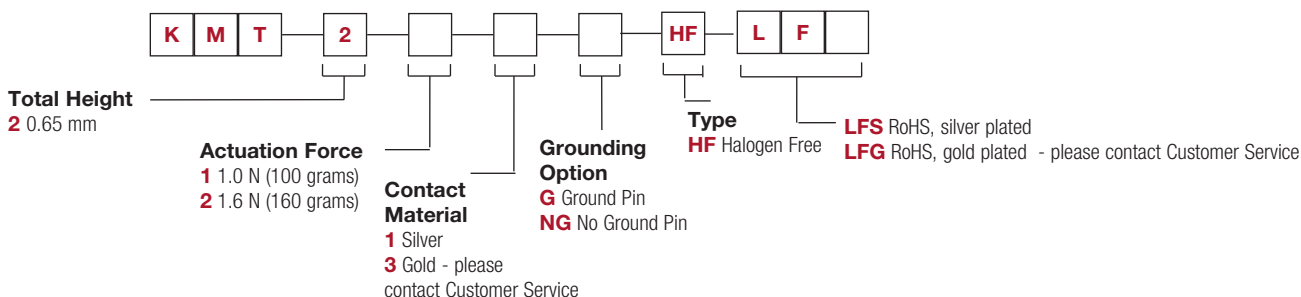
## Packaging

In reels of 4,000 pieces.  
Dimensions of reels according to EIA 481B  
External diameter 180 mm

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## Part Number Description

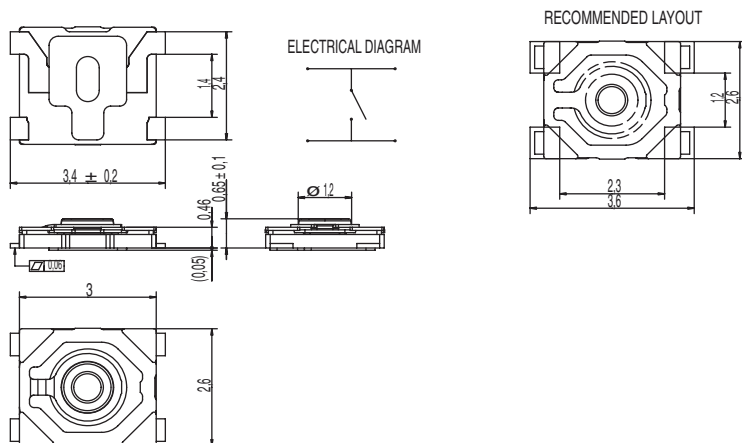
For any part number different from those listed above, please consult your local representative.



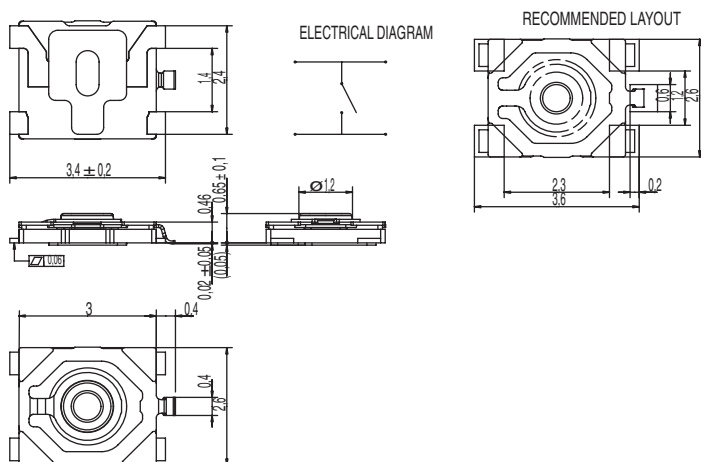
# KMT2 Series Nano-Miniature SMT Top Actuated

Tactile Switches

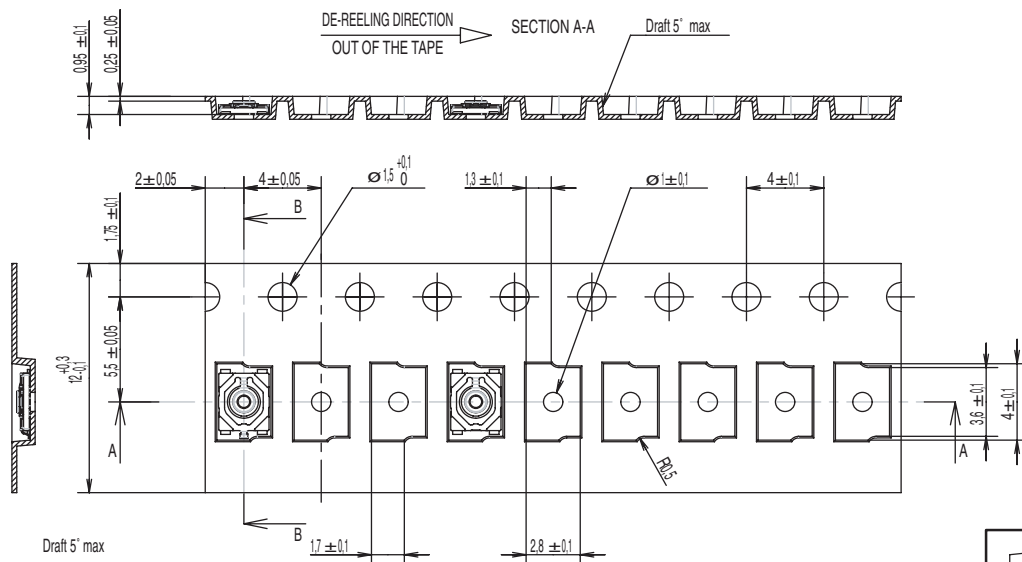
## KMT Series – No Ground Pin



## KMT Series – With Ground Pin



## TAPE & REEL



Dimensions are shown: mm  
Specifications and dimensions subject to change





# KMT0 Series Nano-Miniature SMT Top Actuated

## Features

- 3.0 x 2.6 mm footprint
- Smallest thickness with integrated actuator
- Extended life cycles
- IP68
- Ultra low current capabilities

## Typical Applications

- Mobile Phones
- Hearing Aids
- MP3 accessories
- Bluetooth Headset
- Automotive keyless entry system
- Smoke and CO detectors
- E-readers
- Home automation remote controls



B

Tactile Switches

## Specification

FUNCTION: momentary action, normally open  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: J lead type for SMT

## Mechanical

TRAVEL (mm): 0.15 ± 0.1

|              | Operating force<br>Newtons (grams) | Tactile<br>Feeling | Operating<br>Life |
|--------------|------------------------------------|--------------------|-------------------|
| KMT011NGJLHS | 1.0 (100) ± 25%                    | ≥ 10%              | 300,000           |
| KMT021NGJLHS | 1.6 (160) ± 25%                    | ≥ 30%              | 300,000           |
| KMT071NGJLHS | 2.3 (230) ± 25%                    | ≥ 30%              | 300,000           |
| KMT031NGJLHS | 3.4 (340) ± 25%                    | ≥ 30%              | 300,000           |

|              | Operating force<br>Newtons (grams) | Tactile<br>Feeling | Operating<br>Life |
|--------------|------------------------------------|--------------------|-------------------|
| KMT012NGJLHS | 1.0 (100) ± 25%                    | ≥ 10%              | 1,000,000         |
| KMT022NGJLHS | 1.6 (160) ± 25%                    | ≥ 30%              | 600,000           |
| KMT072NGJLHS | 2.3 (230) ± 25%                    | ≥ 30%              | 600,000           |

## Electrical

|                        |                  |
|------------------------|------------------|
| MAXIMUM POWER:         | 0.5 VA           |
| MAXIMUM VOLTAGE:       | 32 VDC           |
| MINIMUM VOLTAGE:       | 20 mV            |
| MAXIMUM CURRENT DC:    | 50 mA            |
| MINIMUM CURRENT DC:    | 1 mA             |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms (1mn) |
| CONTACT RESISTANCE:    | ≤ 150 mΩ         |
| INSULATION RESISTANCE: | ≥ 50 MΩ          |
| BOUNCE TIME:           | ≤ 6 ms           |

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
STORAGE TEMPERATURE: -55°C (10 days) +85°C (4 days)

## Process

SOLDERING: This component is suited to the following methods:  
– Lead free reflow soldering process in accordance with IEC 61760-1.

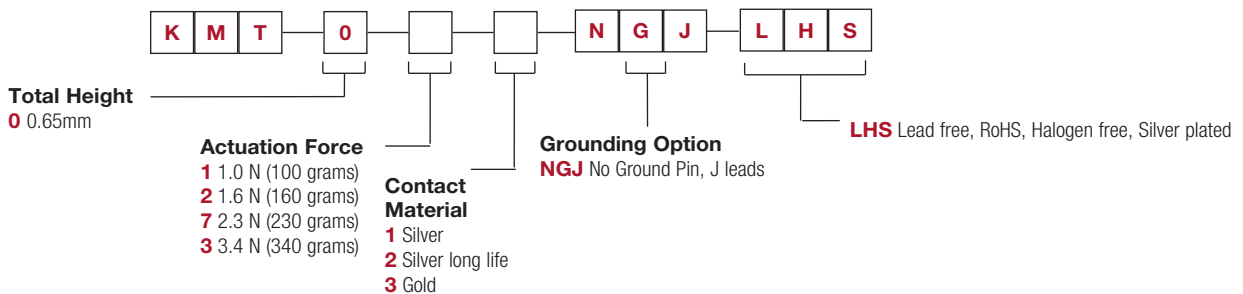
## Packaging

In reels of 5,000 pieces.  
Dimensions of reels according to EIA 481B  
External diameter 180 mm

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

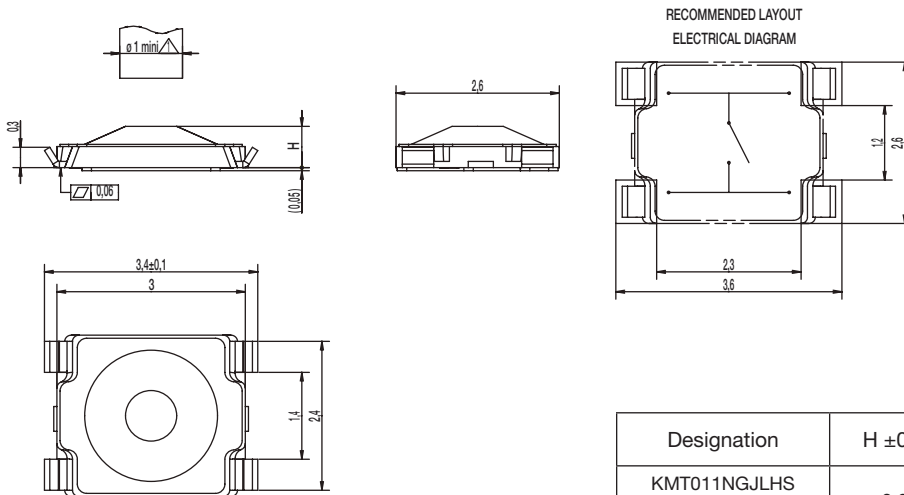
## Part Number Description

For any part number different from those listed above, please consult your local representative.



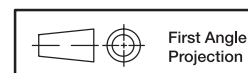
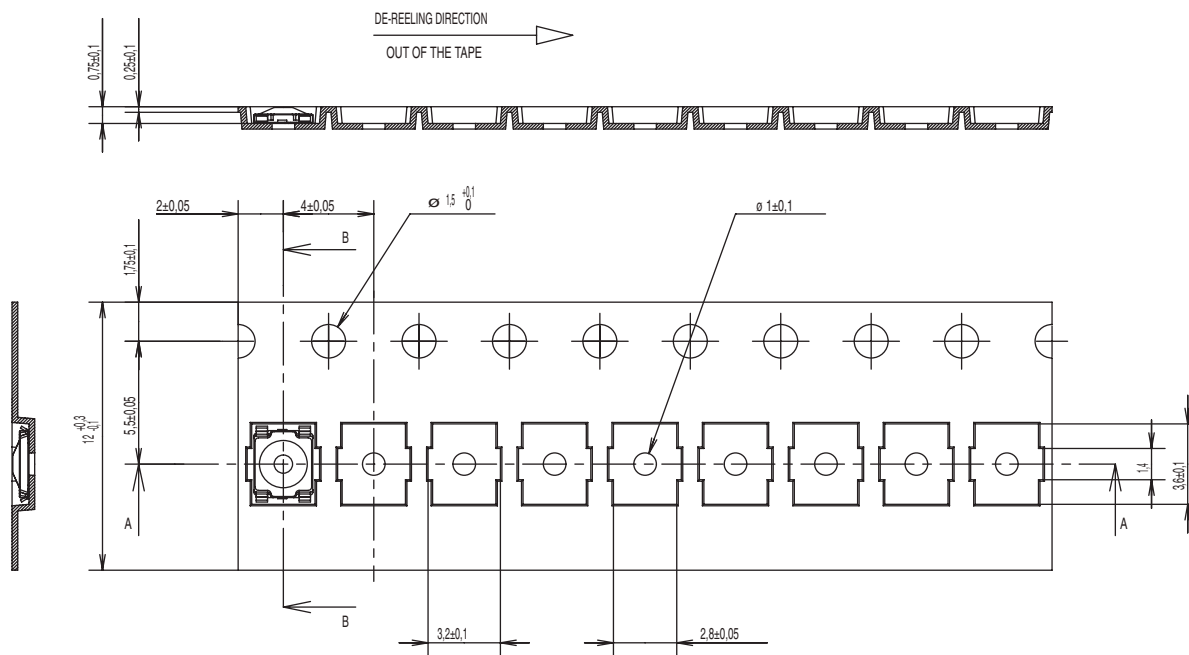
# KMT0 Series Nano-Miniature SMT Top Actuated

Minimum actuator diameter is 1.0 mm. It is recommended to enlarge this diameter to a full flat surface covering the switch.



| Designation  | H ±0.07 |
|--------------|---------|
| KMT011NGJLHS | 0.63    |
| KMT021NGJLHS |         |
| KMT031NGJLHS | 0.65    |
| KMT071NGJLHS |         |

## TAPE & REEL



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KMR 2 Series Microminiature SMT Top Actuated

Tactile Switches

## Features/Benefits

- Small footprint
- 4 actuation forces
- Excellent tactile feel
- Ultra low current capabilities
- IP40

## Typical Applications

- Automotive
- Industrial electronics
- Medical equipment



## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type G and NG<br>See description<br>below | Operating<br>force<br>N (grs) | Operating<br>life<br>(cycles) | Travel (mm)   |
|---|-------------------------------|-------------------------------|---------------|
| KMR211 LFS                                | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR211 ULC LFS                            | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR213 LFG                                | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR213 ULC LFG                            | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR221 LFS                                | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR221 ULC LFS                            | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR223 LFG                                | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR223 ULC LFG                            | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR231 LFS                                | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR231 ULC LFS                            | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR232 LFS                                | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR232 ULC LFS                            | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR233 LFG                                | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR233 ULC LFG                            | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR241 LFS                                | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR241 ULC LFS                            | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR242 LFS                                | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR242 ULC LFS                            | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR243 LFG                                | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR243 ULC LFG                            | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |

## Electrical

|                        | Silver     | Gold    |
|------------------------|------------|---------|
| MAXIMUM POWER:         | 1 VA       | 0.2 VA  |
| MAXIMUM VOLTAGE:       | 32 VDC     | 32 VDC  |
| MINIMUM VOLTAGE:       | 20 mVDC    | 20 mVDC |
| MAXIMUM CURRENT:       | 50 mA      | 10 mA   |
| MINIMUM CURRENT:       | 1 mA*      | 1 mA*   |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms |         |
| CONTACT RESISTANCE:    | ≤ 100 mΩ   |         |
| INSULATION RESISTANCE: | ≥ 1GΩ      |         |
| BOUNCE TIME:           | ≤ 3 ms     |         |

\*For ULC version minimum current is 1µA at 1.8 VDC

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## Packaging

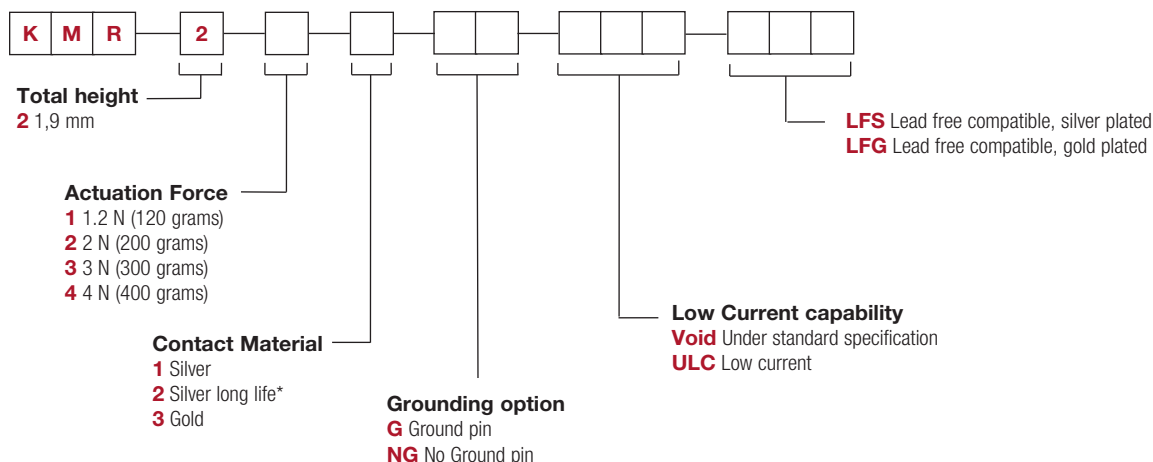
In reels of 7,000 pieces  
External diameter 330 mm ± 2 mm

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

TACTILE FEELING: KMR 2 series with actuation force in 2N - 3N - 4N: ≥ 30%  
KMR 2 series with actuation force in 1.2N: ≥ 20%

## Part Number Description

For any part number different from those listed above, please consult your local representative.

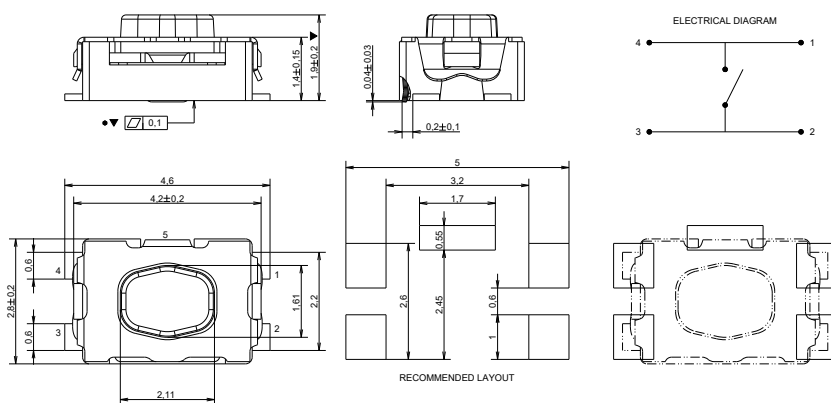


\* Silver long life is available in 3N and 4N actuation force. For other versions, please contact Customer Service.

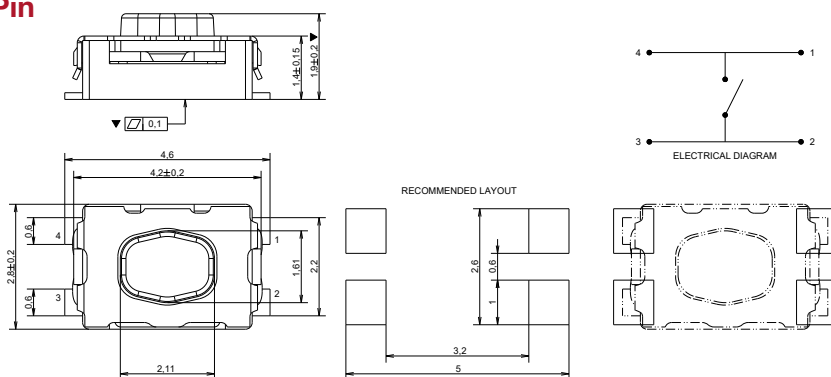
# KMR 2 Series Microminiature Tact Switch for SMT

Tactile Switches B

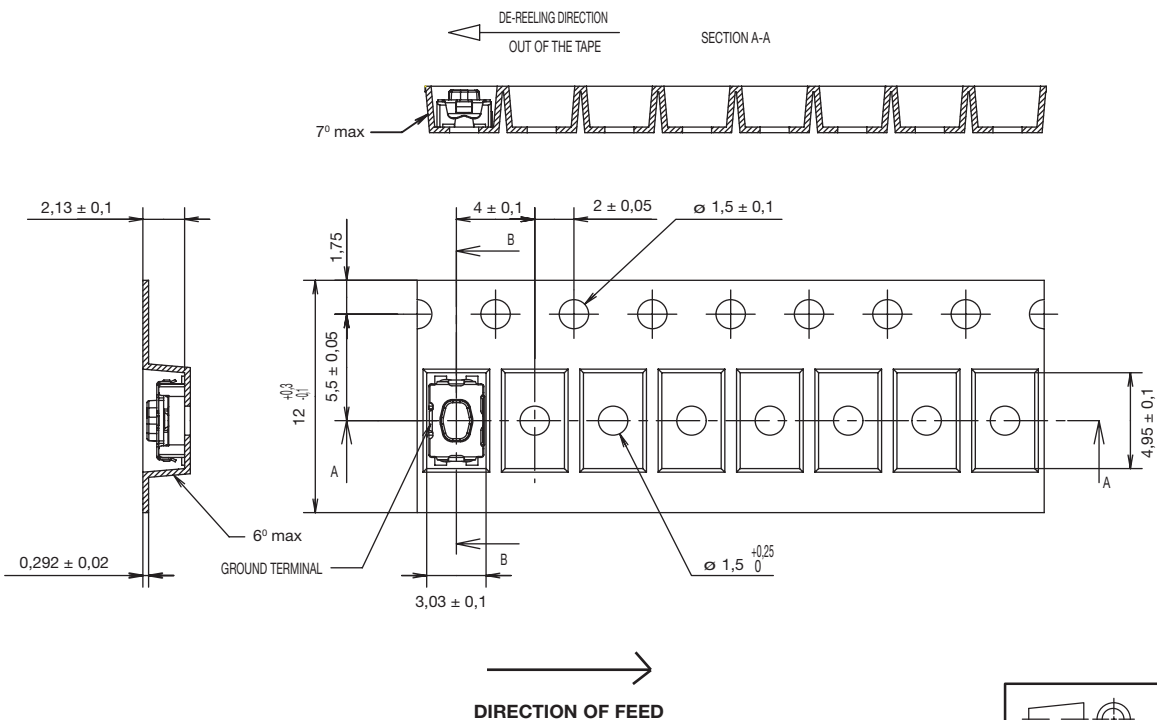
## G - Ground Pin



## NG - No Ground Pin



## TAPE & REEL



Dimensions are shown: mm  
Specifications and dimensions subject to change



# KMR 4 Series Microminiature SMT Top Actuated

## Features/Benefits

- Small footprint
- 4 actuation forces
- Excellent tactile feel
- Ultra low current capabilities
- IP40

## Typical Applications

- Automotive
- Industrial electronics
- Medical equipment



B  
Tactile Switches

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type G and NG<br>See description<br>below | Operating<br>force<br>N (grs) | Operating<br>life<br>(cycles) | Travel (mm)   |
|---|-------------------------------|-------------------------------|---------------|
| KMR411 LFS                                | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR411 ULC LFS                            | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR413 LFG                                | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR413 ULC LFG                            | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR421 LFS                                | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR421 ULC LFS                            | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR423 LFG                                | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR423 ULC LFG                            | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR431 LFS                                | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR431 ULC LFS                            | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR432 LFS                                | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR432ULC LFS                             | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR433 LFG                                | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR433ULC LFG                             | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR441 LFS                                | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR441 ULC LFS                            | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR442 LFS                                | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR442 ULC LFS                            | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR443 LFG                                | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR443 ULC LFG                            | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |

## Electrical

|                        | Silver     | Gold    |
|------------------------|------------|---------|
| MAXIMUM POWER:         | 1 VA       | 0.2 VA  |
| MAXIMUM VOLTAGE:       | 32 VDC     | 32 VDC  |
| MINIMUM VOLTAGE:       | 20 mVDC    | 20 mVDC |
| MAXIMUM CURRENT:       | 50 mA      | 10 mA   |
| MINIMUM CURRENT:       | 1 mA*      | 1 mA*   |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms |         |
| CONTACT RESISTANCE:    | ≤ 100 mΩ   |         |
| INSULATION RESISTANCE: | ≥ 1GΩ      |         |
| BOUNCE TIME:           | ≤ 3 ms     |         |

\*For ULC version minimum current is 1µA at 1.8 VDC

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## Packaging

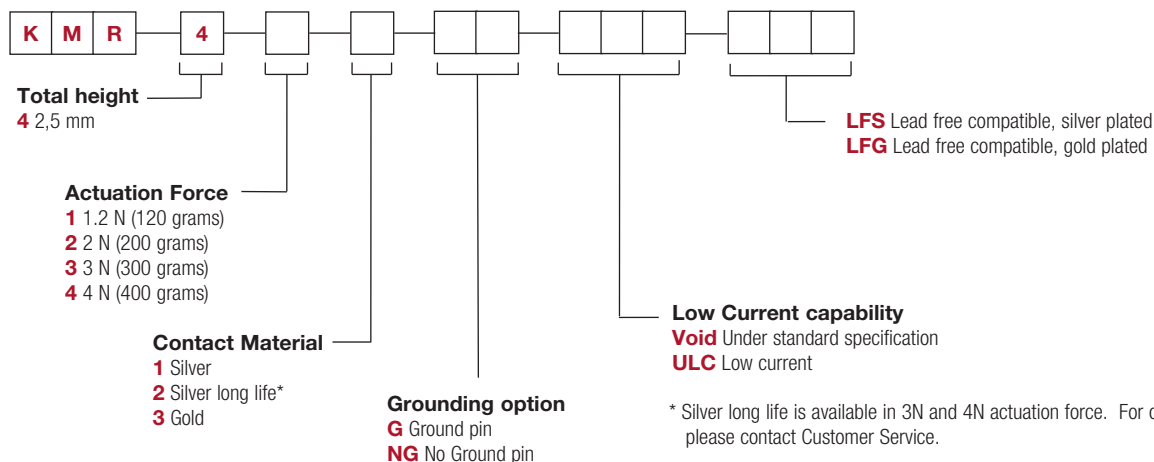
In reels of 6,000 pieces  
External diameter 330 mm ± 2 mm

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

TACTILE FEELING: KMR 4 series with actuation force in 2N - 3N - 4N: ≥ 25%  
KMR 4 series with actuation force in 1.2N: ≥ 20%

## Part Number Description

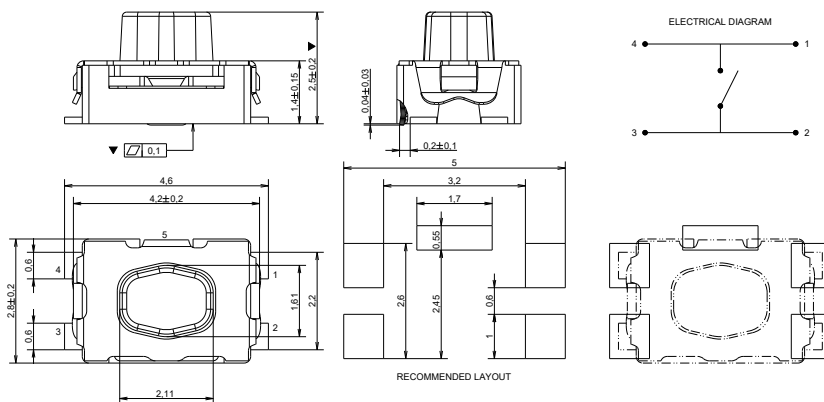
For any part number different from those listed above, please consult your local representative.



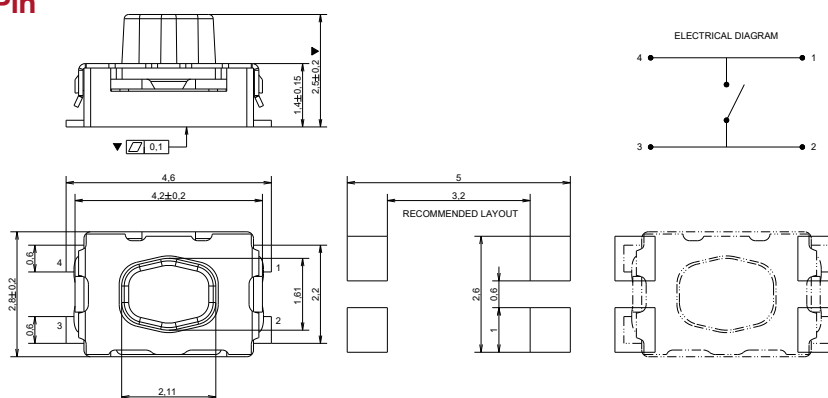
# KMR 4 Series Microminiature Tact Switch for SMT

Tactile Switches

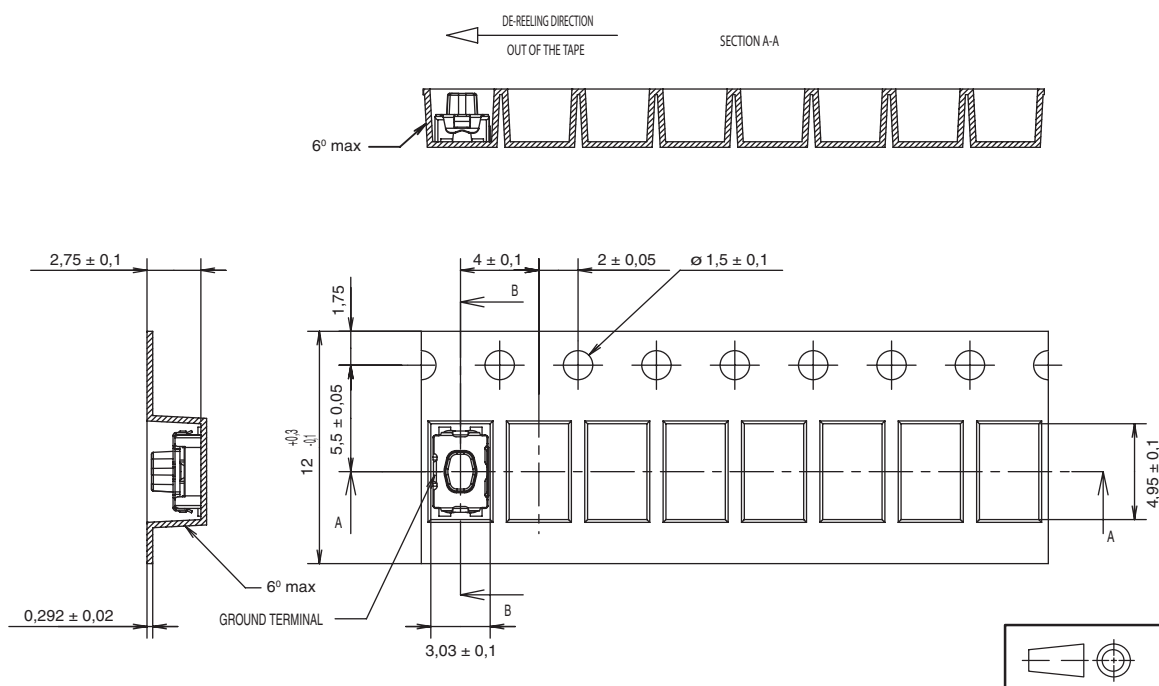
## G - Ground Pin



## NG - No Ground Pin



## TAPE & REEL



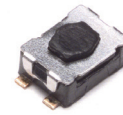
# KMR 6 Series Microminiature SMT Top Actuated IP67

## Features/Benefits

- **Watertight IP67**
- **Standard and long life versions**
- **No ground pin**
- **Ultra low current capabilities**
- **Excellent tactile feel**

## Typical Applications

- **Automotive**
- **Medical**
- **Consumer**
- **Industrial**



B

B

Tactile Switches

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type NG<br>See description<br>below | Operating<br>force<br>N (grs) | Operating<br>life<br>(cycles) | Travel (mm)   |
|-------------------------------------|-------------------------------|-------------------------------|---------------|
| KMR611NG LFS                        | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR611NG ULC LFS                    | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR613NG LFG                        | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR613NG ULC LFG                    | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR621NG LFS                        | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR621NG ULC LFS                    | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR623NG LFG                        | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR623NG ULC LFG                    | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR631NG LFS                        | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR631NG ULC LFS                    | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR632NG LFS                        | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR632NG ULC LFS                    | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR633NG LFG                        | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR633NG ULC LFG                    | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR641NG LFS                        | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR641NG ULC LFS                    | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR642NG LFS                        | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR642NG ULC LFS                    | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR643NG LFG                        | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR643NG ULC LFG                    | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |

## Electrical

|                        | Silver     | Gold    |
|------------------------|------------|---------|
| MAXIMUM POWER:         | 1 VA       | 0.2 VA  |
| MAXIMUM VOLTAGE:       | 32 VDC     | 32 VDC  |
| MINIMUM VOLTAGE:       | 20 mVDC    | 20 mVDC |
| MAXIMUM CURRENT:       | 50 mA      | 10 mA   |
| MINIMUM CURRENT:       | 1 mA*      | 1 mA*   |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms |         |
| CONTACT RESISTANCE:    | ≤ 100 mΩ   |         |
| INSULATION RESISTANCE: | ≥ 1GΩ      |         |
| BOUNCE TIME:           | ≤ 3 ms     |         |

\*For ULC version minimum current is 1µA at 1.8 VDC

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## Packaging

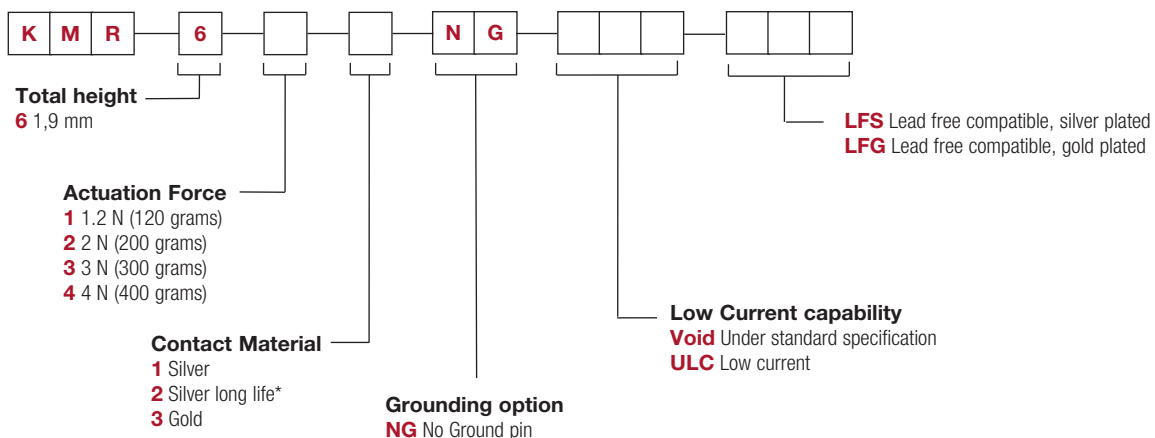
In reels of 7,000 pieces  
External diameter 330 mm ± 2 mm

**NOTE:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

TACTILE FEELING: KMR 6 series with actuation force in 2N - 3N - 4N: ≥ 30%  
KMR 6 series with actuation force in 1.2N: ≥ 20%

## Part Number Description

For any part number different from those listed above, please consult your local representative.



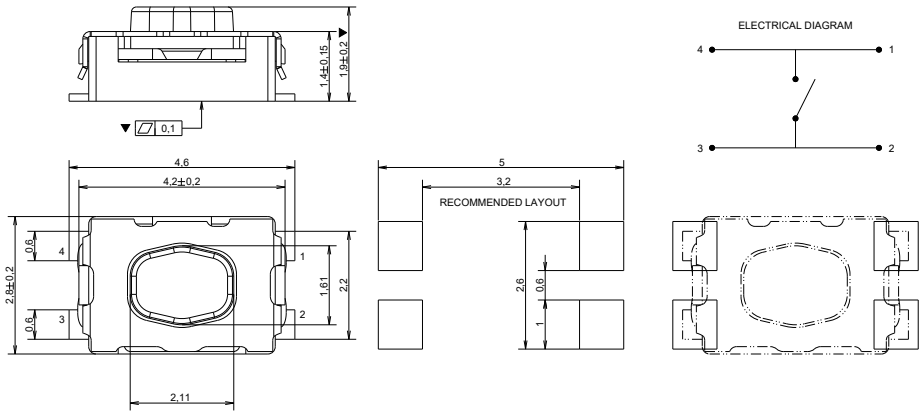
\* Silver long life is available in 3N and 4N actuation force. For other versions, please contact Customer Service.



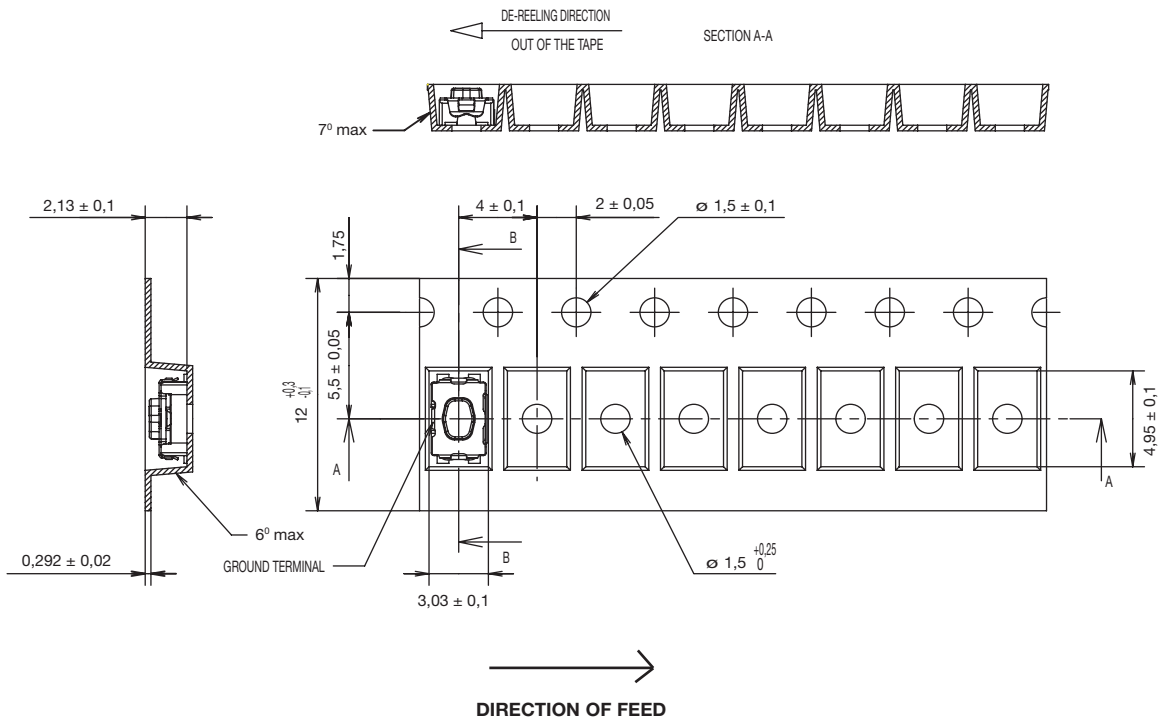
# KMR 6 Series Microminiature SMT Top Actuated IP67

NG - No Ground Pin

Tactile Switches



## TAPE & REEL



# KMR 7 Series Microminiature SMT Top Actuated IP67

## Features/Benefits

- Watertight IP67
- Standard and long life versions
- No ground pin
- Ultra low current capabilities
- Excellent tactile feel

## Typical Applications

- Automotive
- Medical
- Consumer
- Industrial



Tactile Switches

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type NG<br>See description<br>below | Operating<br>force<br>N (grs) | Operating<br>life<br>(cycles) | Travel (mm)   |
|-------------------------------------|-------------------------------|-------------------------------|---------------|
| KMR711NG LFS                        | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR711NG ULC LFS                    | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR713NG LFG                        | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR713NG ULC LFG                    | 1.2 (120) ± 0.30              | 100,000                       | 0.20 mm ± 0.1 |
| KMR721NG LFS                        | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR721NG ULC LFS                    | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR723NG LFG                        | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR723NG ULC LFG                    | 2.0 (200) ± 0.50              | 100,000                       | 0.25 mm ± 0.1 |
| KMR731NG LFS                        | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR731NG ULC LFS                    | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR732NG LFS                        | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR732NG ULC LFS                    | 3.0 (300) ± 0.75              | 300,000                       | 0.25 mm ± 0.1 |
| KMR733NG LFG                        | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR733NG ULC LFG                    | 3.0 (300) ± 0.75              | 100,000                       | 0.25 mm ± 0.1 |
| KMR741NG LFS                        | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR741NG ULC LFS                    | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR742NG LFS                        | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR742NG ULC LFS                    | 4.0 (400) ± 1.00              | 200,000                       | 0.30 mm ± 0.1 |
| KMR743NG LFG                        | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |
| KMR743NG ULC LFG                    | 4.0 (400) ± 1.00              | 100,000                       | 0.30 mm ± 0.1 |

## Electrical

|                        | Silver     | Gold    |
|------------------------|------------|---------|
| MAXIMUM POWER:         | 1 VA       | 0.2 VA  |
| MAXIMUM VOLTAGE:       | 32 VDC     | 32 VDC  |
| MINIMUM VOLTAGE:       | 20 mVDC    | 20 mVDC |
| MAXIMUM CURRENT:       | 50 mA      | 10 mA   |
| MINIMUM CURRENT:       | 1 mA*      | 1 mA*   |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms |         |
| CONTACT RESISTANCE:    | ≤ 100 mΩ   |         |
| INSULATION RESISTANCE: | ≥ 1GΩ      |         |
| BOUNCE TIME:           | ≤ 3 ms     |         |

\*For ULC version minimum current is 1µA at 1.8 VDC

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## Packaging

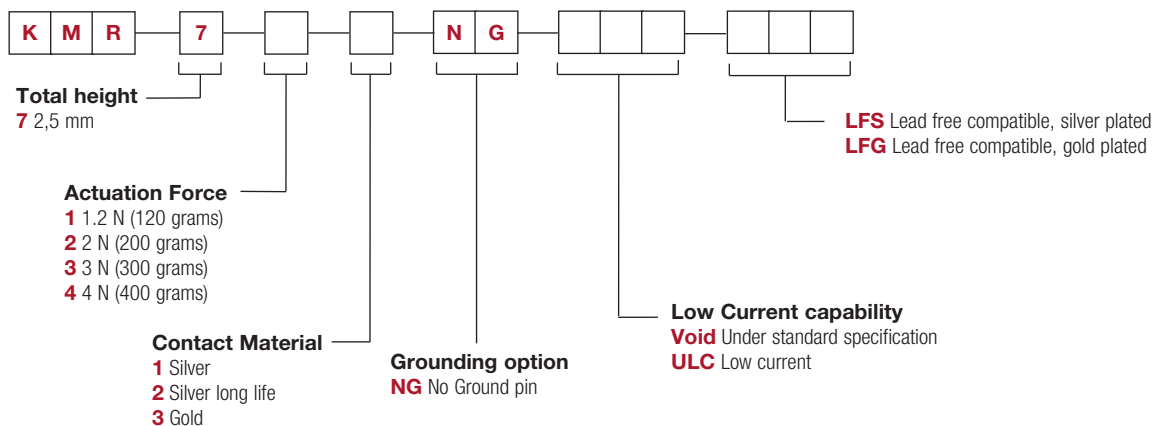
In reels of 6,000 pieces  
External diameter 330 mm ± 2 mm

**NOTE:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

TACTILE FEELING: KMR 7 series with actuation force in 2N - 3N - 4N: ≥ 25%  
KMR 7 series with actuation force in 1.2N: ≥ 20%

## Part Number Description

For any part number different from those listed above, please consult your local representative.



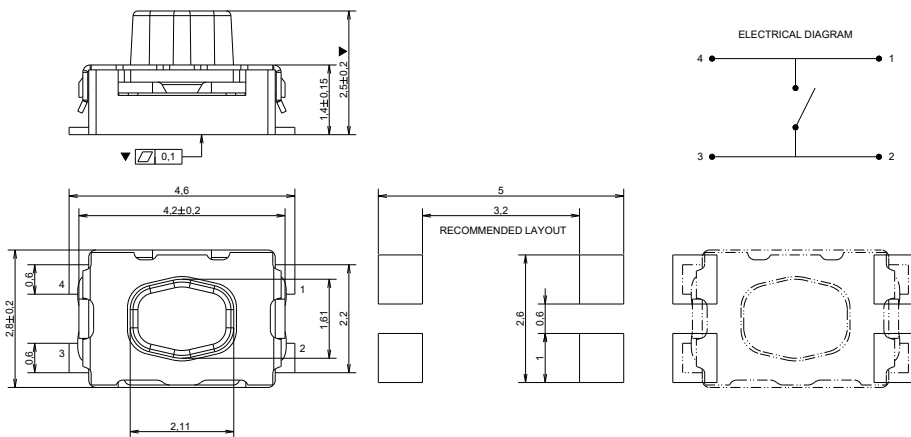
\* Silver long life is available in 3N and 4N actuation force. For other versions, please contact Customer Service.

# KMR 7 Series Microminiature SMT Top Actuated IP67

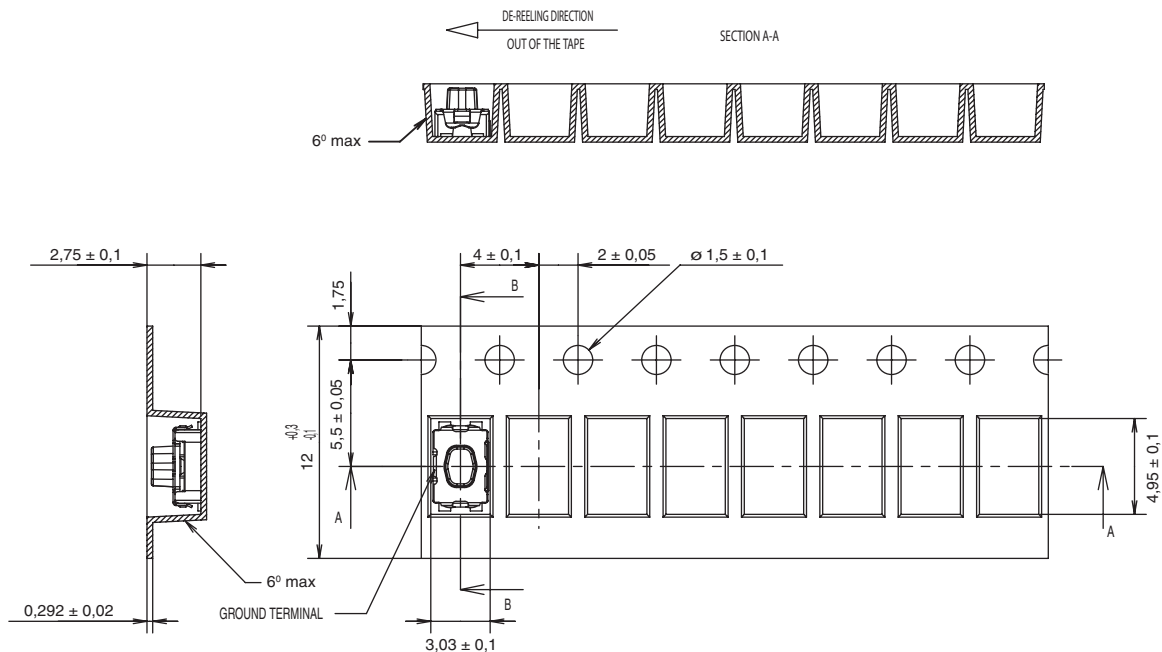
NG - No Ground Pin

Tactile Switches

B



## TAPE & REEL



# KMR 8 Series Microminiature SMT Top Actuated

Tactile Switches

## Features/Benefits

- Small footprint
- 3 actuation forces
- Excellent tactile feel
- Hard actuator
- IP40

## Typical Applications

- Automotive
- Mobile phones
- Industrial electronics
- Medical equipment



## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type G and NG<br>See description<br>below | Operating<br>force<br>N (grs) | Operating<br>life<br>(cycles) | Travel (mm)   |
|---|-------------------------------|-------------------------------|---------------|
| KMR811G LFS                               | 1.2 (120) ± 0.30              | 200,000                       | 0.20 mm ± 0.1 |
| KMR821G LFS                               | 2.0 (200) ± 0.50              | 200,000                       | 0.25 mm ± 0.1 |
| KMR831G LFS                               | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |
| KMR831NG ULC LFS                          | 3.0 (300) ± 0.75              | 150,000                       | 0.25 mm ± 0.1 |

TACTILE FEELING:

KMR 8 series with actuation force in 2N - 3N - 4N: ≥ 30%  
KMR 8 series with actuation force in 1.2N: ≥ 20%

## Electrical

|                        |            |
|------------------------|------------|
|                        | Silver     |
| MAXIMUM POWER:         | 1 VA       |
| MAXIMUM VOLTAGE:       | 32 VDC     |
| MINIMUM VOLTAGE:       | 20 mVDC    |
| MAXIMUM CURRENT:       | 50 mA      |
| MINIMUM CURRENT:       | 1 mA*      |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms |
| CONTACT RESISTANCE:    | ≤ 100 mΩ   |
| INSULATION RESISTANCE: | ≥ 1GΩ      |
| BOUNCE TIME:           | ≤ 3 ms     |

\*For ULC version minimum current is 1µA at 1.8 VDC

## Environmental

|                        |               |
|------------------------|---------------|
|                        | Silver        |
| OPERATING TEMPERATURE: | -40°C to 85°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

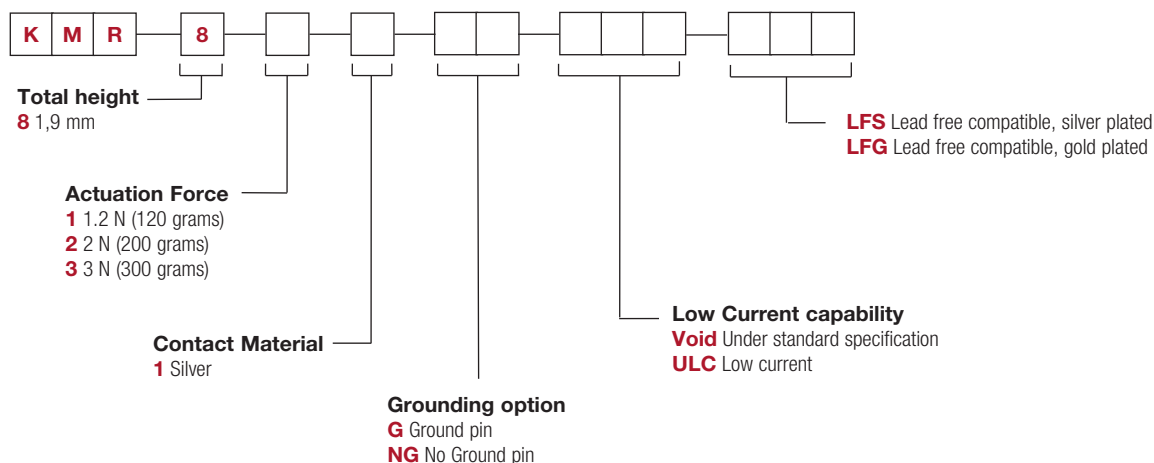
## Packaging

In reels of 7,000 pieces  
External diameter 330 mm ± 2 mm

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## Part Number Description

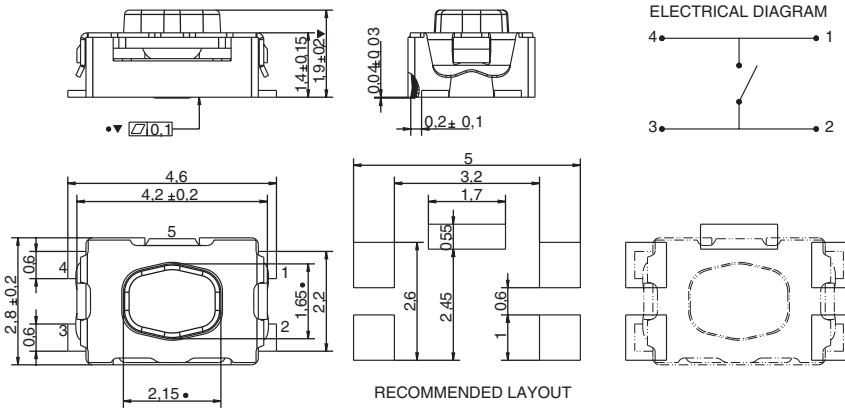
For any part number different from those listed above, please consult your local representative.



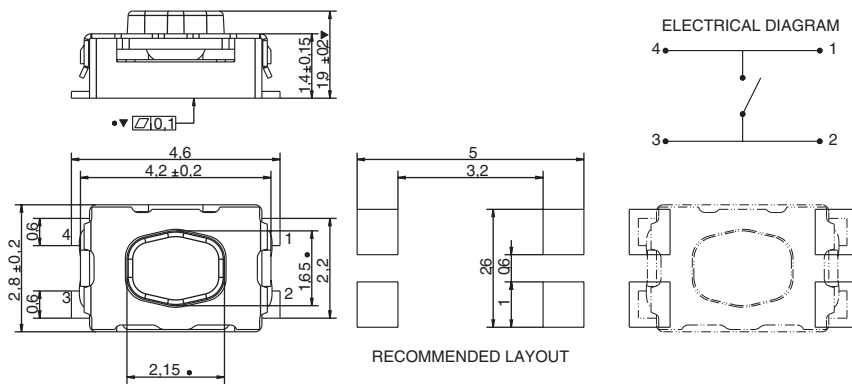
# KMR 8 Series Microminiature SMT Top Actuated

Tactile Switches

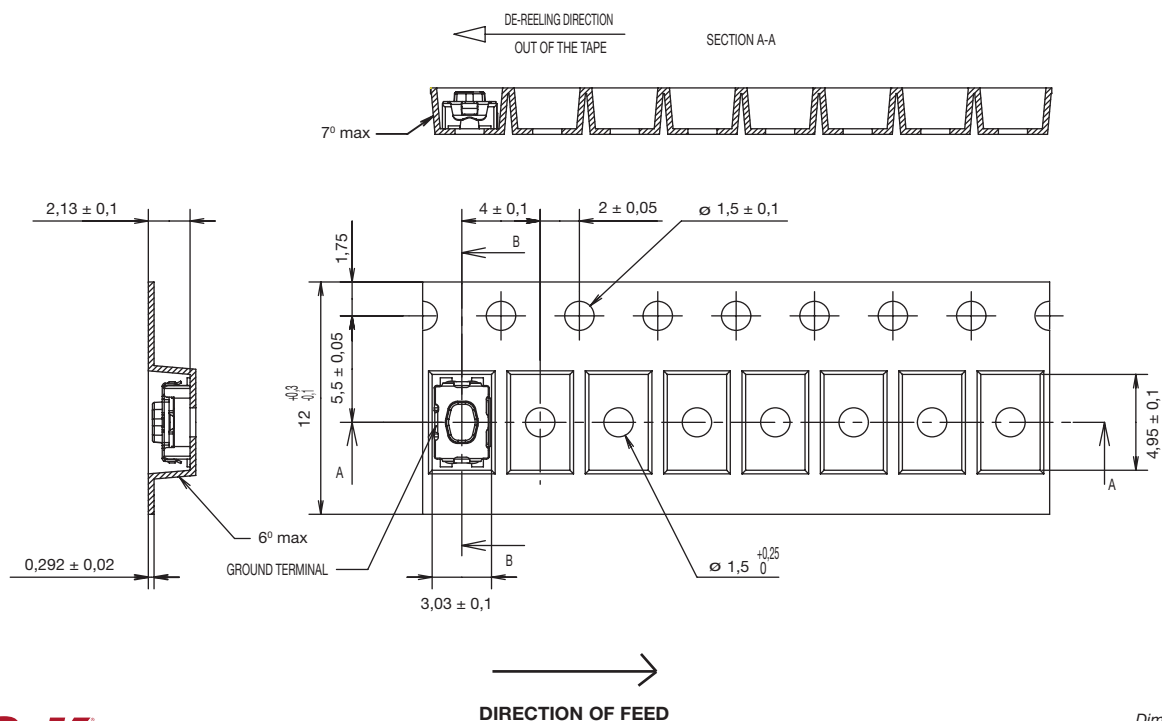
## G - Ground Pin



## NG - No Ground Pin



## TAPE & REEL



# KMS Series Microminiature SMT Side Actuated

## Features/Benefits

- 1.42mm thickness with excellent tactile feel
- ESD protection by compact size
- Positioning pegs for stability
- RoHS compliant and compatible

## Typical Applications

- Mobile phones
- Medical handheld monitors
- Consumer electronics
- Telecommunication networks



## Specification

FUNCTION: Momentary  
CONTACT ARRANGEMENT: SPST, N.O.  
TERMINALS: Gullwing type for SMT  
IP40 Sealed

## Mechanical

OVERLOAD: 20N  
TACTILE FEELING: 15% min. for the 2N version  
25% min for the 2.5N version

| Type       | Operating force<br>Newtons (grams) | Operating life<br>(operations) | Travel      |
|------------|------------------------------------|--------------------------------|-------------|
| KMS221G/GP | 2N (200) ± 0.5                     | 100 K cycles                   | 0,25 ± 0,15 |
| KMS223G/GP | 2N (200) ± 0.5                     | 100 K cycles                   | 0,25 ± 0,15 |
| KMS231G/GP | 3N (300) ± 0.6                     | 100 K cycles                   | 0,3 ± 0,15  |
| KMS233G/GP | 3N (300) ± 0.6                     | 100 K cycles                   | 0,3 ± 0,15  |

**Note:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

## Packaging

Tape and reels in reels of 3,000 pieces.  
External diameter 330mm ± 2mm.

## Electrical

|                        | Silver            | Gold   |
|------------------------|-------------------|--------|
| MAXIMUM POWER:         | 1 VA              | 0.2 VA |
| MAXIMUM VOLTAGE:       | 32 VDC            | 32 VDC |
| MAXIMUM CURRENT DC:    | 50 mA             | 10 mA  |
| MINIMUM CURRENT DC:    | 1 mA              | 1 mA   |
| DIELECTRIC STRENGTH:   | 250 VDC           |        |
| CONTACT RESISTANCE:    | ≤100 mΩ           |        |
| INSULATION RESISTANCE: | 10 <sup>9</sup> Ω |        |
| BOUNCE TIME:           | ≤ 3 ms            |        |

## Environmental

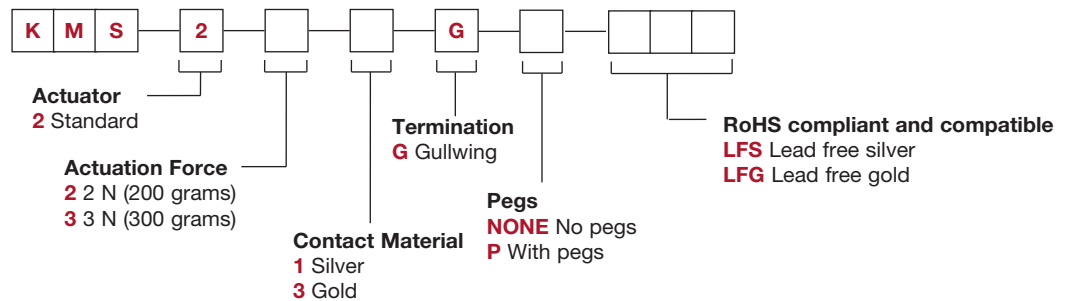
|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

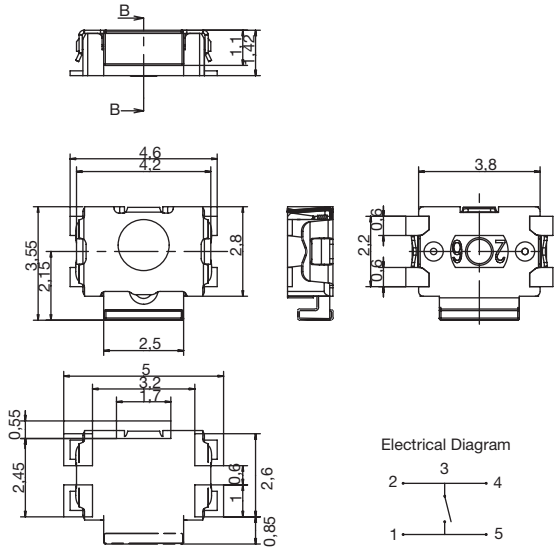


# KMS Series Microminiature SMT Side Actuated

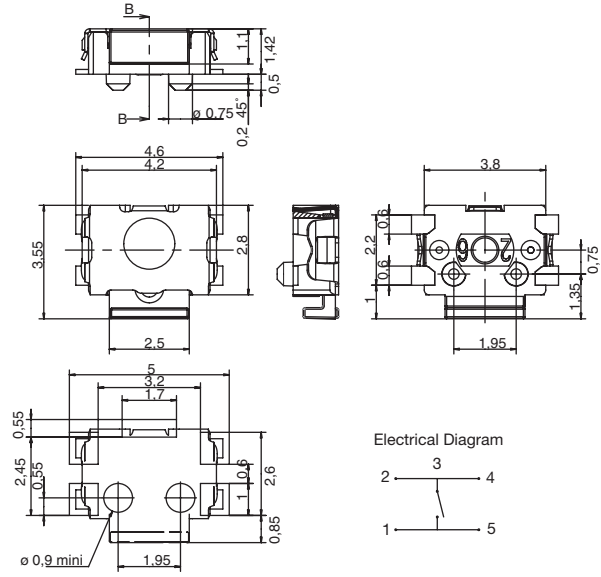
Tactile Switches

B

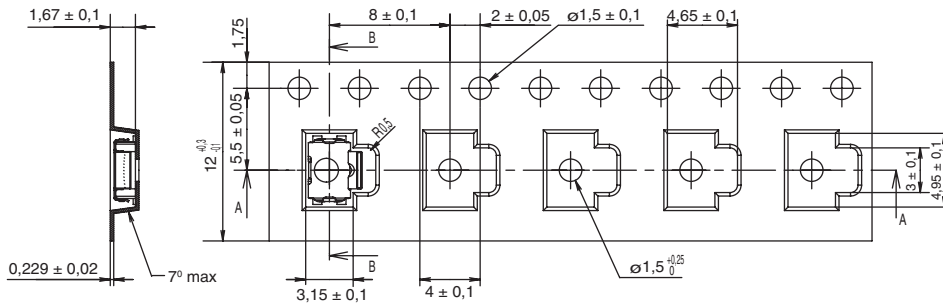
## KMS



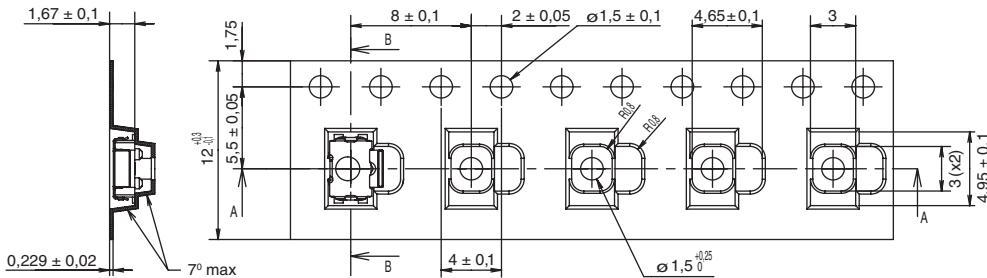
## KMS WITH PEGS



## TAPE & REEL



## WITH PEGS



DIRECTION OF FEED



First Angle  
Projection



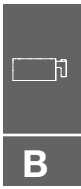
# PTS525 Series Microminiature Tact Switch for SMT

## Features/Benefits

- 0.8 & 1.5 mm actuator height
- Ruggedized package in a compact size
- High number of cycles

## Typical Applications

- Consumer products
- Instrumentation
- Remote controls



Tactile Switches

## Specification

FUNCTION: Momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.

## Electrical

MAXIMUM VOLTAGE: 15 VDC  
MAXIMUM CURRENT DC: 20 mA  
DIELECTRIC STRENGTH: 250 VA C (1mn)  
CONTACT RESISTANCE: ≤ 100 mΩ  
INSULATION RESISTANCE: ≥ 100 MΩ  
BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -20°C to 70°C

## Process

SOLDERING: This component is suited to the following methods:  
Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

Switches in reels of:  
5,000 pieces in 0.8 mm height  
4,000 pieces in 1.5 mm height  
Dimensions of reels according to EIA 481B  
External diameter 330 mm

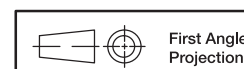
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- **The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.**

## How To Order

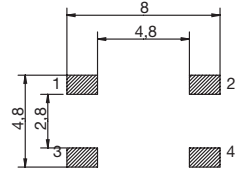
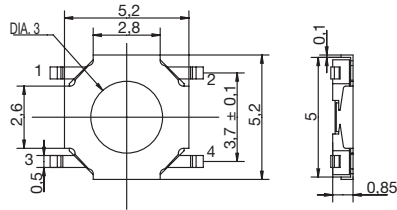
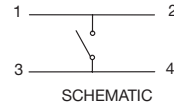
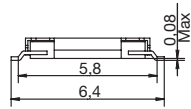
Please see chart below for full part numbers.

| Part Number              | Height (mm) | Leads Shape | Ground Pin | Force          | Travel (mm) | Operating Life |
|--------------------------|-------------|-------------|------------|----------------|-------------|----------------|
| PTS525 SM08 SMTR 2 LFS   | 0.8         | G           | No         | 160 gf ± 50 gf | 0.25 ± 0.2  | 1,000,000      |
| PTS525 SK08 SMTR 2 LFS   | 0.8         | G           | No         | 260 gf ± 50 gf | 0.25 ± 0.2  | 200,000        |
| PTS525 SM15 SMTR 2 LFS   | 1.5         | G           | No         | 160 gf ± 50 gf | 0.25 ± 0.2  | 1,000,000      |
| PTS525 SK15 SMTR 2 LFS   | 1.5         | G           | No         | 260 gf ± 50 gf | 0.25 ± 0.2  | 500,000        |
| PTS525 SMG15 SMTR 2 LFS  | 1.5         | G           | Yes        | 160 gf ± 50 gf | 0.25 ± 0.2  | 1,000,000      |
| PTS525 SKG15 SMTR 2 LFS  | 1.5         | G           | Yes        | 260 gf ± 50 gf | 0.25 ± 0.2  | 500,000        |
| PTS525 SMG15J SMTR 2 LFS | 1.5         | J           | Yes        | 160 gf ± 50 gf | 0.25 ± 0.2  | 1,000,000      |
| PTS525 SKG15J SMTR 2 LFS | 1.5         | J           | Yes        | 260 gf ± 50 gf | 0.25 ± 0.2  | 500,000        |



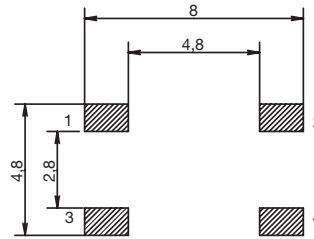
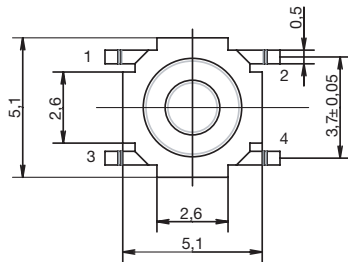
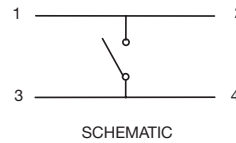
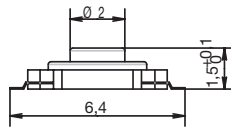
# PTS525 Series Microminiature Tact Switch for SMT

**PTS525 SM08 SMTR2 LFS**  
**PTS525 SK08 SMTR2 LFS**



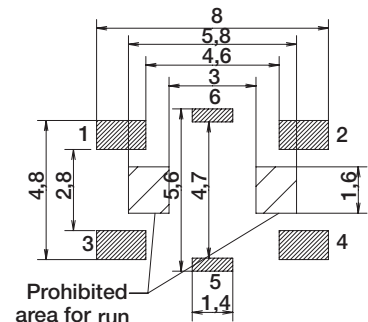
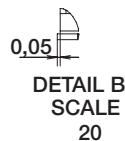
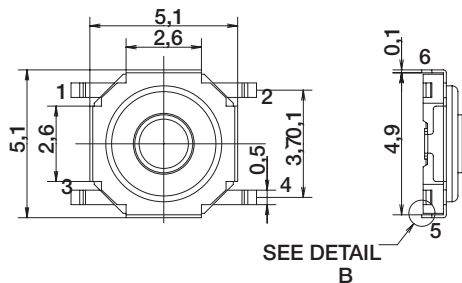
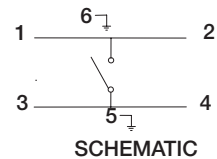
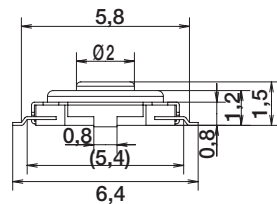
RECOMMENDED PCB LAYOUT

**PTS525 SM15 SMTR2 LFS**  
**PTS525 SK15 SMTR2 LFS**



RECOMMENDED PCB LAYOUT

**PTS525 SMG15 SMTR2 LFS**  
**PTS525 SKG15 SMTR2 LFS**

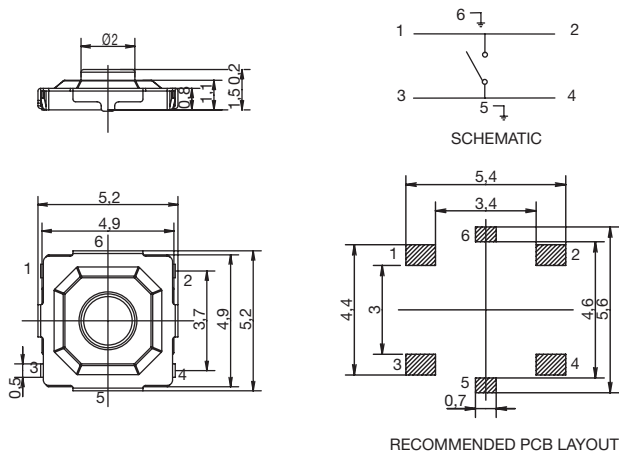


RECOMMENDED PCB LAYOUT



# PTS525 Series Microminiature Tact Switch for SMT

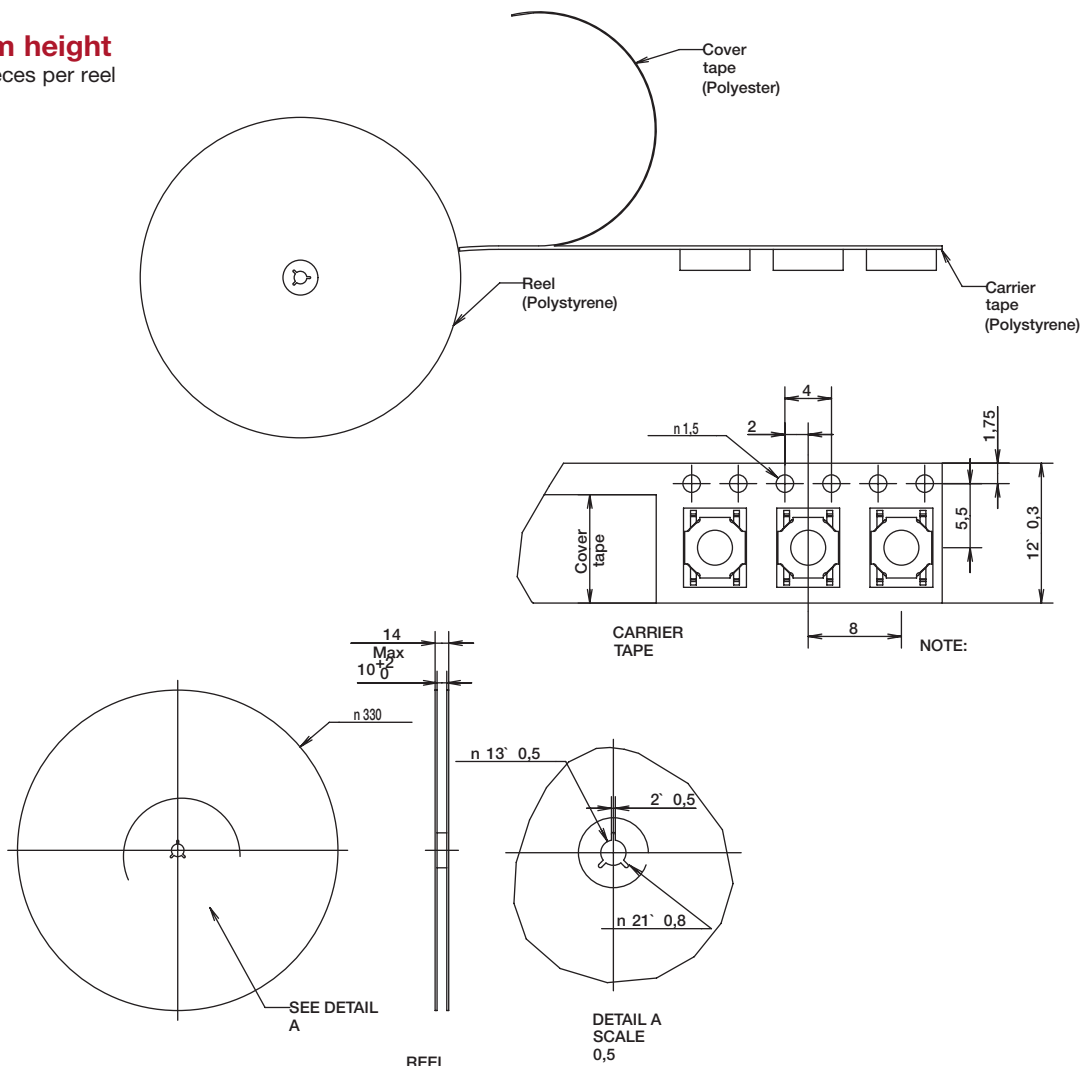
**PTS525 SMG15J SMTR2 LFS**  
**PTS525 SKG15J SMTR2 LFS**



**B** Tactile Switches

## TAPE & REEL

**0.8 mm height**  
5,000 pieces per reel



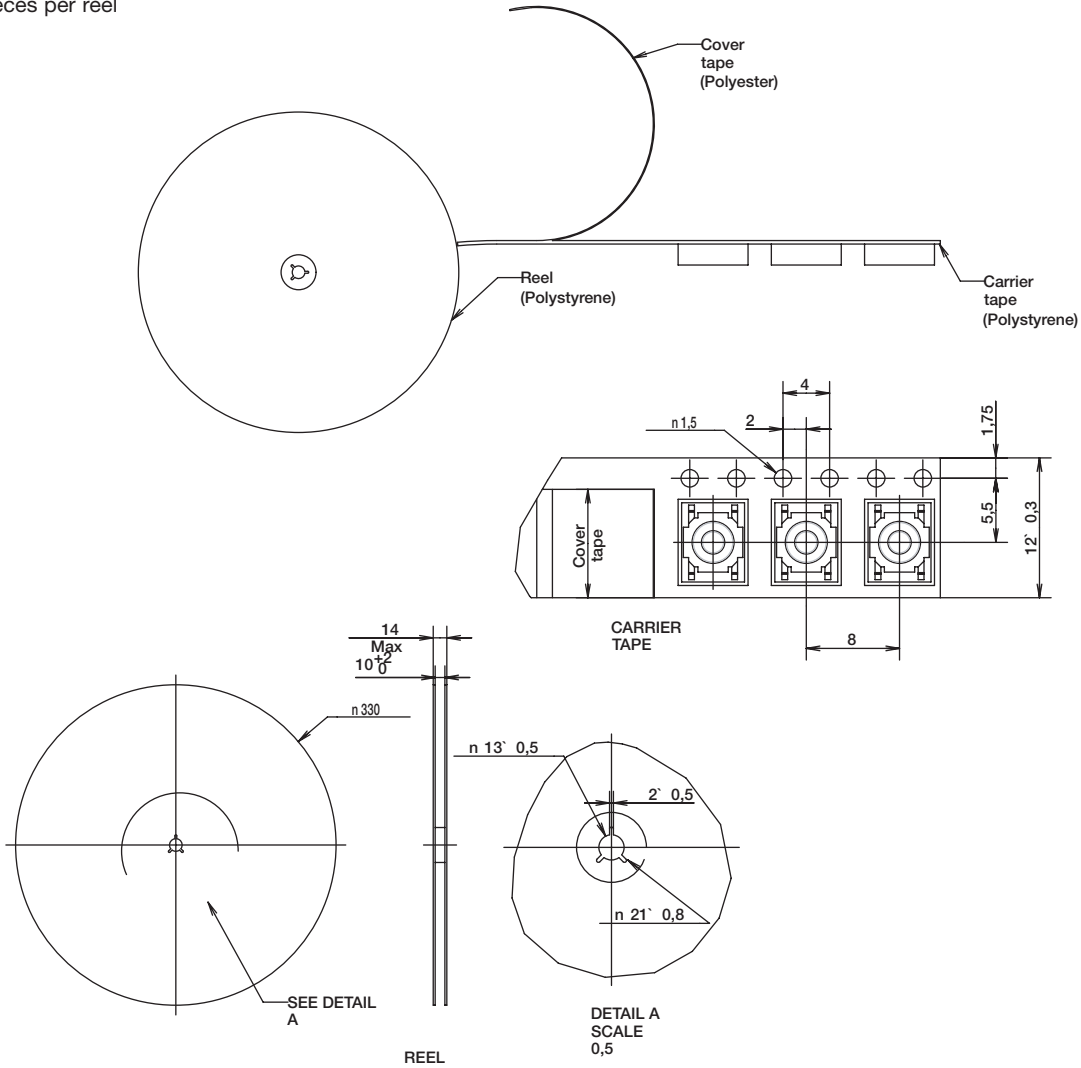
# PTS525 Series Microminiature Tact Switch for SMT

## TAPE & REEL

**1.5 mm height**  
4,000 pieces per reel

Tactile Switches

B



**NEW**

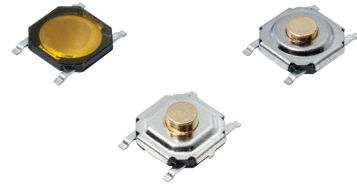
# PTS526 Series Microminiature SMT Top Actuated

## Features/Benefits

- 5.2 x 5.2 mm footprint
- Variable thickness
- Commercial grade

## Typical Applications

- IoT devices
- Home automation
- Remote controls



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: J and G type for SMT  
 TRAVEL: 0.25 mm +/- 0.1 mm

| Item Description        | Operation Force (gf) | Operating Life | Ground Pin         |
|-------------------------|----------------------|----------------|--------------------|
| PTS526SM***SMTR2 LFS    | 160 ± 50             | 500,000        | Without ground pin |
| PTS526SK***SMTR2 LFS    | 250 ± 50             | 200,000        | Without ground pin |
| PTS526SP***SMTR2 LFS    | 320 ± 50             | 100,000        | Without ground pin |
| PTS526SMG***SMTR2 LFS   | 160 ± 50             | 500,000        | With ground pin    |
| PTS526SKG***SMTR2 LFS   | 250 ± 50             | 200,000        | With ground pin    |
| PTS526SPG***SMTR2 LFS   | 320 ± 50             | 100,000        | With ground pin    |
| PTS526SM****SMTR21 LFS  | 160 ± 50             | 1,000,000      | Without ground pin |
| PTS526SMG****SMTR21 LFS | 160 ± 50             | 1,000,000      | With ground pin    |

\* PTS526SX08 SMTR2 LFS 160gf version with 200,000 life cycles

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mn)  
 CONTACT RESISTANCE: ≤ 100 mΩ initial  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

In reels of 5,000 pieces for 0.8 mm height  
 In reels of 4,000 pieces for 1.5 ; 1.7 and 2.0 mm height  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

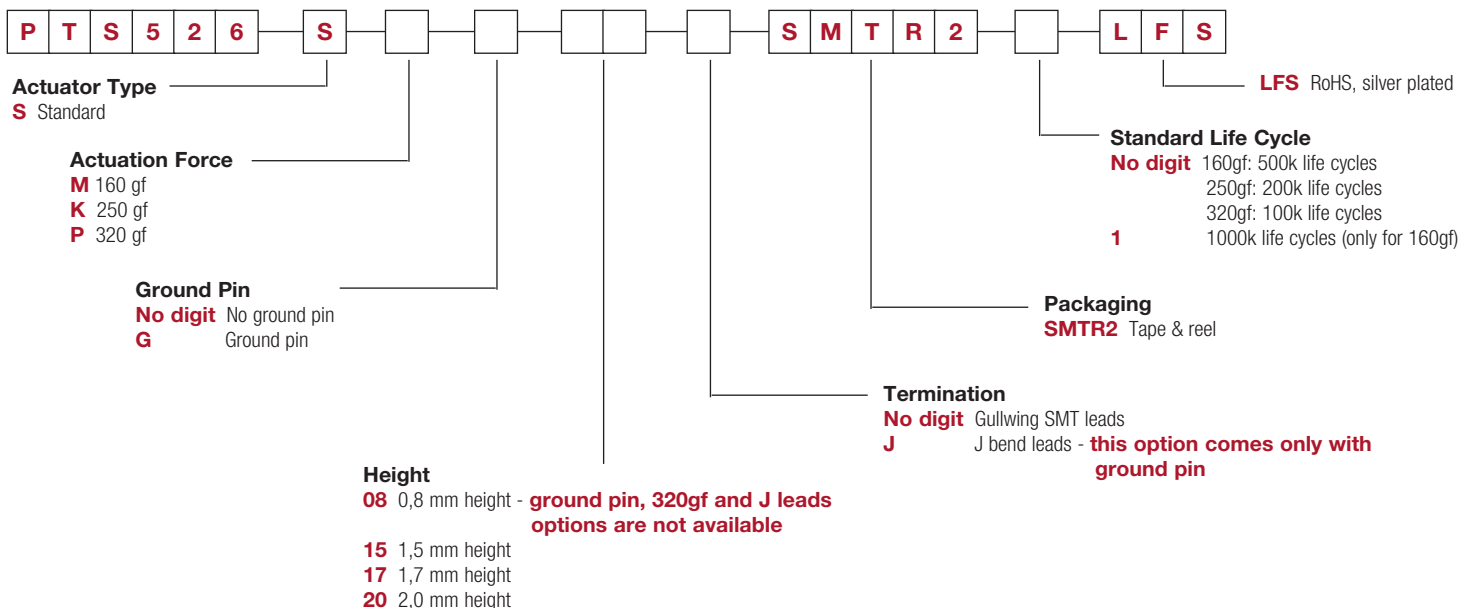
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

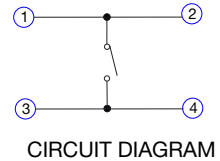
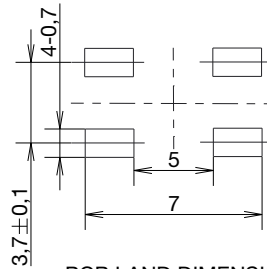
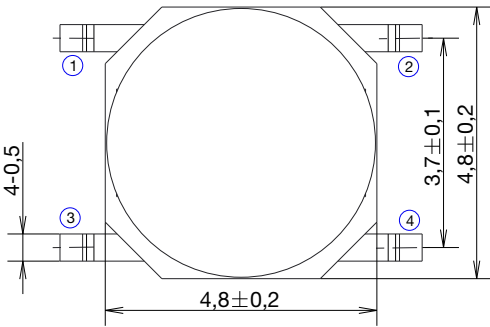
For any part number different from those listed above, please consult your local representative.



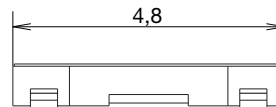
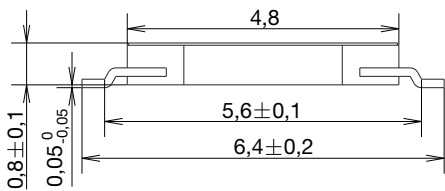
# PTS526 Series Microminiature SMT Top Actuated

**NEW**

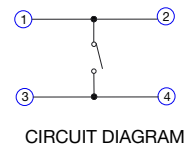
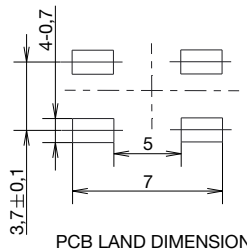
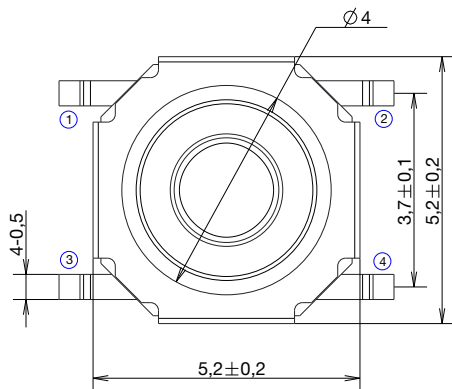
0.8 mm height – G leads lead only, no ground pin



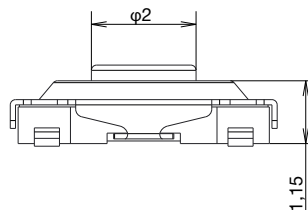
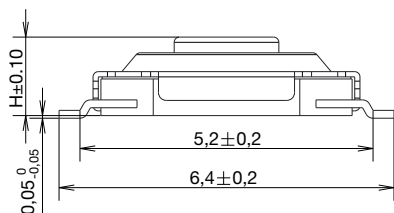
PCB LAND DIMENSION



1.5 ; 1.7 and 2.0 mm height – G leads, no ground pin



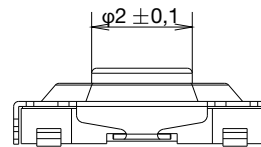
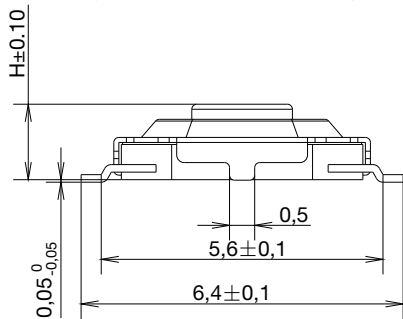
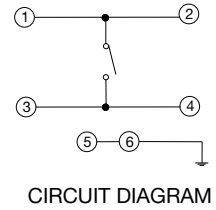
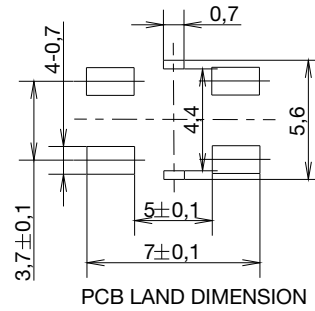
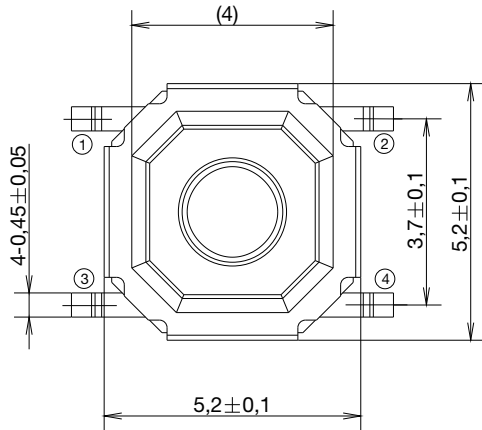
PCB LAND DIMENSION



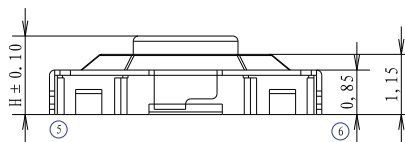
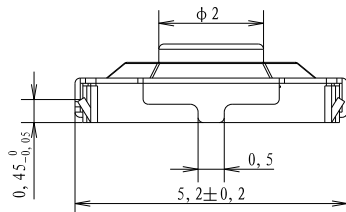
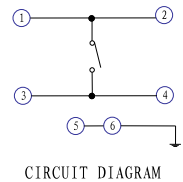
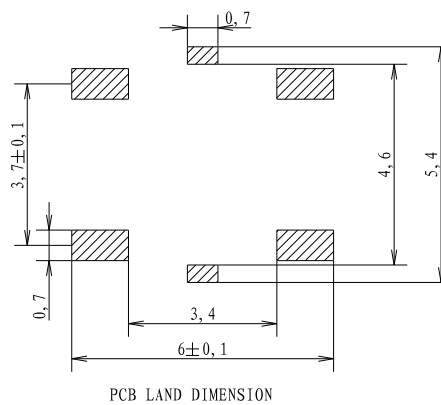
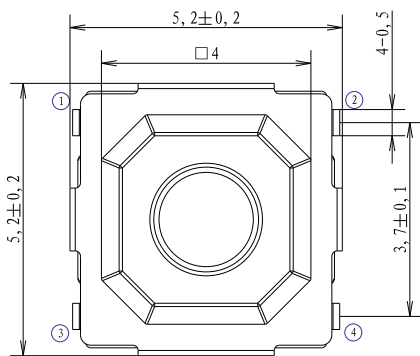
**NEW**

# PTS526 Series Microminiature SMT Top Actuated

## 1.5 ; 1.7 and 2.0 mm height – G leads, with ground pin



## 1.5 ; 1.7 and 2.0 mm height – J leads, with ground pin



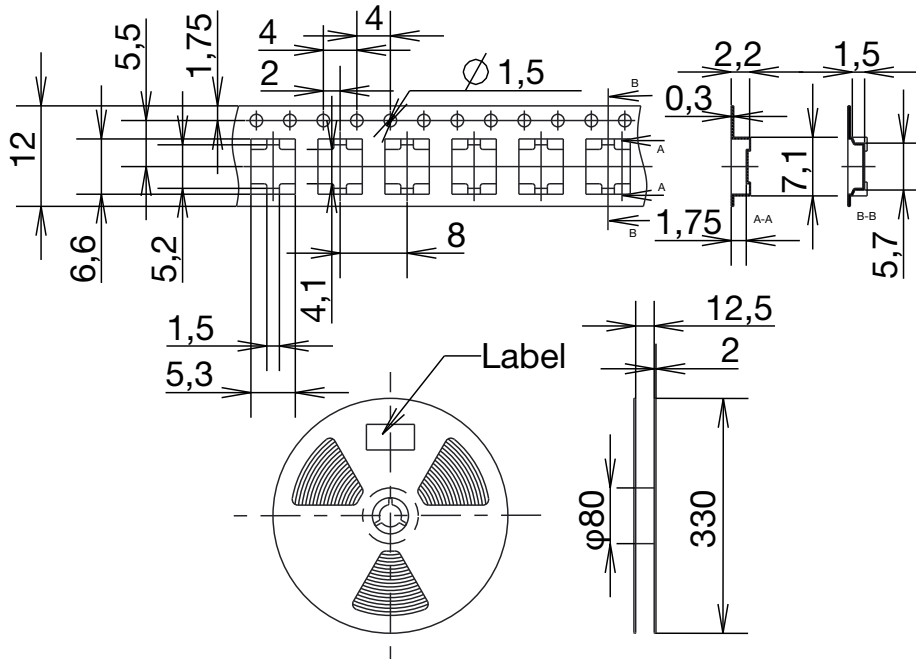


# PTS526 Series Microminiature SMT Top Actuated

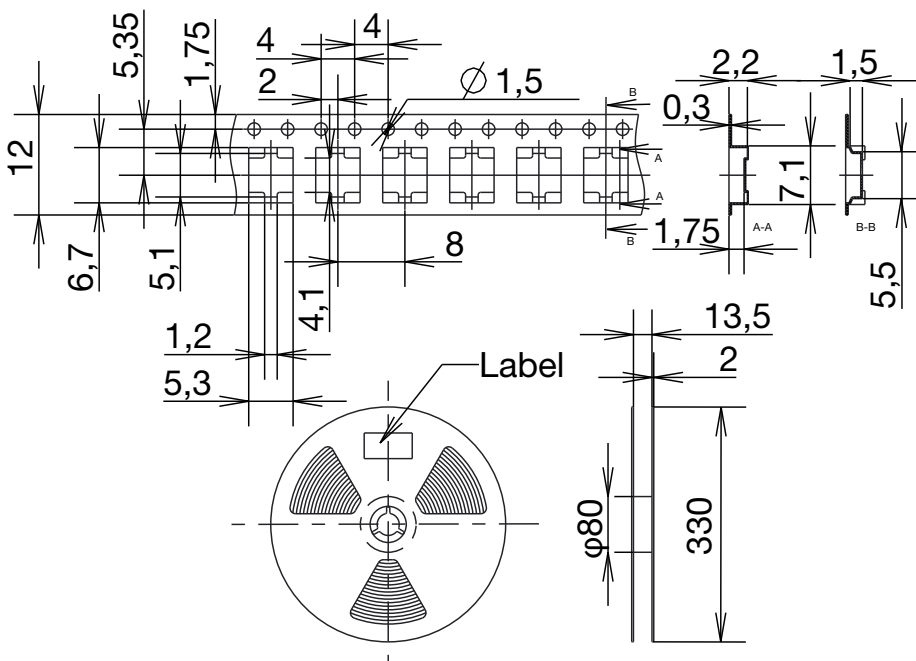
**NEW**

TAPE & REEL

**0,8 mm height**  
5,000 pieces per reel



**1.5; 1.7 and 2.0 mm height**  
4,000 pieces per reel



Dimensions are shown: mm  
Specifications and dimensions subject to change



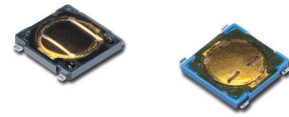
# PTS530 Series Ultra Low Profile SMT Top Actuated

## Features/Benefits

- 4.5 x 4.5 mm footprint
- 0.55 mm thickness
- High number of cycles
- Symbol line identification

## Typical Applications

- MP3 accessories
- Bluetooth headset
- Remote controls
- Garage door opener



## Specifications

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
TERMINALS: Gullwing for SMT  
TRAVEL: 0.2mm - 0.1 /+ 0.15mm

| Part Number           | Operating Force (gf) | Operating Life (operations) |
|-----------------------|----------------------|-----------------------------|
| PTS530 GN055 SMTR LFS | 100 ± 30             | 1,000,000                   |
| PTS530 GM055 SMTR LFS | 160 ± 30             | 1,000,000                   |
| PTS530 GH055 SMTR LFS | 200 ± 30             | 200,000                     |
| PTS530 GK055 SMTR LFS | 260 ± 30             | 200,000                     |
| PTS530 GG065 SMTR LFS | 400 ± 70             | 300,000                     |
| PTS530 GS065 SMTR LFS | 600 - 50/+100        | 150,000                     |

## Packaging

Switches in reels of 7,000 pieces.  
Dimensions of reels according to EIA 481B  
External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
MAXIMUM CURRENT DC: 50 mA  
DIELECTRIC STRENGTH: 250 VA C (1mn)  
CONTACT RESISTANCE: ≤ 100 mΩ  
INSULATION RESISTANCE: ≥ 100 MΩ  
BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
Infrared Reflow Soldering in accordance with IEC61760-1

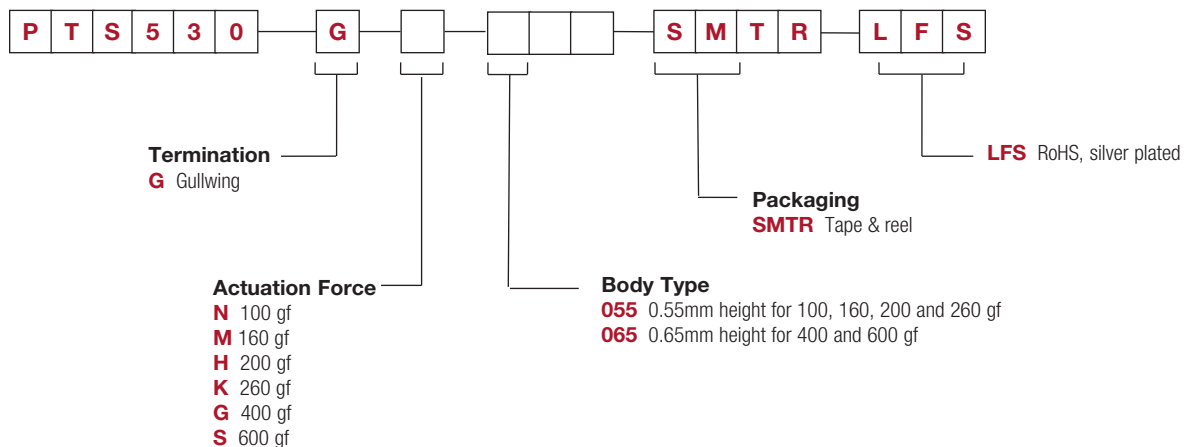
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- **The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.**

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

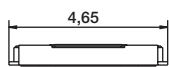
For any part number different from those listed above, please consult your local representative.



# PTS530 Series Ultra Low Profile SMT Top Actuated

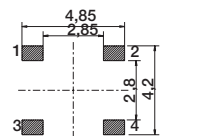
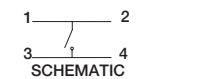
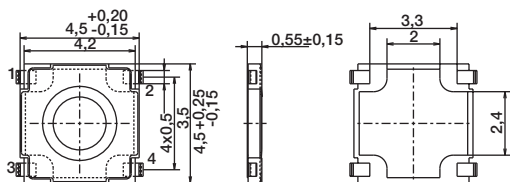
## TERMINATION

**G** GULLWING

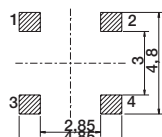


## BODY TYPE / ACTUATION FORCE

**055** 0,55 MM HEIGHT



ALTERNATIVE PCB LAYOUT



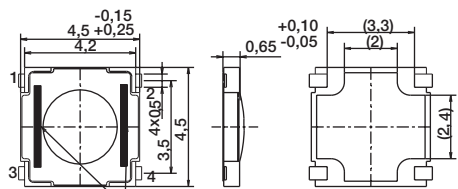
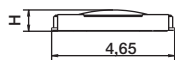
RECOMMENDED PCB LAYOUT

Actuation force identification lines:

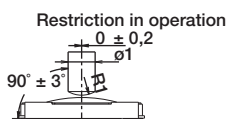
|           |          |
|-----------|----------|
| N: 100 gf |          |
| M: 160 gf | No Lines |
| H: 200 gf |          |
| K: 260 gf |          |

**065** 0,65 MM HEIGHT

| PART NUMBER             | HEIGHT                |
|-------------------------|-----------------------|
| PTS 530 GS 065 SMTR LFS | +0.1<br>-0.05<br>0.72 |
| PTS 530 GG 065 SMTR LFS | 0.68                  |

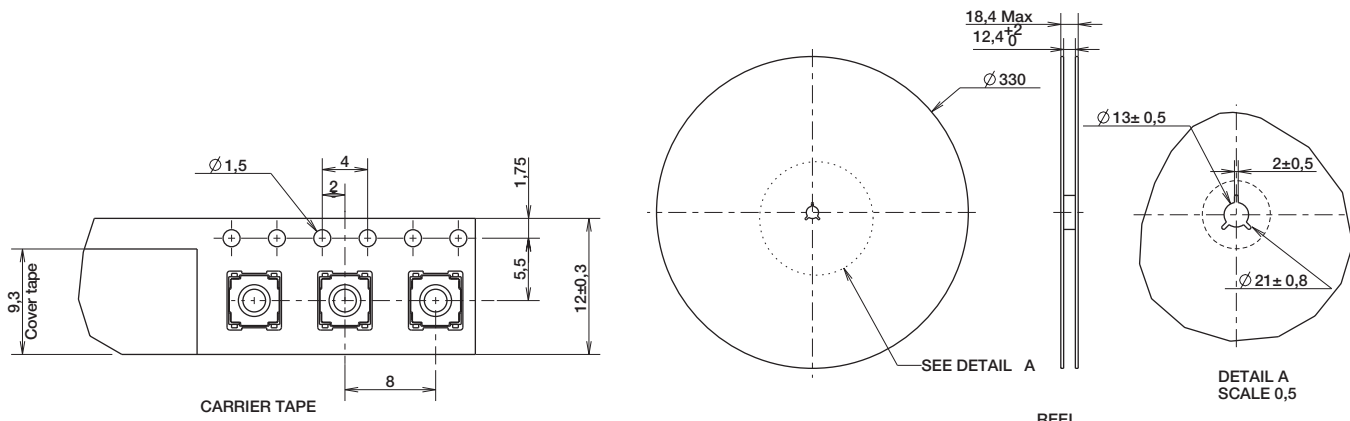


Force symbol lines for 600 gf  
No symbol line for 400 gf



|           |          |
|-----------|----------|
| G: 400 gf | No Lines |
| S: 600 gf |          |

## TAPE & REEL



# PTS540 Series Ultra Low Profile SMT Top Actuated

## Features/Benefits

- 3.7 x 3.7 mm footprint
- 0.35 mm thickness
- High number of cycles

## Typical Applications

- MP3 accessories
- Bluetooth headset
- Remote controls



B

Tactile Switches

## Specifications

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
TERMINALS: J type for SMT  
TRAVEL: 0.15 mm ± 0.1 mm

## Mechanical

| Part Number           | Operating Force (gf) | Operating Life (operations) |
|-----------------------|----------------------|-----------------------------|
| PTS540 JM035 SMTR LFS | 160 ± 50             | 500,000                     |
| PTS540 JK035 SMTR LFS | 230 ± 50             | 300,000                     |

## Packaging

Switches in reels of 10,000 pieces.  
Dimensions of reels according to EIA 481B  
External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
MAXIMUM CURRENT DC: 50 mA  
DIELECTRIC STRENGTH: 250 VA C (1mn)  
CONTACT RESISTANCE: ≤ 100 mΩ  
INSULATION RESISTANCE: ≥ 100 MΩ  
BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -30°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
Infrared Reflow Soldering in accordance with IEC61760-1

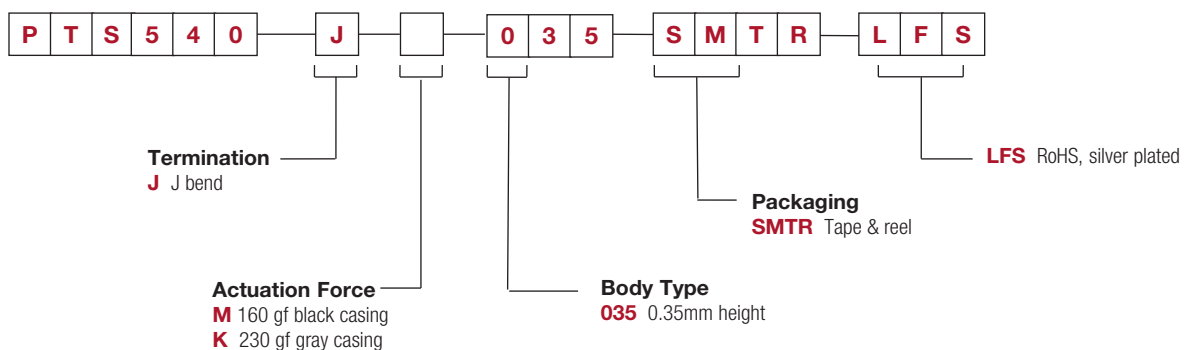
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

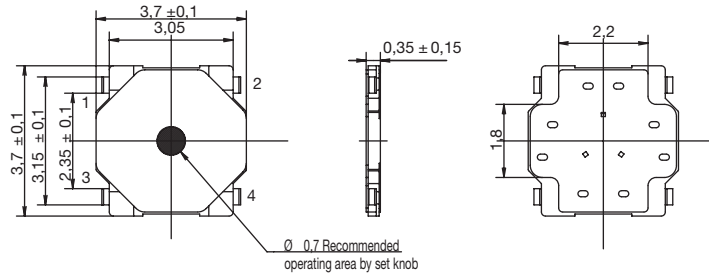
For any part number different from those listed above, please consult your local representative.



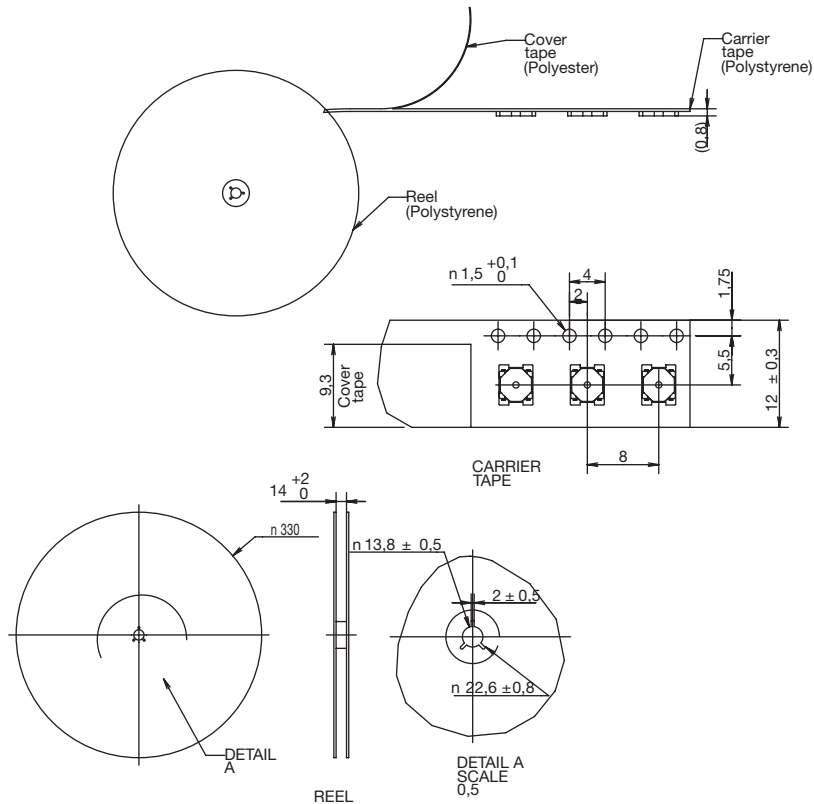
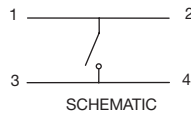
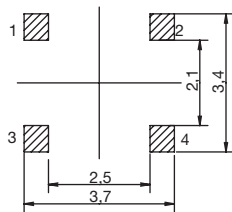
# PTS540 Series Ultra Low Profile SMT Top Actuated

PTS540

Tactile Switches



RECOMMENDED PCB



# PTS810 Series Microminiature SMT Top Actuated

## Features/Benefits

- 4.2 x 3.2 mm footprint
- 2.5 mm thickness
- High number of cycles
- Color coded actuators

## Typical Applications

- Control panels
- Nomad devices
- Remote controls



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: J type for SMT  
 TRAVEL: 160 & 260 gf: 0.15mm ± 0.1mm  
 400 & 600 gf: 0.20mm ± 0.1mm

|                         | Operating Force (gf) | Operating Life (operations) |
|-------------------------|----------------------|-----------------------------|
| PTS810 SJM 250 SMTR LFS | 160 ± 50             | 150,000                     |
| PTS810 SJK 250 SMTR LFS | 260 ± 70             | 50,000                      |
| PTS810 SJG 250 SMTR LFS | 400 ± 100            | 100,000                     |
| PTS810 SJS 250 SMTR LFS | 600 ± 150            | 150,000                     |

## Packaging

Switches in reels of 2,900 pieces.  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 16 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mn)  
 CONTACT RESISTANCE: ≤ 500 mΩ  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

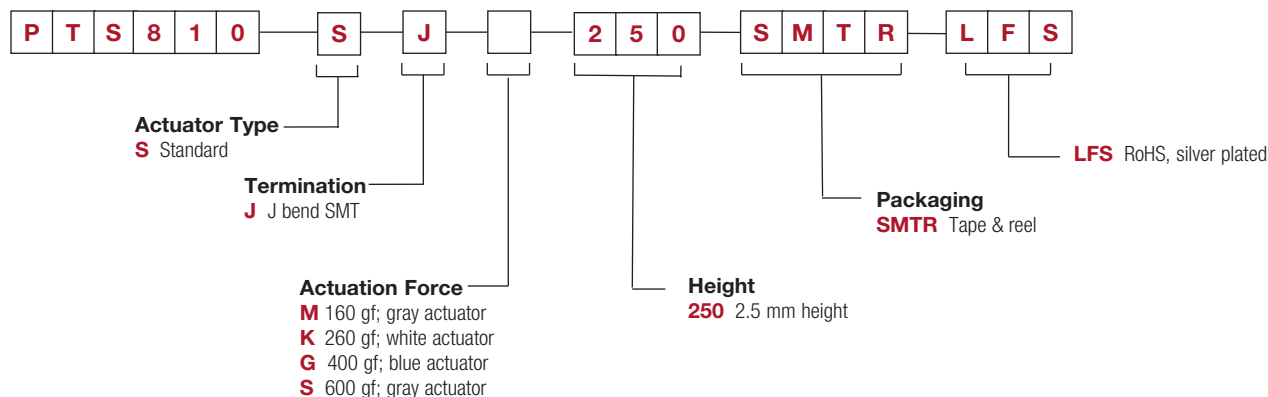
### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.

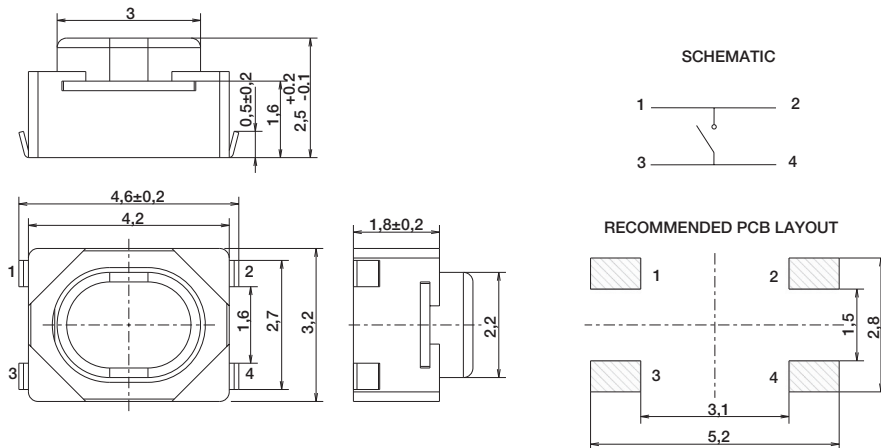


# PTS810 Series Microminiature SMT Top Actuated

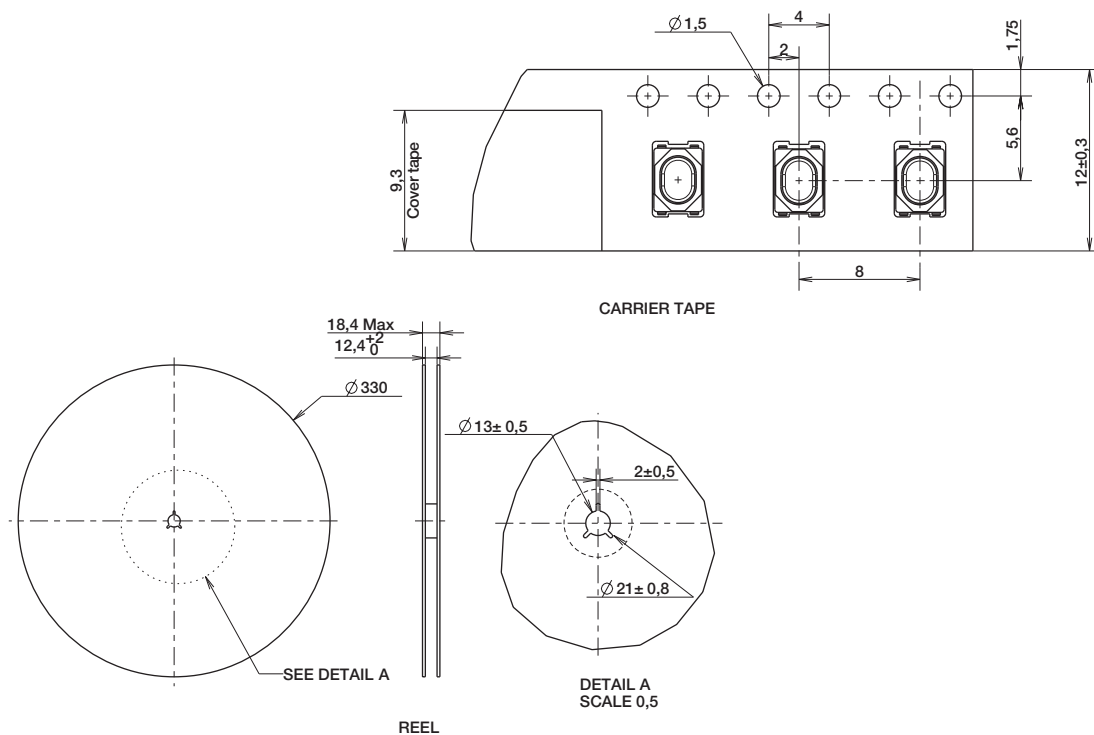
PTS810

Tactile Switches

B



## TAPE & REEL



**NEW**

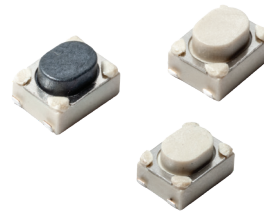
# PTS815 Series Microminiature SMT Top Actuated

## Features/Benefits

- 4.2 x 3.2 mm footprint
- 2.5 mm thickness
- Commercial grade

## Typical Applications

- IoT devices
- Home Automation
- Remote Controls



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: J type for SMT  
 TRAVEL: 0.20mm ± 0.1mm

|                         | Operating Force (gf) | Operating Life (operations) |
|-------------------------|----------------------|-----------------------------|
| PTS815 SJM 250 SMTR LFS | 180 ± 50             | 100,000                     |
| PTS815 SJK 250 SMTR LFS | 250 ± 50             | 100,000                     |
| PTS815 SJG 250 SMTR LFS | 400 ± 100            | 100,000                     |

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mn)  
 CONTACT RESISTANCE: ≤ 100 mΩ initial  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 90°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## Packaging

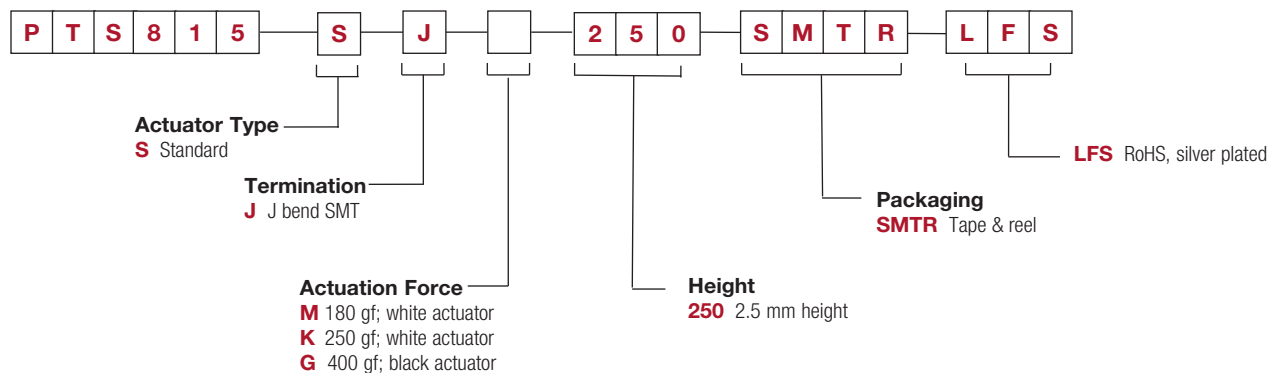
Switches in reels of 3,000 pieces.  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

**B**  
Tactile Switches

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

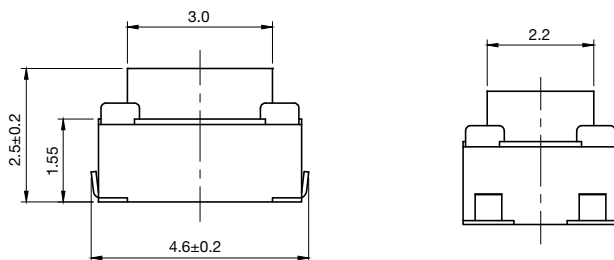
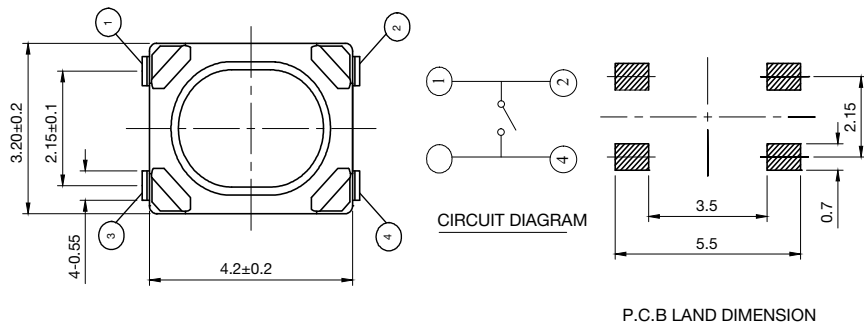
For any part number different from those listed above, please consult your local representative.



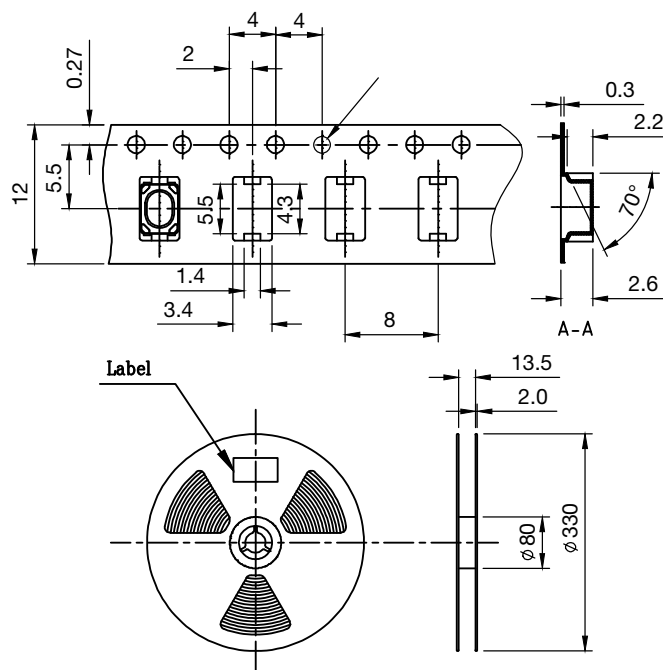


# PTS815 Series Microminiature SMT Top Actuated

PTS815



## TAPE & REEL



# PTS820 Series Microminiature SMT Top Actuated

## Features/Benefits

- 3.9 x 2.9 mm footprint
- Three different heights
- High number of cycles
- Reduced footprint

## Typical Applications

- Control panels
- Nomad devices
- Remote controls
- Keyless entry system



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: J type for SMT  
 TRAVEL: 0.2mm + 0.1mm / -0.05 mm

|                       | Operating Force (gf) | Life Cycles | Height mm | Pegs |
|-----------------------|----------------------|-------------|-----------|------|
| PTS820 J25M SMTR LFS  | 160 ± 50             | 200,000     | 2.5       | No   |
| PTS820 J25K SMTR LFS  | 250 ± 50             | 100,000     | 2.5       | No   |
| PTS820 J25MP SMTR LFS | 160 ± 50             | 200,000     | 2.5       | Yes  |
| PTS820 J25KP SMTR LFS | 250 ± 50             | 100,000     | 2.5       | Yes  |
| PTS820 J20M SMTR LFS  | 160 ± 50             | 200,000     | 2.0       | No   |
| PTS820 J20K SMTR LFS  | 250 ± 50             | 100,000     | 2.0       | No   |
| PTS820 J20MP SMTR LFS | 160 ± 50             | 200,000     | 2.0       | Yes  |
| PTS820 J20KP SMTR LFS | 250 ± 50             | 100,000     | 2.0       | Yes  |
| PTS820 J15M SMTR LFS  | 160 ± 50             | 200,000     | 1.5       | No   |
| PTS820 J15K SMTR LFS  | 250 ± 50             | 100,000     | 1.5       | No   |
| PTS820 J15MP SMTR LFS | 160 ± 50             | 200,000     | 1.5       | Yes  |
| PTS820 J15KP SMTR LFS | 250 ± 50             | 100,000     | 1.5       | Yes  |

## Packaging

Switches in reels of 2,300 pieces for 2.5 mm height  
 Switches in reels of 2,500 pieces for 2.0 mm height  
 Switches in reels of 3,000 pieces for 1.5 mm height  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 100 VA C (1mm)  
 CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

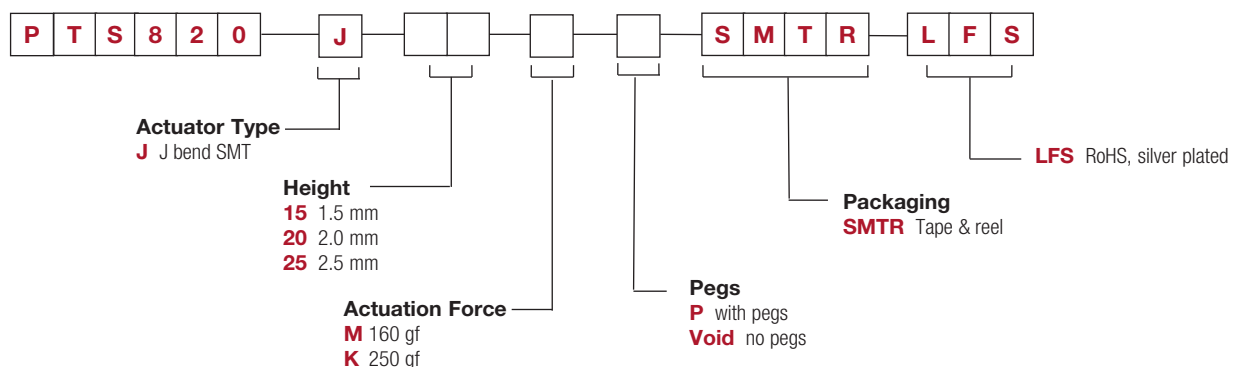
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.

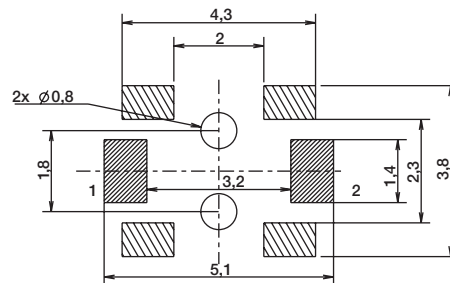
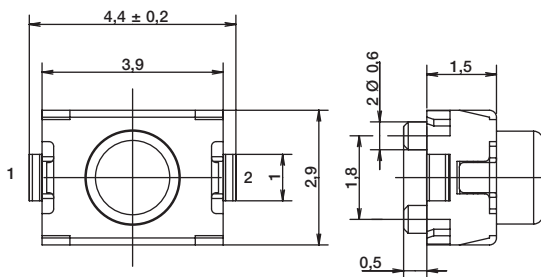
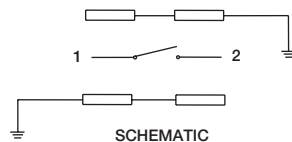
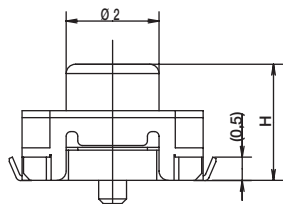


# PTS820 Series Microminiature SMT Top Actuated

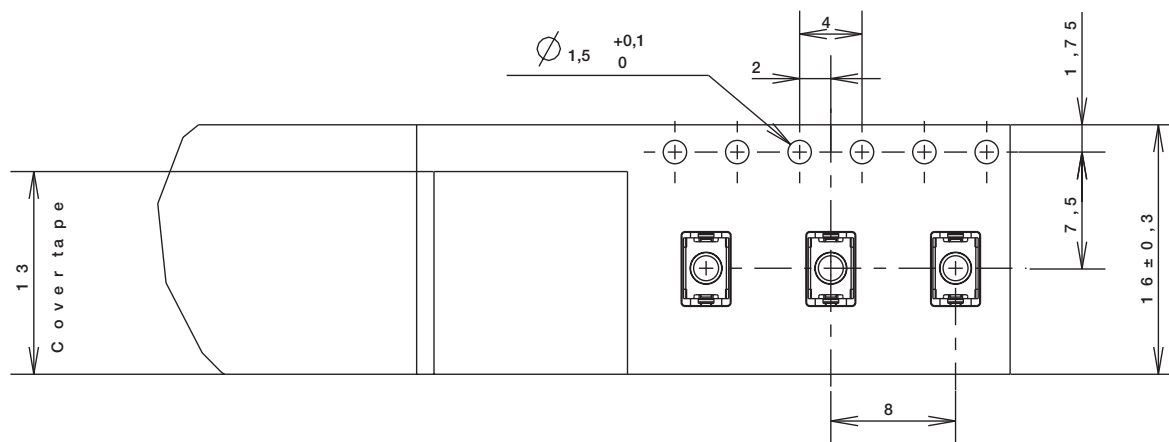
2.5 & 2.0 mm height (H) - version shown here with pegs

Tactile Switches

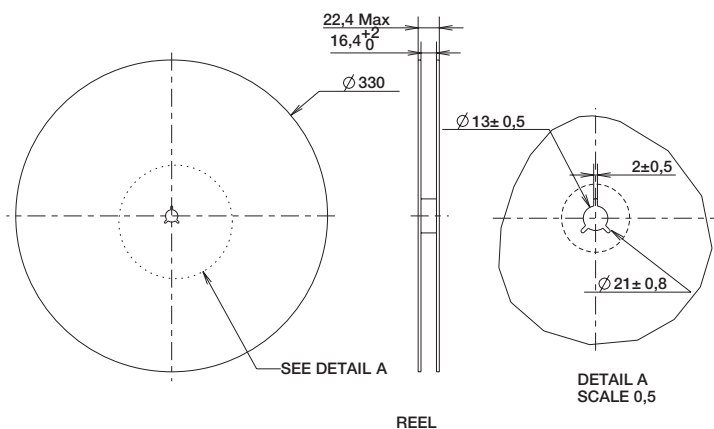
B



RECOMMENDED PCB LAYOUT

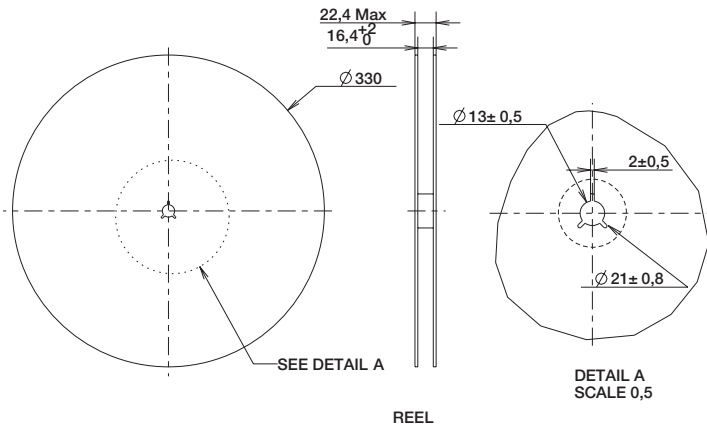
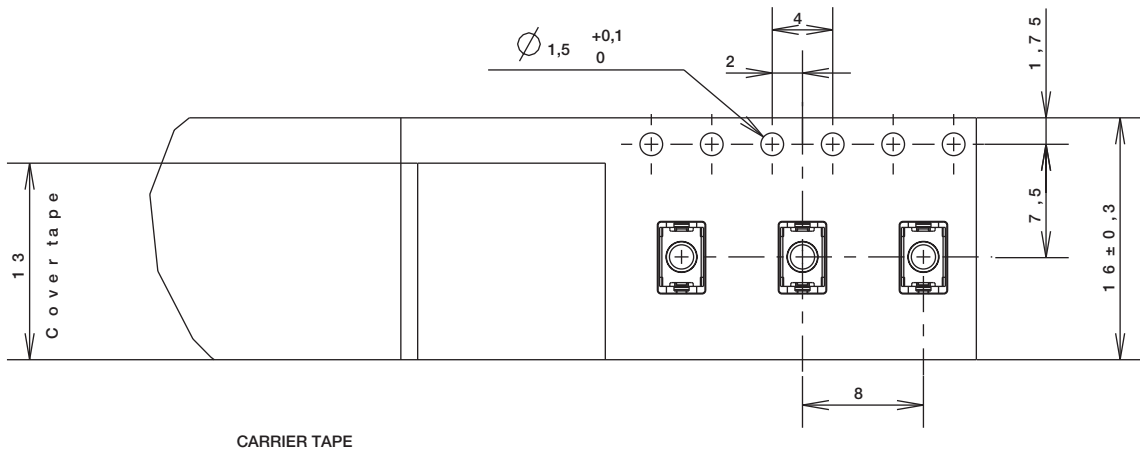
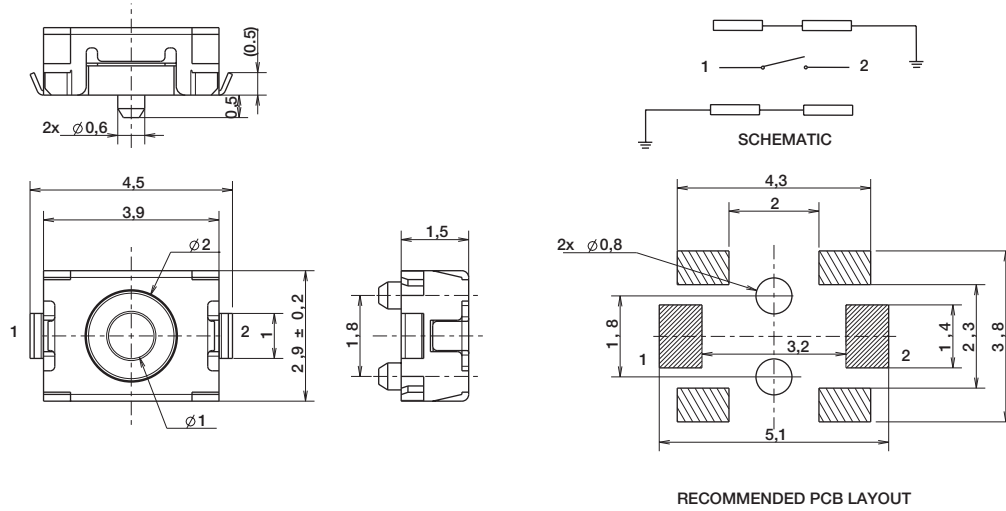


CARRIER TAPE



# PTS820 Series Microminiature SMT Top Actuated

1.5 mm height (H) - version shown here with pegs



B

Tactile Switches

# PTS830 Series Microminiature SMT Top Actuated



## Features/Benefits

- 3.5 x 2.6 mm footprint
- High number of cycles
- Optional ground pin

## Typical Applications

- Wearable electronics
- Nomad devices
- Remote controls
- Keyless entry system

## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: G type for SMT  
 TRAVEL: 0.15 mm ± 0.1 mm

|                        | Operating Force (gf) | Life Cycles | Ground Pin |
|------------------------|----------------------|-------------|------------|
| PTS830 GM140 SMTR LFS  | 160 ± 50             | 500,000     | No         |
| PTS830 GG140 SMTR LFS  | 450 ± 80             | 200,000     | No         |
| PTS830 GM140G SMTR LFS | 160 ± 50             | 500,000     | Yes        |
| PTS830 GG140G SMTR LFS | 450 ± 80             | 200,000     | Yes        |

## Packaging

Switches in reels of 9,500 pieces  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 100 VA C (1mn)  
 CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

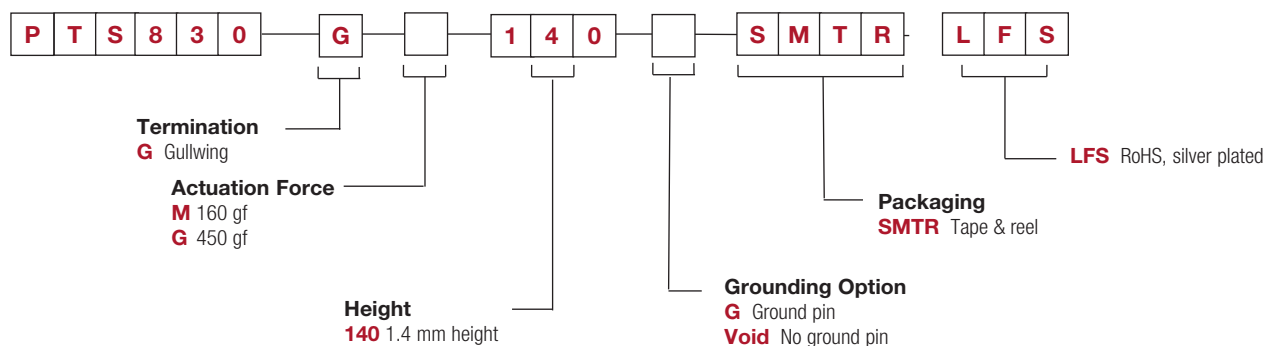
### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

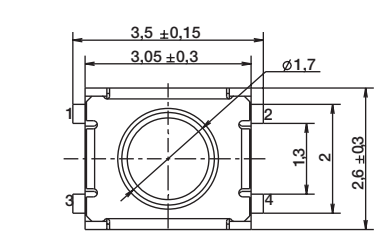
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.

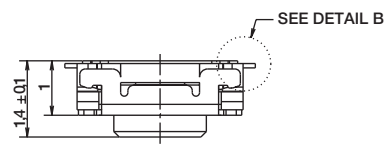
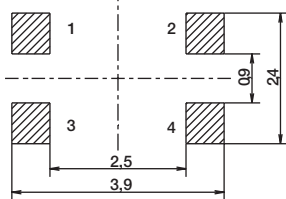


# PTS830 Series Microminiature SMT Top Actuated

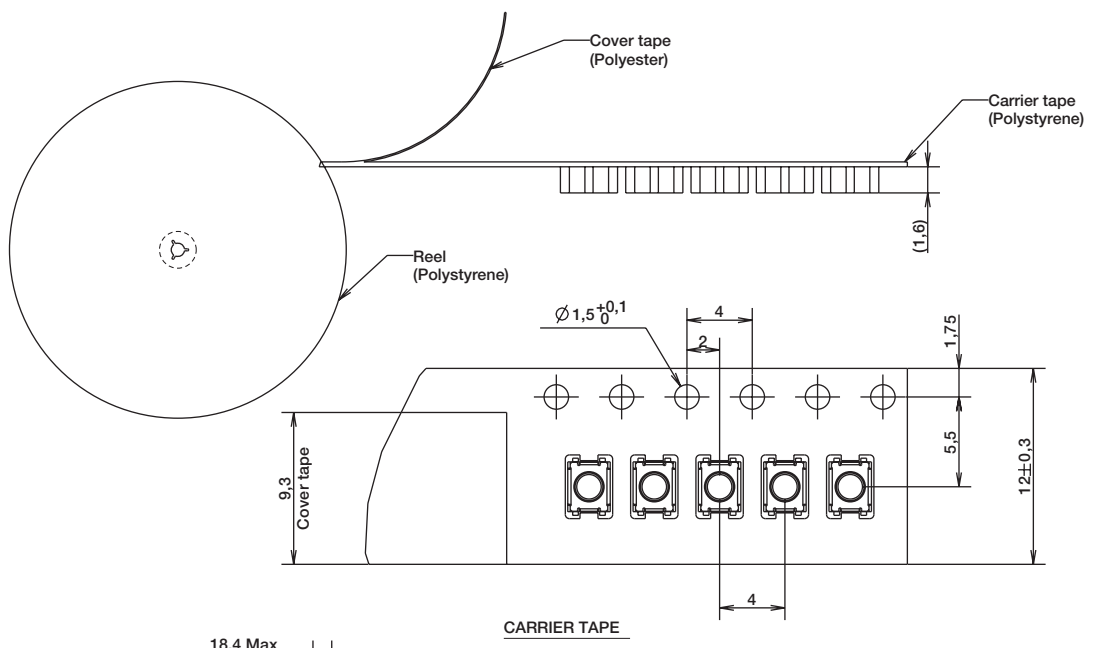
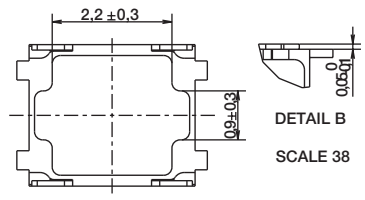
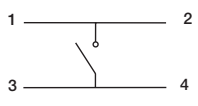
## PTS830 GX 140 SMTR LFS



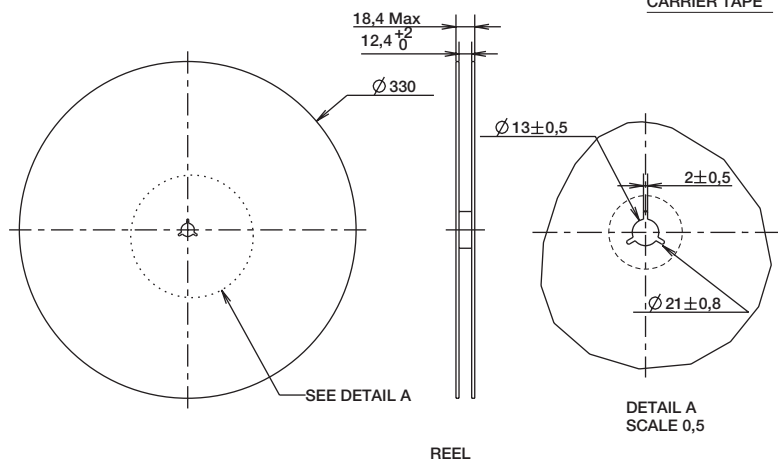
RECOMMENDED PCB LAYOUT



SCHEMATIC



CARRIER TAPE



DETAIL A  
SCALE 0.5

REEL



**B**  
Tactile Switches

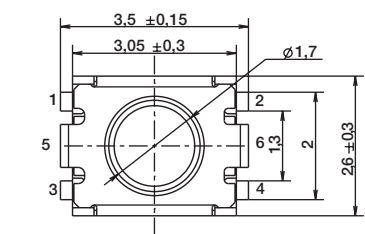


14 Nov 22

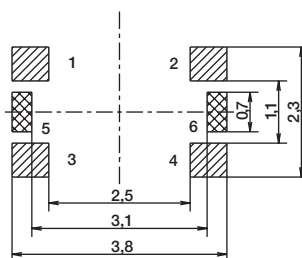
# PTS830 Series Microminiature SMT Top Actuated

PTS830 GX 140 G SMTR LFS

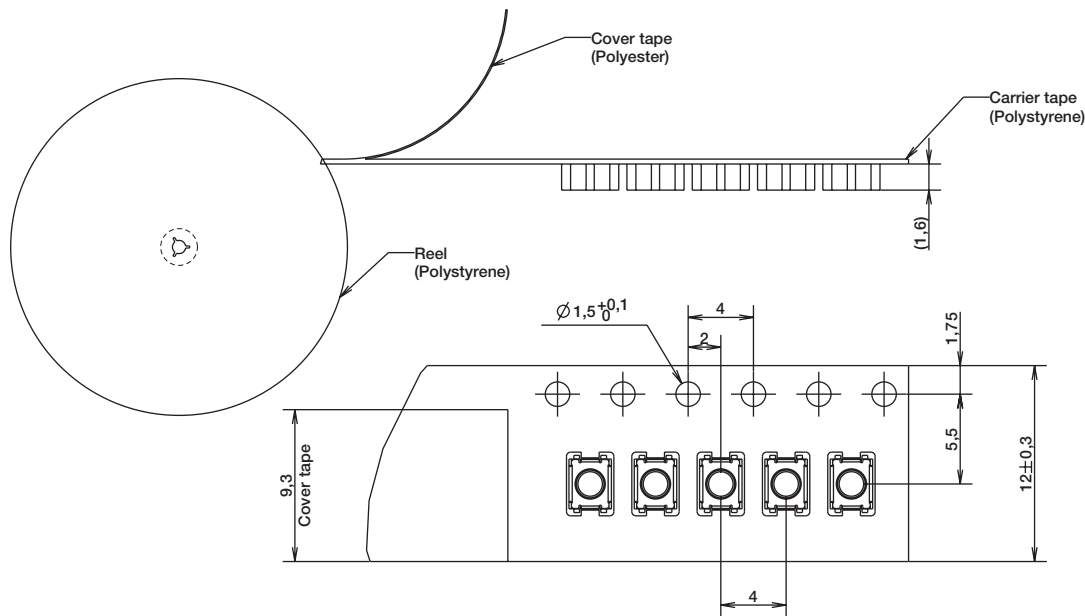
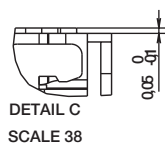
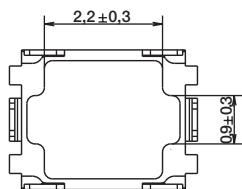
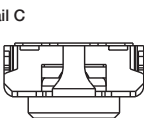
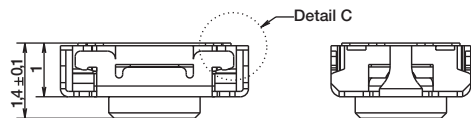
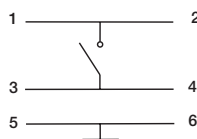
Tactile Switches



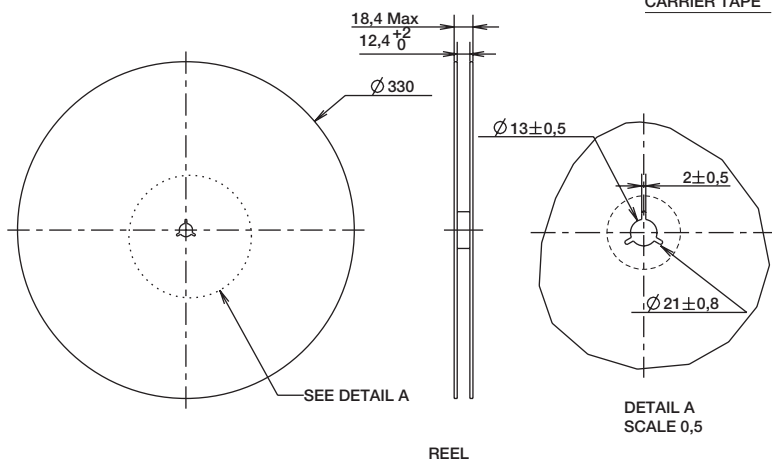
RECOMMENDED PCB LAYOUT



SCHEMATIC



CARRIER TAPE

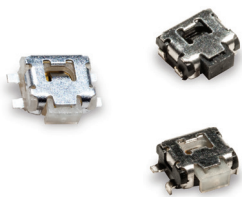


REEL

DETAIL A  
SCALE 0,5



# PTS840 Series Microminiature SMT Side Actuated



## Features/Benefits

- 3.5 x 3.55 mm footprint
- Front PIP leads option for strong shear resistance
- ESD pin option
- Reduced footprint

## Typical Applications

- Nomad devices
- Remote controls
- Personal health diagnostics
- Consumer electronics

## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: G and front PIP types for SMT  
 TRAVEL: 0.2mm + 0.2mm / -0.1 mm  
 LIFE: 100,000 cycles

| Type                      | Operating Force (gf) | SMT Leads | Pegs |
|---------------------------|----------------------|-----------|------|
| <b>Without ground pin</b> |                      |           |      |
| PTS840 GM SMTR LFS        | 160 -40/+70          | G leads   | No   |
| PTS840 GK SMTR LFS        | 220 -70/+80          | G leads   | No   |
| PTS840 PM SMTR LFS        | 160 -40/+70          | P leads   | No   |
| PTS840 PK SMTR LFS        | 220 -70/+80          | P leads   | No   |
| PTS840 GMP SMTR LFS       | 160 -40/+70          | G leads   | Yes  |
| PTS840 GKP SMTR LFS       | 220 -70/+80          | G leads   | Yes  |
| <b>With ground pin</b>    |                      |           |      |
| PTS840 ESDGM SMTR LFS     | 160 -40/+70          | G leads   | No   |
| PTS840 ESDGK SMTR LFS     | 220 -70/+80          | G leads   | No   |
| PTS840 ESDPM SMTR LFS     | 160 -40/+70          | P leads   | No   |
| PTS840 ESDPK SMTR LFS     | 220 -70/+80          | P leads   | No   |
| PTS840 ESDGMP SMTR LFS    | 160 -40/+70          | G leads   | Yes  |
| PTS840 ESDGKP SMTR LFS    | 220 -70/+80          | G leads   | Yes  |

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mm)  
 CONTACT RESISTANCE: ≤ 500 mΩ  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

In reels of 3,500 pieces  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

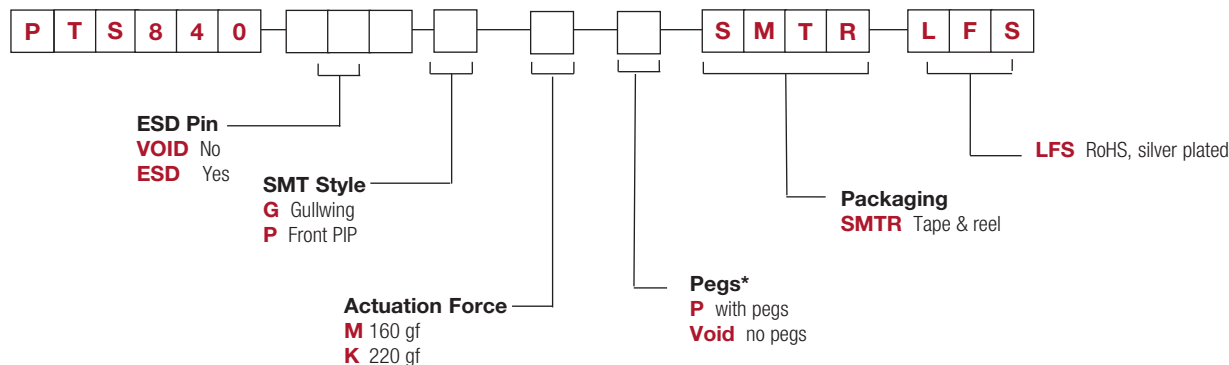
### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- **The PTS series is not certified for using in Automotive application and no PPAP.** However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



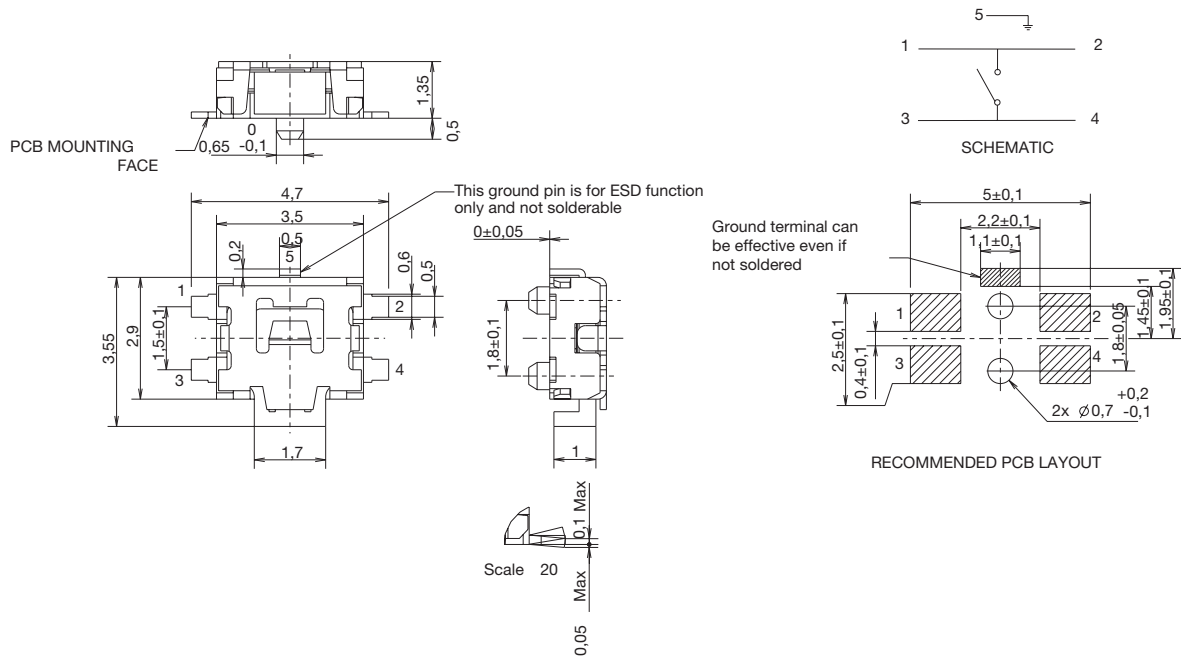
### Design Recommendations

- "P" leads are recommended for applications where shear resistance is of importance
- When a precise alignment between application button and the switch is requested, version with pegs are the right choice to limit the possible floating of the switch during solderability.

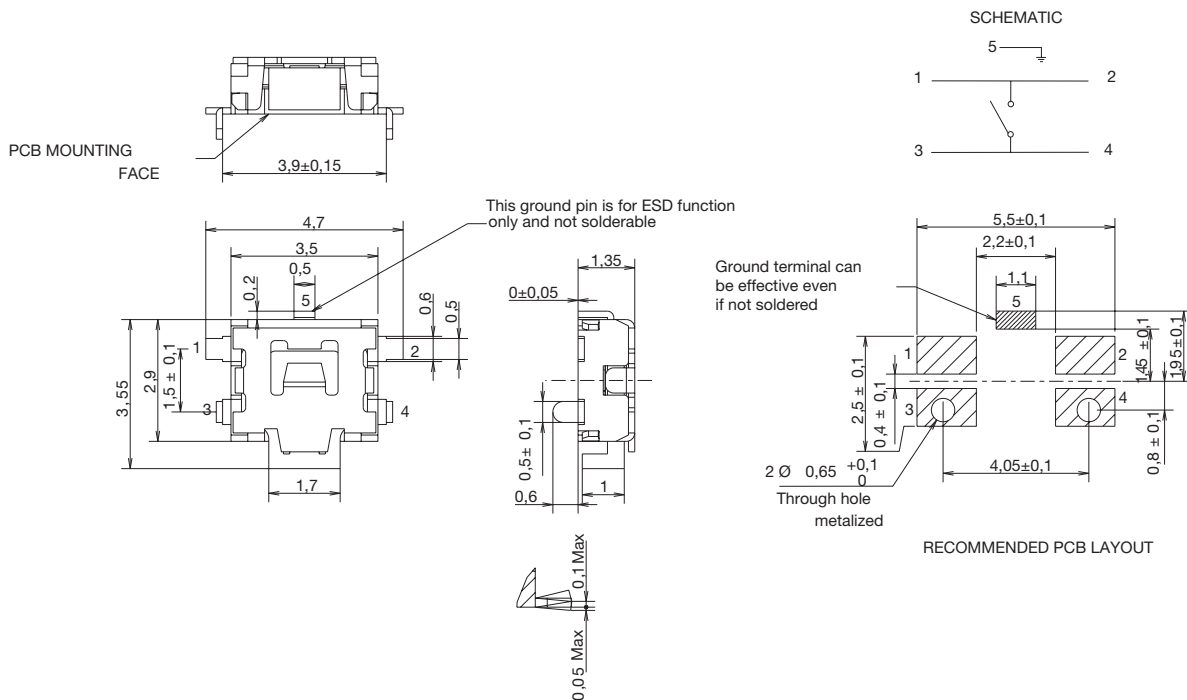


# PTS840 Series Microminiature SMT Side Actuated

## Standard G SMT Leads with ESD and Peg options



## P SMT Leads with ESD option

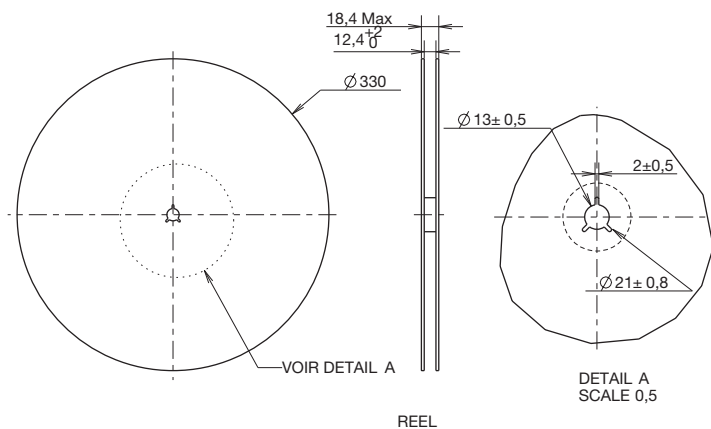
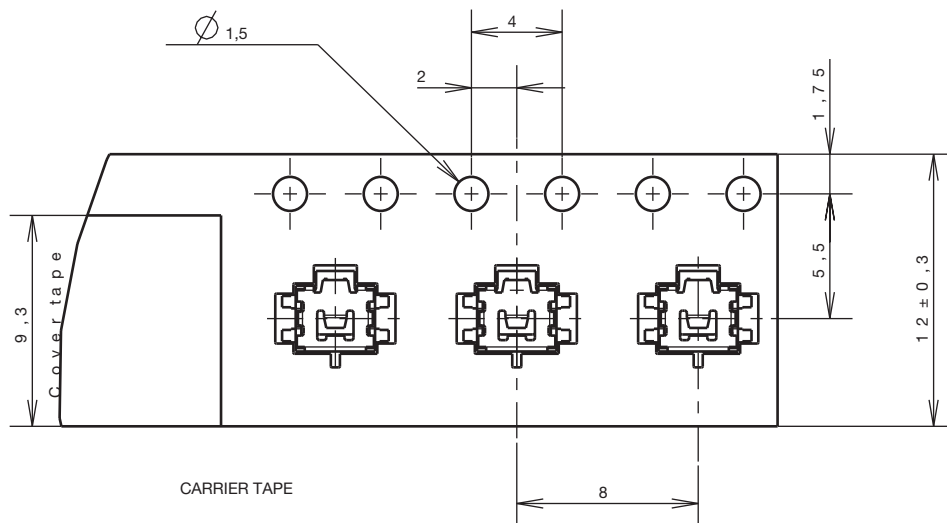


# PTS840 Series Microminiature SMT Side Actuated

## TAPE & REEL

Tactile Switches

B



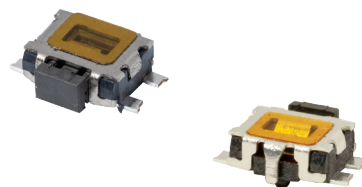
# PTS841 Series Microminiature SMT Side Actuated

## Features/Benefits

- 3.6 x 3.5 mm footprint
- 1.25 mm thickness
- ESD pin option
- Peg option
- Commercial grade

## Typical Applications

- IoT devices
- Wearables
- Portable devices
- Remote controls



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: G for SMT  
 TRAVEL: 0.2mm ± 0.1 mm  
 LIFE: 100,000 cycles

| Type                    | Operating Force (gf) | Pegs | ESD pin option |
|-------------------------|----------------------|------|----------------|
| PTS841 GM SMTR LFS      | 180 ± 50             | No   | No             |
| PTS841 GK SMTR LFS      | 250 ± 50             | No   | No             |
| PTS841 GMP SMTR LFS     | 180 ± 50             | Yes  | No             |
| PTS841 GKP SMTR LFS     | 250 ± 50             | Yes  | No             |
| PTS841 ESD GM SMTR LFS  | 180 ± 50             | No   | Yes            |
| PTS841 ESD GK SMTR LFS  | 250 ± 50             | No   | Yes            |
| PTS841 ESD GMP SMTR LFS | 180 ± 50             | Yes  | Yes            |
| PTS841 ESD GKP SMTR LFS | 250 ± 50             | Yes  | Yes            |

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mn)  
 CONTACT RESISTANCE: ≤ 100 mΩ Initial  
 INSULATION RESISTANCE: ≥ 100 MΩ  
 BOUNCE TIME: ≤ 5 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

In reels of 3,000 pieces  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

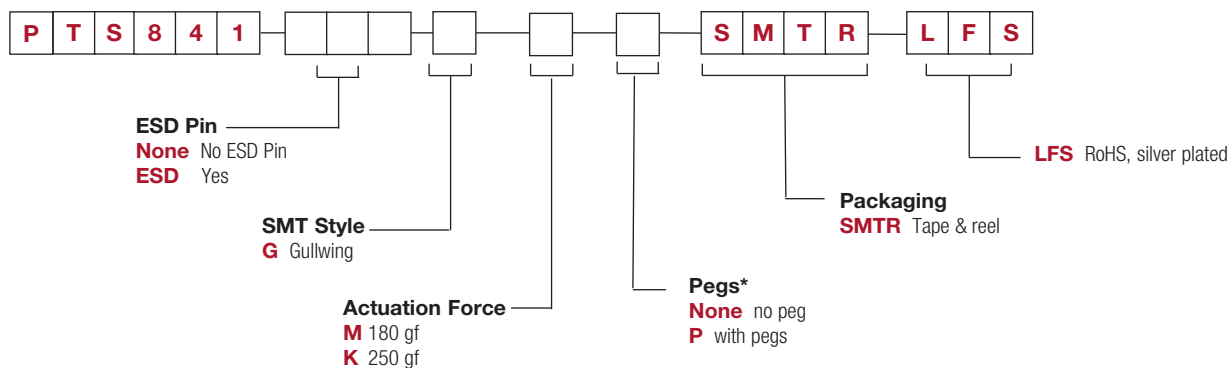
## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



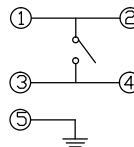
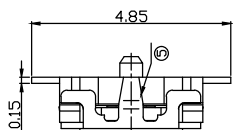
## Design Recommendations

\* When a precise alignment between application button and the switch is requested, version with pegs are the right choice to limit the possible floating of the switch during solderability.

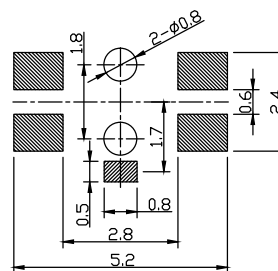
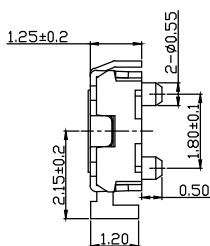
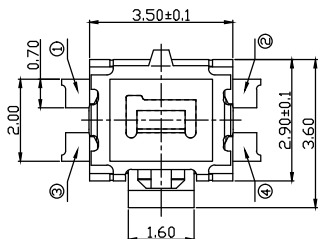
# PTS841 Series Microminiature SMT Side Actuated

G SMT Leads with ESD and Peg options

Tactile Switches

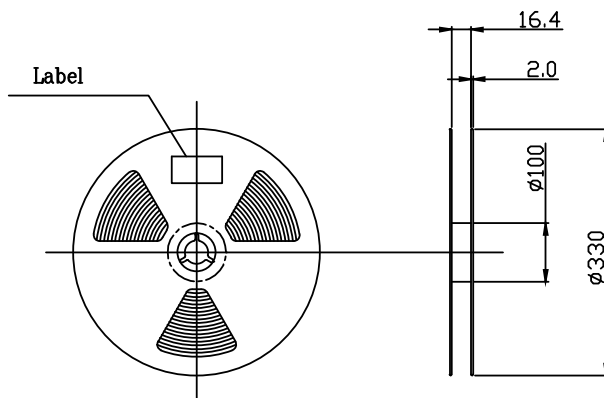
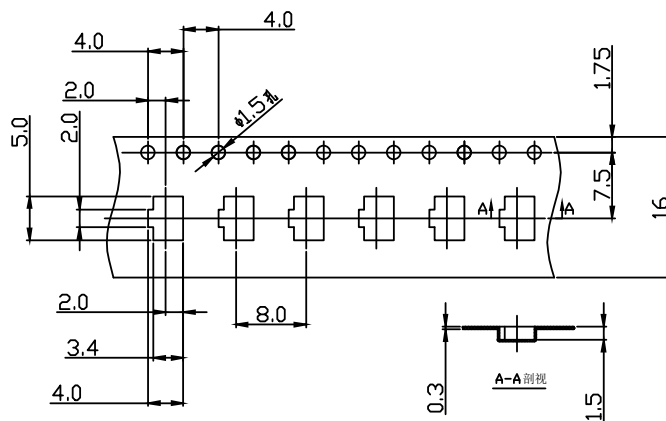


CIRCUIT DIAGRAM



P.C.B LAND DIMENSION

## TAPE & REEL



**NEW**

# PTS845 Series 4.5x3.4mm SMT Side Actuated Tact

## Features/Benefits

- 4.5 x 3.4 x 3.3 mm package
- SMT termination
- Side actuated with bracket peg design
- 80, 160 & 260 gf versions
- Lifecycles 100K

## Typical Applications

- Headphone/ Headset
- Health monitoring
- Sports watch
- Black box
- Bluetooth accessory



**B**

Tactile Switches

## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: SMT termination  
 TRAVEL: 0.2 mm ± 0.1 mm  
 LIFE: 100,000 cycles

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 CONTACT RESISTANCE: 100 mΩ  
 INSULATION RESISTANCE: 100 MΩ min.  
 DIELECTRIC VOLTAGE: 10 mA

## Environmental

OPERATING TEMPERATURE: -40°C to 90°C  
 STORAGE TEMPERATURE: -30°C to 80°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

2,000 pieces per reel

## NOTE:

- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Please see chart below for full part numbers.

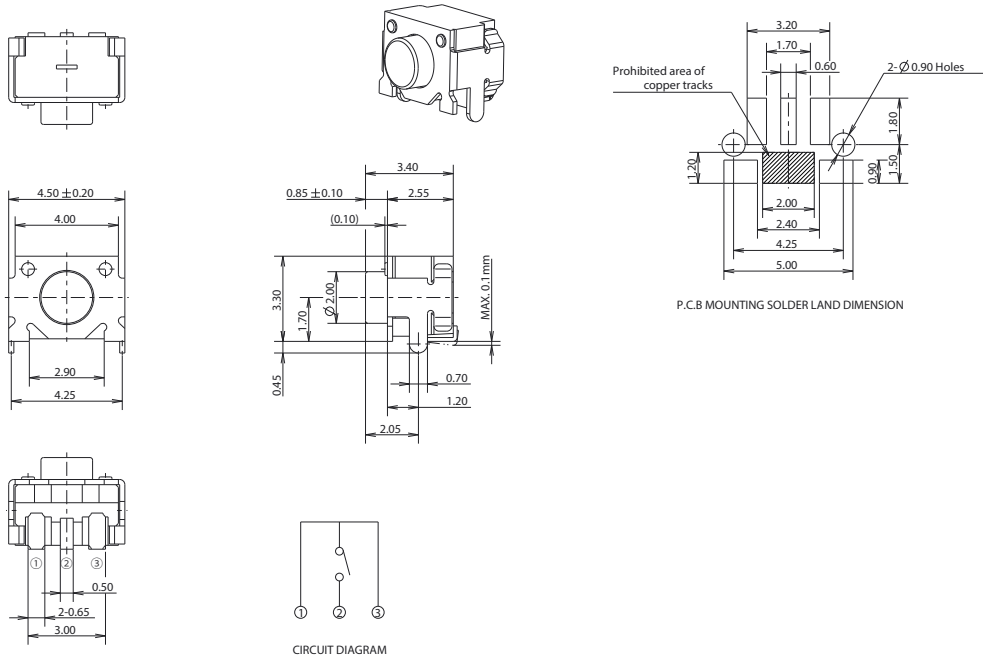
| Type                 | Operating Force (gf) | Stem Colour |
|----------------------|----------------------|-------------|
| PTS845VN20PSMTR4 LFS | 80 ± 40              | Grey        |
| PTS845VM20PSMTR4 LFS | 160 ± 50             | Ivory       |
| PTS845VK20PSMTR4 LFS | 260 ± 50             | Black       |

# PTS845 Series 4.5x3.4mm SMT Side Actuated Tact

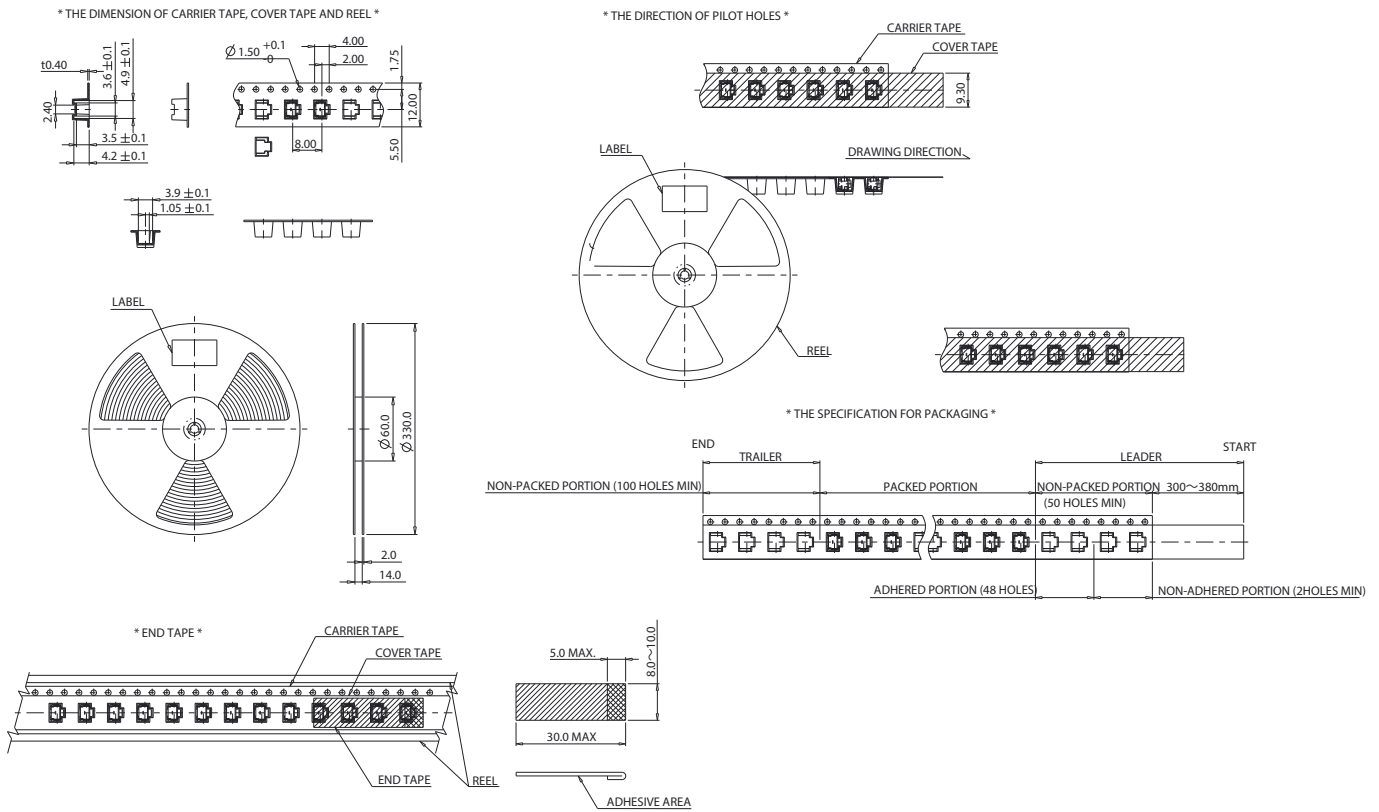
**NEW**

Tactile Switches

**B**



## TAPE & REEL



**NEW**

# PTS850 Series 5.4x5mm SMT Side Actuated Tact

## Features/Benefits

- 5.4 x 5.0 x 1.8 mm package
- SMT termination
- Side actuated with or without boss design
- 180 & 350 gf versions
- Lifecycles 50K

## Typical Applications

- Headphone/ Headset
- Health monitoring
- Sports watch
- Black box
- Bluetooth accessory
- Navigation



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: SMT termination  
 TRAVEL: 0.2 mm ± 0.1 mm  
 LIFE: 50,000 cycles

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 CONTACT RESISTANCE: 500 mΩ  
 INSULATION RESISTANCE: 100 MΩ min.

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
 STORAGE TEMPERATURE: -30°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

2,000 pieces per reel

## NOTE:

- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Please see chart below for full part numbers.

| Type                | Actuation Force (gf) | Stem Colour | Remark       |
|---------------------|----------------------|-------------|--------------|
| PTS850VM18PSMTR LFS | 180 + 80/- 40        | Black       | With Boss    |
| PTS850VR18PSMTR LFS | 350 ± 80             | Natural     | With Boss    |
| PTS850VM18SMTR LFS  | 180 + 80/- 40        | Black       | Without Boss |
| PTS850VR18SMTR LFS  | 350 ± 80             | Natural     | Without Boss |

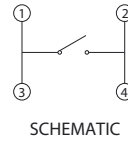
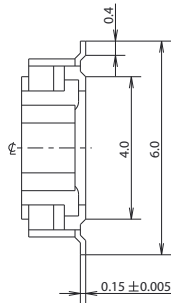
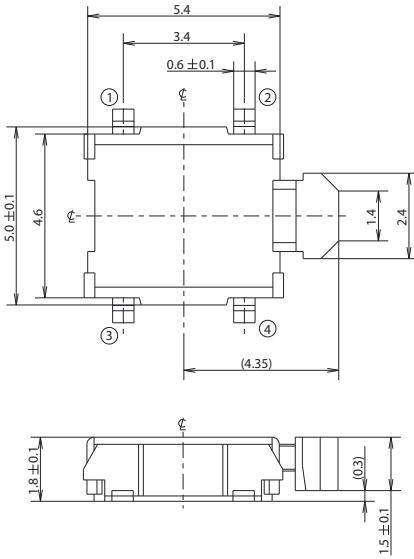
# PTS850 Series 5.4x5mm SMT Side Actuated Tact

**NEW**

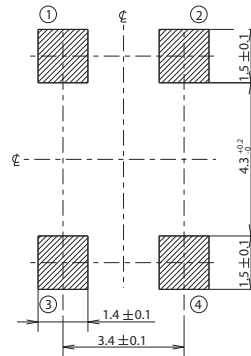
## WITHOUT BOSS

Tactile Switches

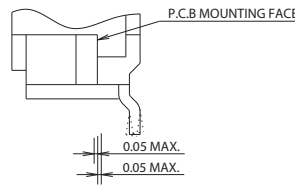
B



P.C.B. LAYOUT

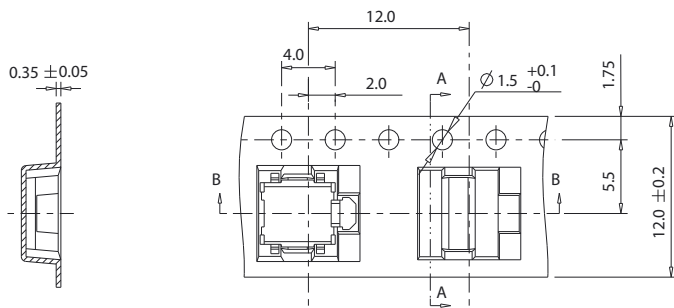


HATCHED AREA SHOWS SOLDERING LAND

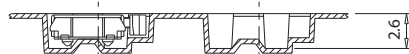


## TAPE & REEL

CARRIER TAPE



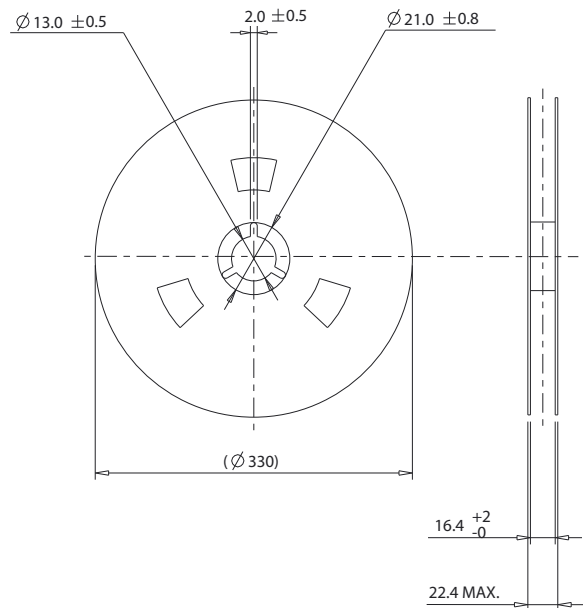
SECTION A-A



SECTION B-B

DRAWING DIRECTION →

REEL

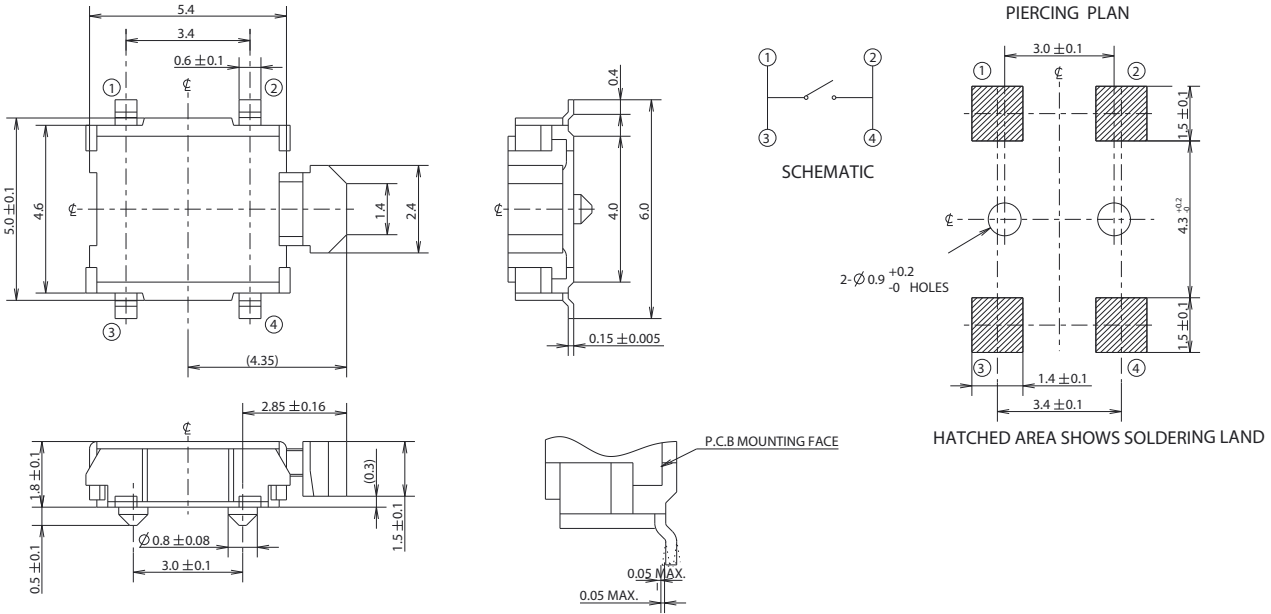




**NEW**

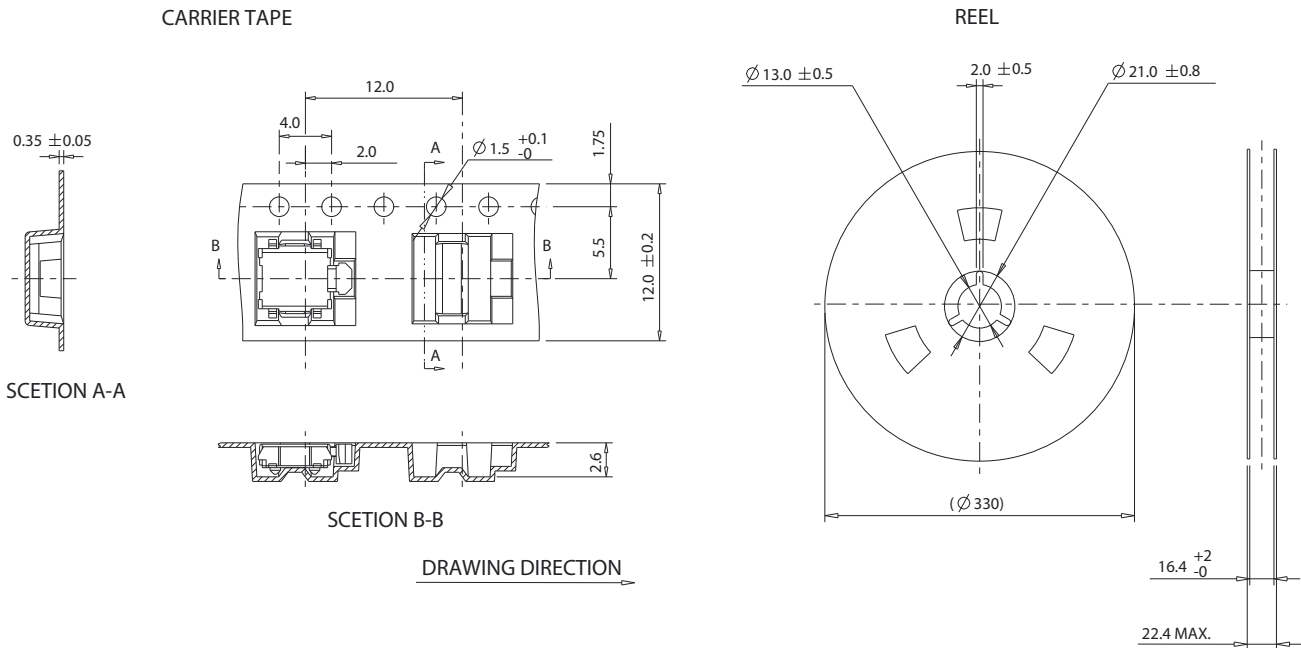
# PTS850 Series 5.4x5mm SMT Side Actuated Tact

## WITH BOSS



**B** Tactile Switches

## TAPE & REEL



# PTS847 Series 4.6x2.2mm SMT Side Actuated Tact

**NEW**

## Features/Benefits

- 4.6 x 2.2 x 2.6 mm package
- Height 0.95 mm above PCB (edge mount)
- Side actuation
- SMT termination with or without L-shape shield
- Hard & soft actuator options
- 160 & 350 gf versions
- Lifecycles 200K

## Typical Applications

- Mobile headphone/ Headset
- Health monitoring
- Sports watch
- Black box
- Bluetooth accessory



## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: SMT termination  
 TRAVEL: 0.15 mm  
 LIFE: 200,000 cycles

## Electrical

MAXIMUM VOLTAGE: 15 VDC  
 MAXIMUM CURRENT DC: 20 mA  
 CONTACT RESISTANCE: 100 mΩ  
 INSULATION RESISTANCE: 100 MΩ min.  
 DIELECTRIC VOLTAGE: AC 250V

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
 STORAGE TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

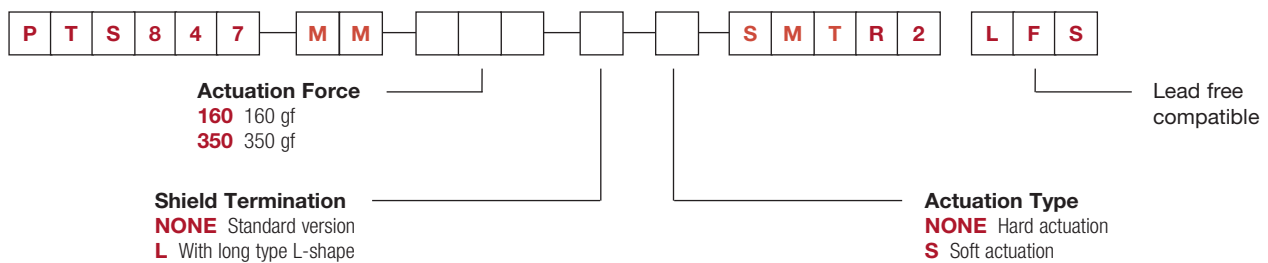
2,500 pieces per reel

## NOTE:

- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

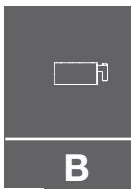
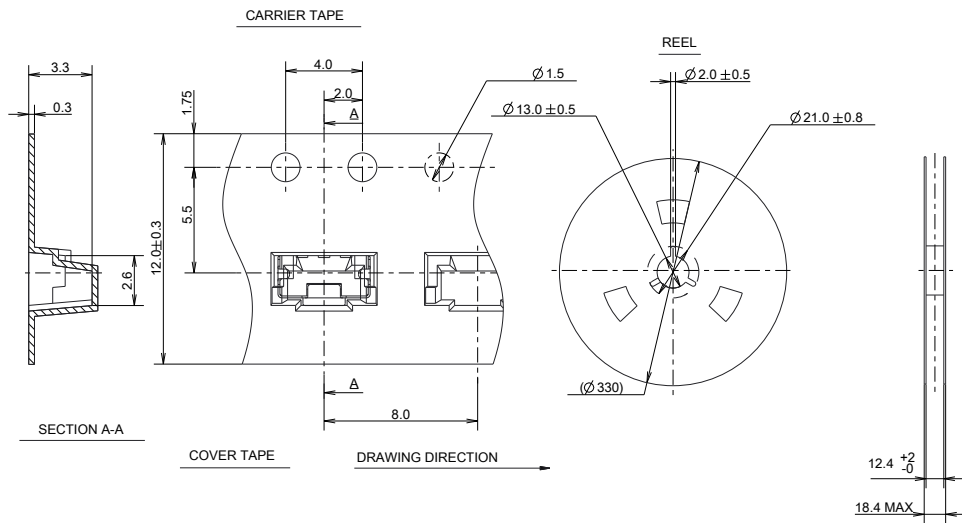
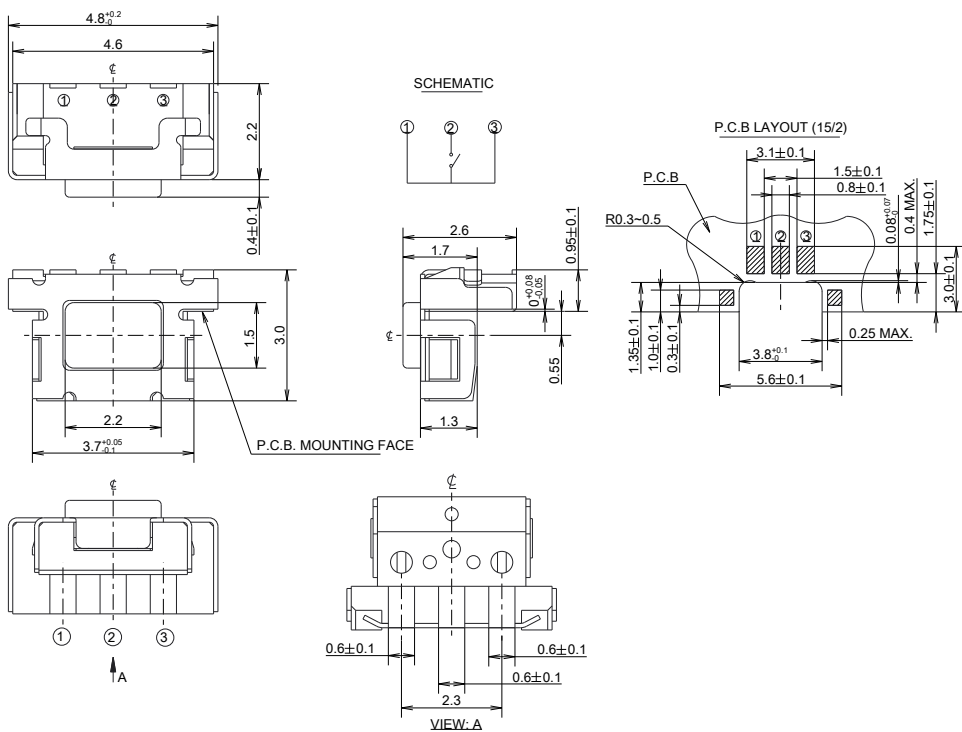
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



**NEW**

# PTS847 Series 4.6x2.2mm SMT Side Actuated Tact

## STANDARD EDGE MOUNTING (HARD ACTUATOR VERSION)



**B**

**Tactile Switches**



First Angle Projection



14 Nov 22

Dimensions are shown: mm  
Specifications and dimensions subject to change

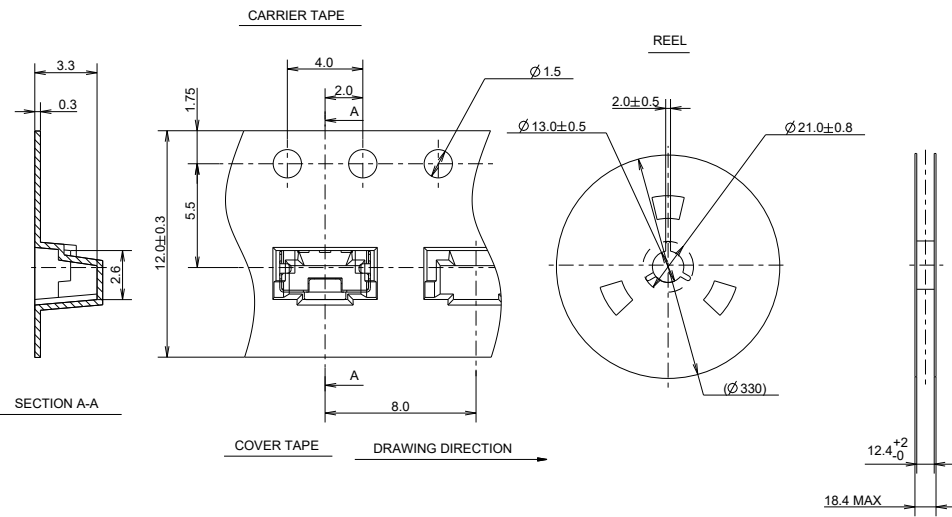
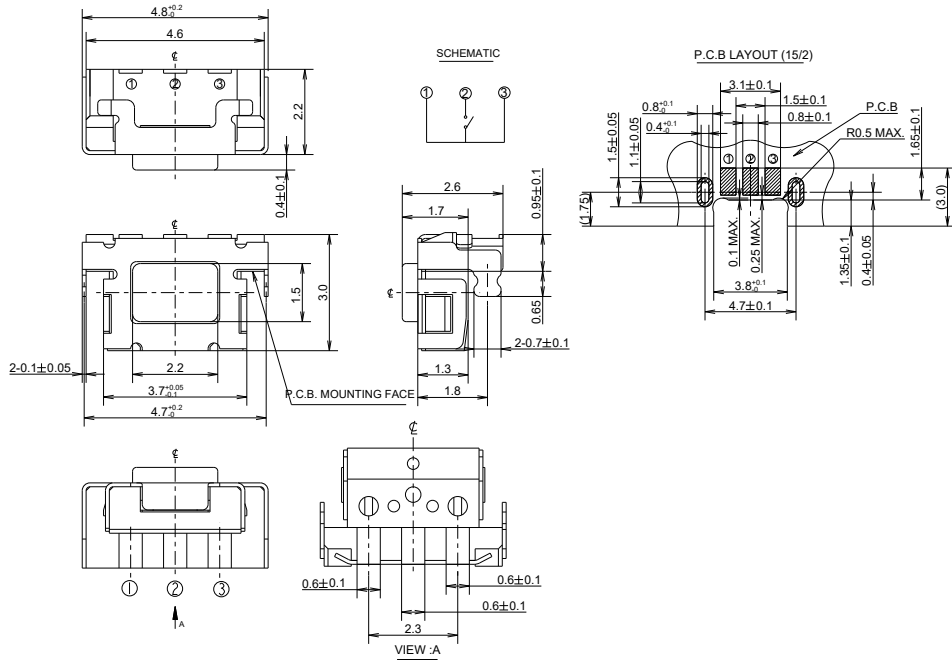
# PTS847 Series

## 4.6x2.2mm SMT Side Actuated Tact

**NEW**

Tactile Switches

EDGE MOUNTING WITH L-SHAPE SHIELD TERMINATION (HARD ACTUATOR VERSION)



Dimensions are shown: mm  
Specifications and dimensions subject to change

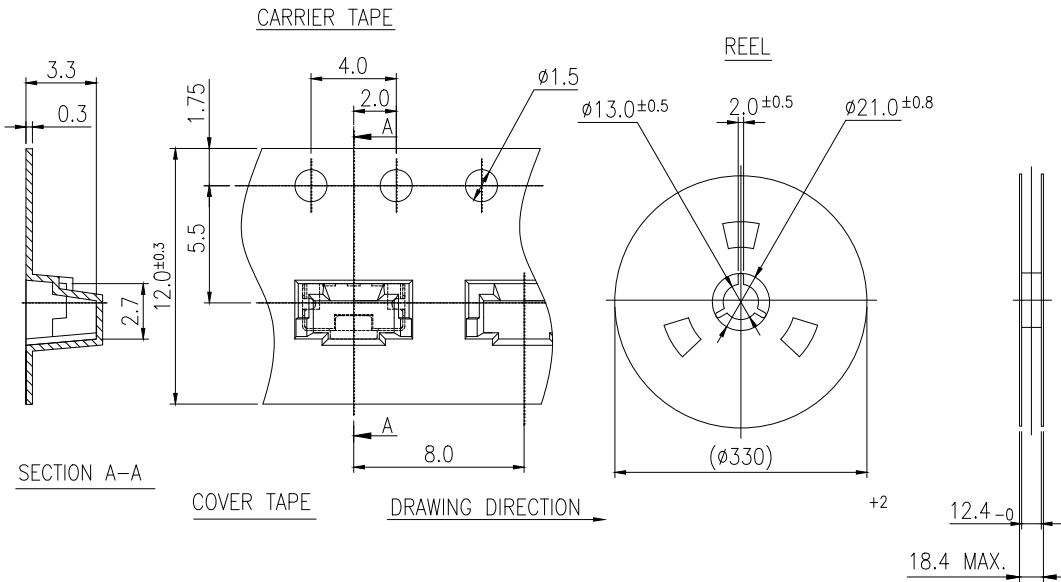
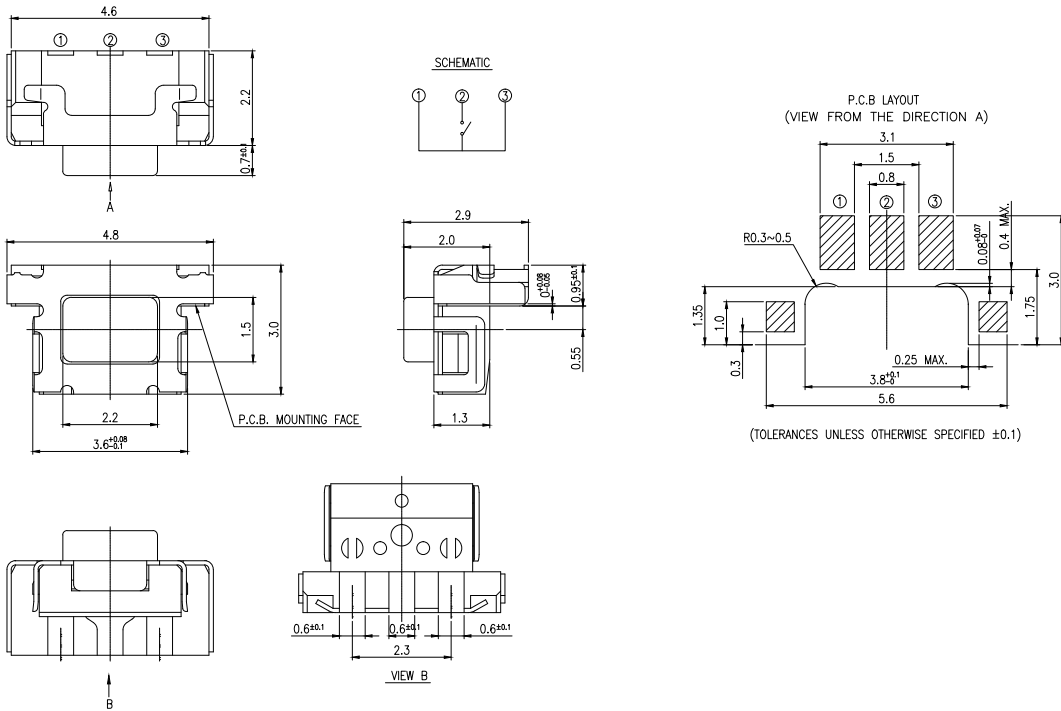


14 Nov 22

**NEW**

# PTS847 Series 4.6x2.2mm SMT Side Actuated Tact

STANDARD EDGE MOUNTING (SOFT ACTUATOR VERSION)



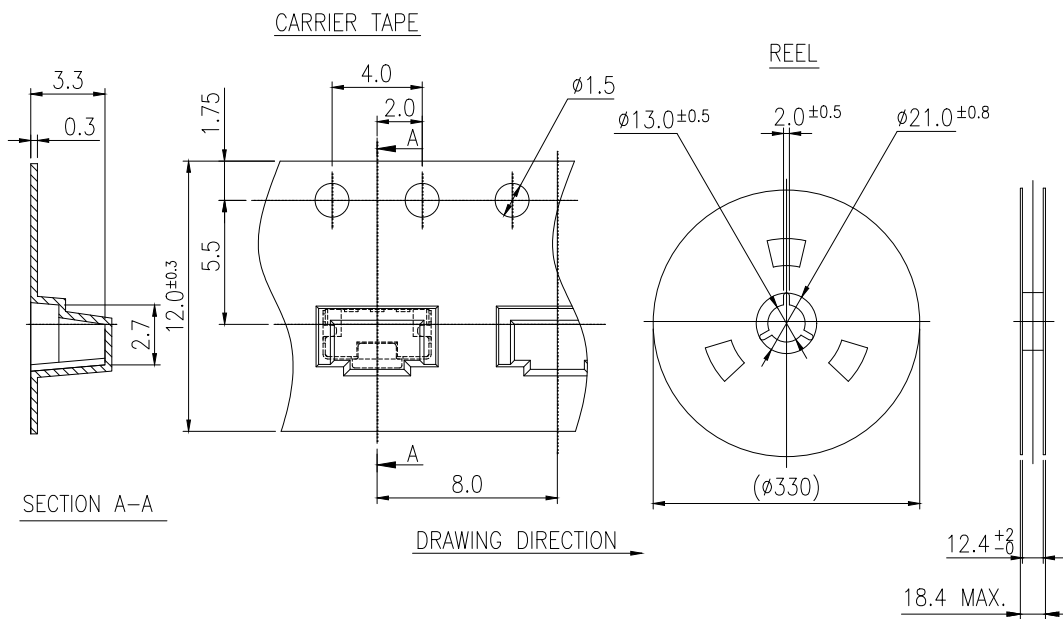
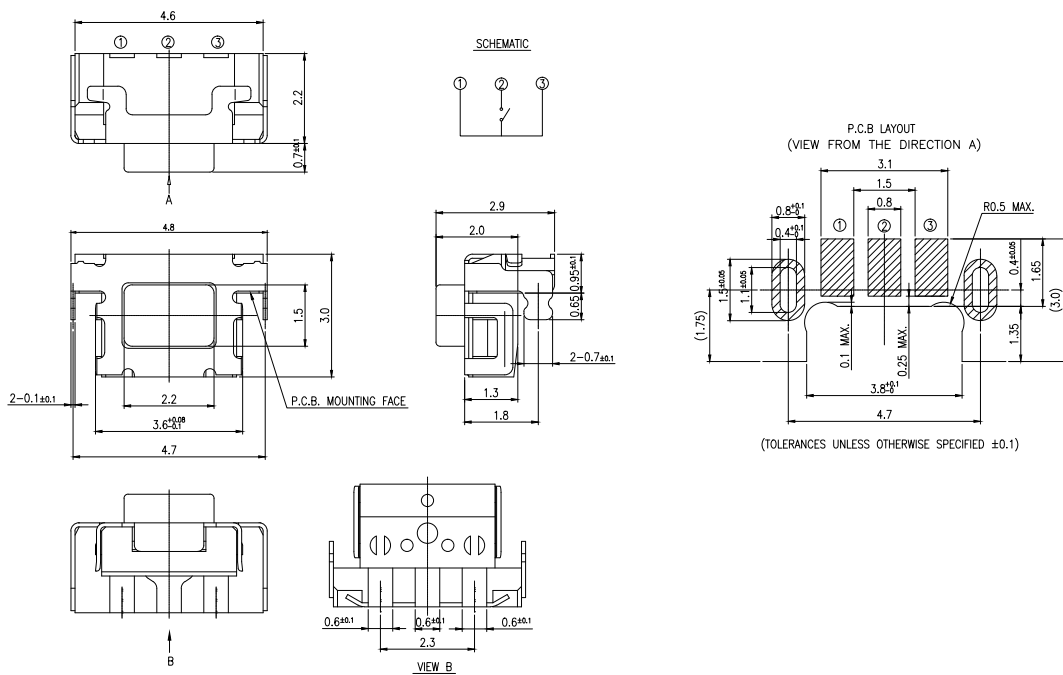
**B**  
Tactile Switches

**NEW**

# PTS847 Series 4.6x2.2mm SMT Side Actuated Tact

## EDGE MOUNTING WITH L-SHAPE SHIELD TERMINATION (SOFT ACTUATOR VERSION)

Tactile Switches  
**B**



# KSR Series Subminiature Tact Switch for SMT

## Features/Benefits

- 4 actuation forces
- G terminations
- N.O. and N.C.
- Detect type available
- Rubber actuator
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Medical equipment
- Industrial electronics
- Smart meters



## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT:  
     Normally Open (standard versions)  
     Normally Closed (NC versions)  
 TERMINALS: Gullwing type for SMT

## Mechanical

| Type                      | Operating force<br>Newtons (grams) | Operating life<br>(operations) | Travel<br>(mm) |
|---------------------------|------------------------------------|--------------------------------|----------------|
| KSR211G LFS / KSR213G LFG | 1,5 < 1,85 (185) < 2,2             | 100,000                        | 0,25 ± 0,15    |
| KSR221G LFS / KSR223G LFG | 1,9 < 2,25 (225) < 2,6             | 100,000                        | 0,3 ± 0,15     |
| KSR231G LFS /KSR233G LFG  | 2,25 < 3,00 (300) < 3,75           | 100,000                        | 0,35 ± 0,15    |
| KSR251G LFS / KSR253G LFG | 3,4 < 4,50 (450) < 5,6             | 100,000                        | 0,5 ± 0,15     |
| KSR221G NC LFS            | 1,5 < 2,25 (225) < 3               | 30,000                         | 0,3 ± 0,15     |
| KSR223G NC LFG            | 1,5 < 2 (200) < 2,5                | 30,000                         | 0,3 ± 0,15     |

Overload: 20 Newtons  
 Detect switch versions are available. Please see Detect chapter  
 KSR2D/M series.

## Packaging

Switches are delivered on continuous tape, in reels of 2,500 pieces.

## Electrical

|                     | Silver | Gold   |
|---------------------|--------|--------|
| MAXIMUM POWER:      | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE:    | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE:    | 20 mV  | 20 mV  |
| MAXIMUM CURRENT DC: | 50 mA  | 10 mA  |
| MINIMUM CURRENT DC: | 1 mA   | 1 mA   |

CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE: (100 V): 1G Ω (between terminals)  
 BOUNCE TIME: 1 ms max.

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

SOLDERING: Lead free reflow soldering process in accordance  
 with IEC 61760-1.

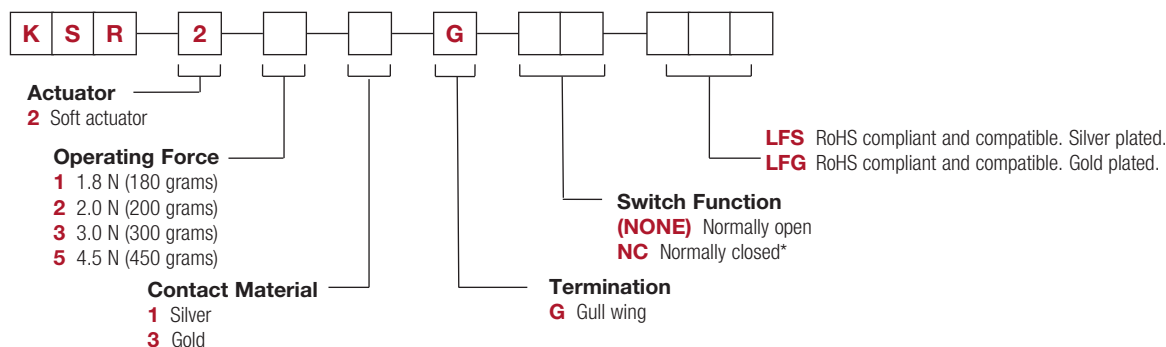
**NOTE:** Specifications listed above are for switches with standard options.  
 For information on specific and custom switches, consult Customer Service Center.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.**

**For any part number different from those listed above, please consult your local representative.**



\*Available on KSR22xG only.

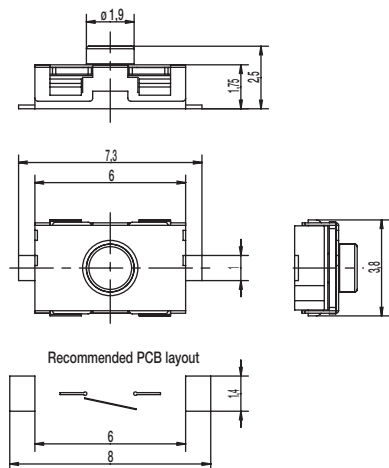
# KSR Series Subminiature Tact Switch for SMT



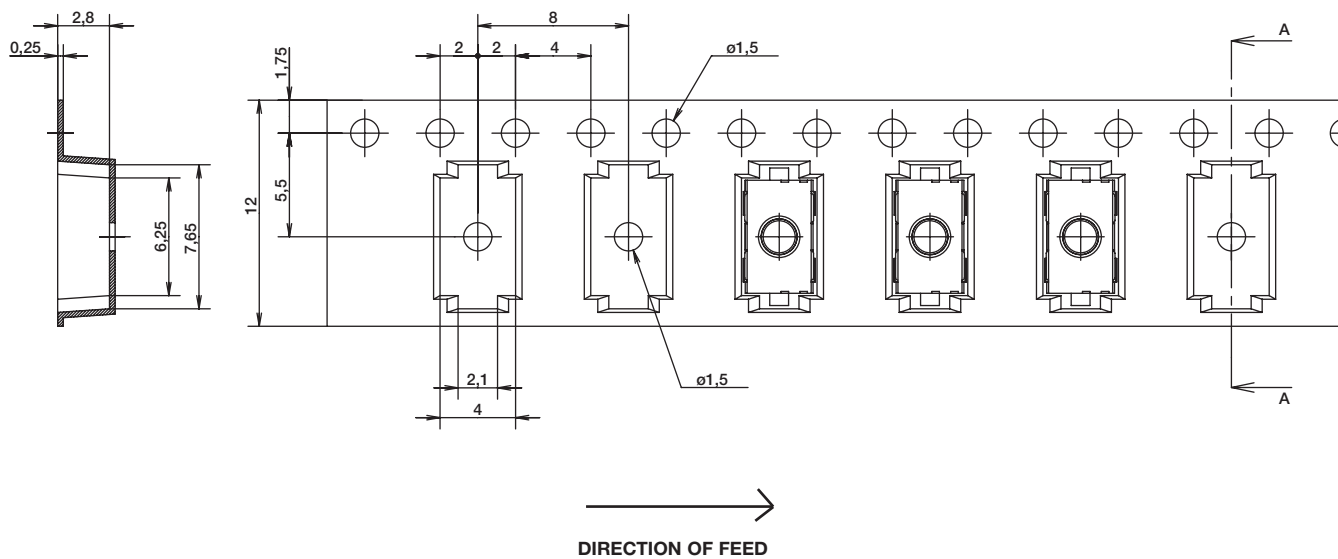
**B**

Tactile Switches

**KSR**



## TAPE & REEL



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change





# KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

## Features/Benefits

- 4 actuation forces
- G terminations
- N.O.
- Detect type available
- Rubber actuator
- IP50 sealed
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Medical equipment
- Industrial electronics



## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: Normally Open  
TERMINALS: Gullwing type for SMT

## Mechanical

| Type                   | Operating force(Fa)<br>Newtons (grams) | Operating life<br>(operations) | Travel<br>(mm) |
|------------------------|--|--------------------------------|----------------|
| <b>Silver versions</b> |  |                                |                |
| KSR212G LFS            | 1,5 < 1,85 (185) < 2,2                 | 200,000                        | 0,25 ± 0,15    |
| KSR222G LFS            | 1,9 < 2,25 (225) < 2,6                 | 200,000                        | 0,3 ± 0,15     |
| KSR232G LFS            | 2,25 < 3,00 (300) < 3,75               | 200,000                        | 0,35 ± 0,15    |
| KSR252G LFS            | 3,4 < 4,50 (450) < 5,6                 | 200,000                        | 0,5 ± 0,15     |
| <b>Gold versions</b>   |  |                                |                |
| KSR214G LFS            | 1,5 < 1,85 (185) < 2,2                 | 200,000                        | 0,25 ± 0,15    |
| KSR224G LFS            | 1,9 < 2,25 (225) < 2,6                 | 200,000                        | 0,3 ± 0,15     |
| KSR234G LFS            | 2,25 < 3,00 (300) < 3,75               | 200,000                        | 0,35 ± 0,15    |
| KSR254G LFS            | 3,4 < 4,50 (450) < 5,6                 | 200,000                        | 0,5 ± 0,15     |

OVERLOAD: 20 Newtons

## Packaging

Switches are delivered on continuous tape, in reels of 2,500 pieces.

## Electrical

|                     | Silver   | Gold     |
|---------------------|----------|----------|
| MAXIMUM POWER:      | 1 VA     | 0.2 VA   |
| MAXIMUM VOLTAGE:    | 32 V dc  | 32 V dc  |
| MINIMUM VOLTAGE:    | 20 m Vdc | 20 m Vdc |
| MAXIMUM CURRENT DC: | 50 mA    | 10 mA    |
| MINIMUM CURRENT DC: | 1 mA     | 1 mA     |

CONTACT RESISTANCE: ≤ 100 m Ω  
INSULATION RESISTANCE (100 V): 1 G Ω (between terminals)  
BOUNCE TIME: 1 ms max

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

SOLDERING: Compatible with lead free reflow soldering process.

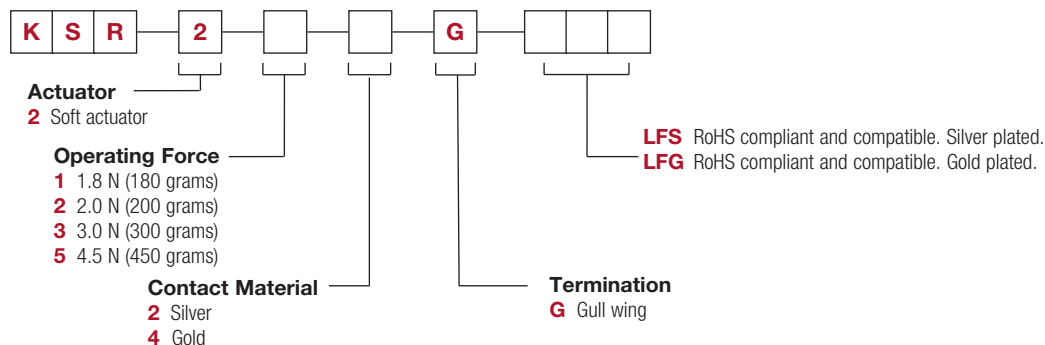
**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

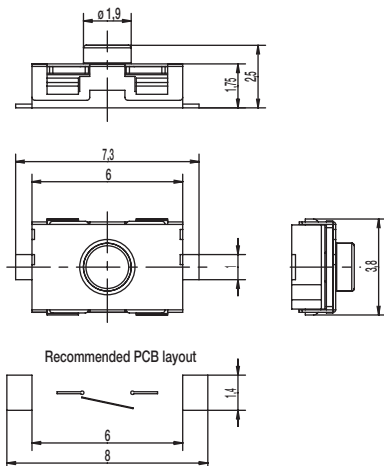
However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.



# KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

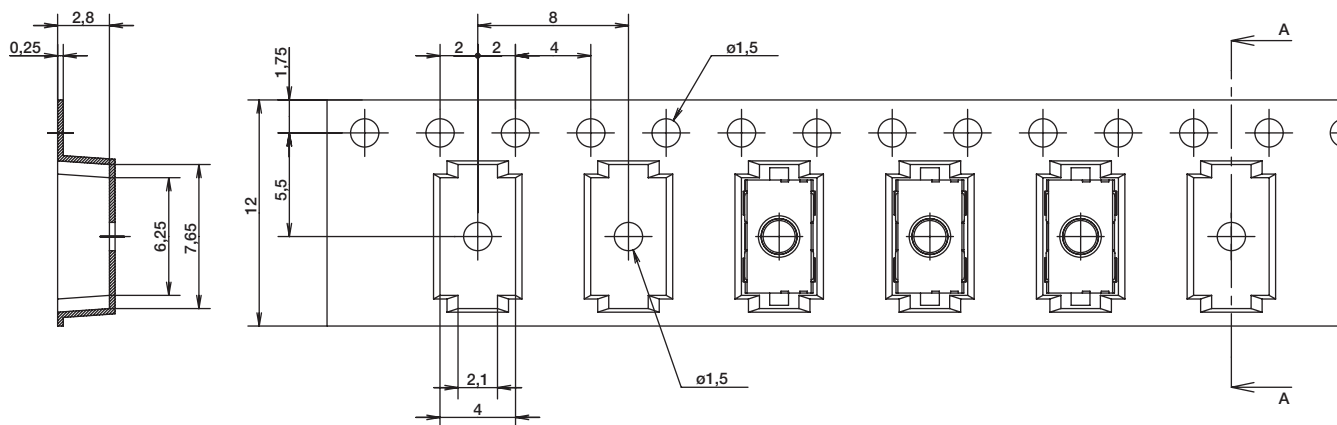
**KSR**



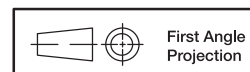
**B**

**Tactile Switches**

## TAPE & REEL



→  
DIRECTION OF FEED



Dimensions are shown: mm  
Specifications and dimensions subject to change

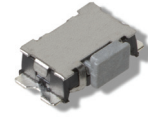
# KSS Series Subminiature SMT Side Actuated

## Features/Benefits

- Low profile of 1.7 mm
- Excellent tactile feel
- High shear force
- Range of actuation forces
- Large flat top
- RoHS compliant and compatible

## Typical Applications

- Cellular phone
- Industrial electronics
- Health diagnostic electronics



## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: N.O.  
TERMINALS: Gullwing  
IP40 sealed

## Mechanical

OVERLOAD: 20N  
TACTILE FEELING: 2 and 4N: 25% min.  
2.5N: 30% min.

| Type    | Operating force<br>Newtons (grams) | Operating life<br>(operations) | Travel<br>(mm) |
|---------|------------------------------------|--------------------------------|----------------|
| KSS221G | 2.0 (200) ± 0.5                    | 100,000                        | 0,3 ± 0,15     |
| KSS231G | 2.5 (250) ± 0.5                    | 100,000                        | 0,3 ± 0,10     |
| KSS241G | 4.0 (400) ± 1.0                    | 100,000                        | 0,3 ± 0,15     |

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## Electrical

|                                  | Silver              | Gold   |
|----------------------------------|---------------------|--------|
| MAXIMUM POWER:                   | 1 VA                | 0.2 VA |
| MAXIMUM VOLTAGE:                 | 32 VDC              | 32 VDC |
| MAXIMUM CURRENT:                 | 50 mA               | 10 mA  |
| MINIMUM CURRENT:                 | 1 mA                | 1 mA   |
| DIELECTRIC STRENGTH:             | ≥ 250 VDC           |        |
| CONTACT RESISTANCE:              | < 100 mΩ            |        |
| INSULATION RESISTANCE (100 VDC): | ≥ 10 <sup>9</sup> Ω |        |
| BOUNCE TIME:                     | < 3 ms              |        |

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

Soldering: Lead free reflow soldering process in accordance with IEC 61760-1.

## Packaging

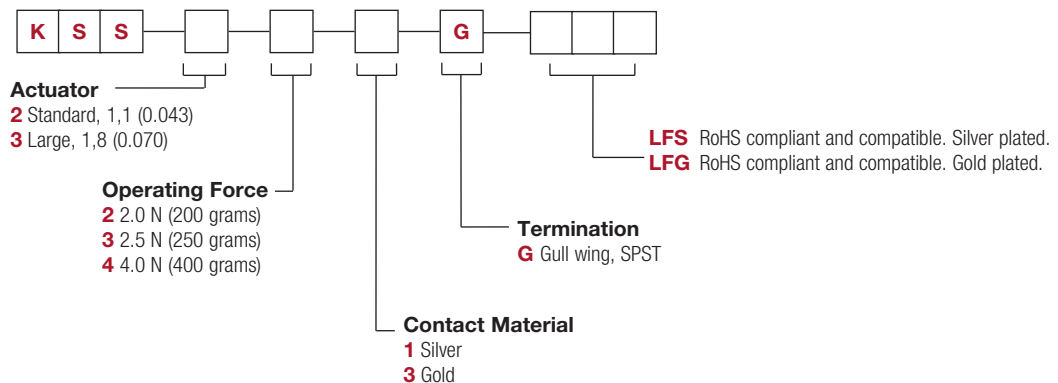
Tape and reels in reels of 3,000 pieces.  
External diameter 330mm ± 2mm.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

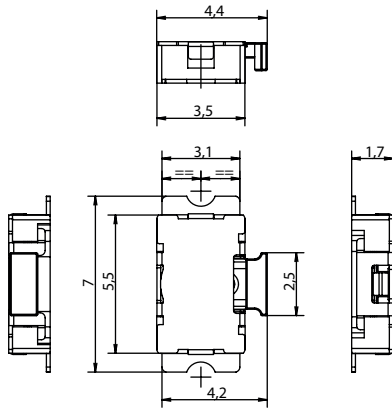
**However, please note that all the combinations of these options are not feasible.**

**For any part number different from those listed above, please consult your local representative.**

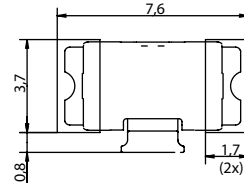


# KSS Series Subminiature SMT Side Actuated

KSS



PCB PROPOSED LAYOUT

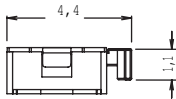


B

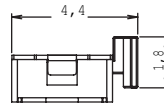
Tactile Switches

## ACTUATOR

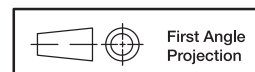
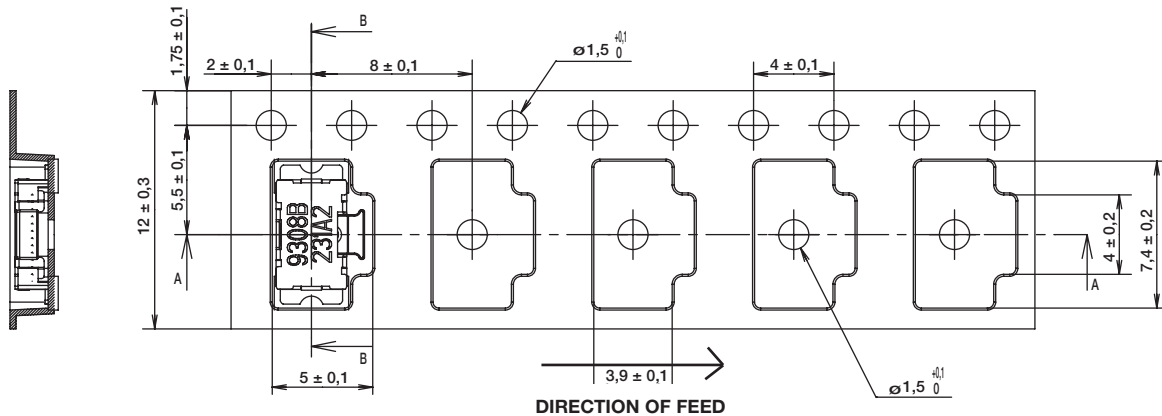
2 STANDARD, 1,1 (0.043)



3 LARGE, 1,8 (0.070)



## TAPE & REEL



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

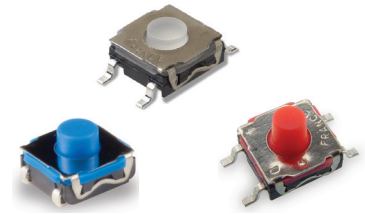
# KSC Series Sealed Tact Switch for SMT

## Features/Benefits

- Positive tactile feeling
- J or G terminations
- Various heights
- IP67

## Typical Applications

- Automotive
- Medical instruments
- Industrial electronics
- Network infrastructure and IT
- Elevator



Tactile Switches

B

## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
 TERMINALS: J bend & Gullwing type for SMT  
 SEALING: IP67 except KSC5 (IP50)

## Liability Limitation

This datasheet does not provide enough information for applications that require a certain level of quality or safety such as automotive, medical systems, or safety equipment. Please contact customer service for the contractual specification package.

## Electrical

|                  | Silver | Gold   |
|------------------|--------|--------|
| MAXIMUM POWER:   | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE: | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE: | 20 mV  | 20 mV  |
| MAXIMUM CURRENT: | 50 mA  | 10 mA  |
| MINIMUM CURRENT: | 1 mA*  | 0.1 mA |

DIELECTRIC STRENGTH (50 Hz, 1 min.):  $\geq 250$  Vrms  
 CONTACT RESISTANCE:  $\leq 100$  m $\Omega$   
 INSULATION RESISTANCE (100 V):  $\geq 10$  M  $\Omega$   
 BOUNCE TIME:  $\leq 1$  ms

\* Ultra low current with 10  $\mu$ A - 1 VDC version are available upon request for KSC2 and KSC4

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Packaging

Tape and Reel (see series for quantity information)

**NOTE:** Specifications listed above are for switches with standard options.

## Process

SOLDERING: Depending on the application, this component is suited to the following methods:

- Terminals being silver or gold plated over a nickel barrier, the use of slightly activated flux is suitable.
- Soldering on double wave machine for vertical versions: soldering time  $\leq 5$  sec.
- Cleaning according to typical washing processes.
- Lead free reflow soldering process in accordance with IEC 61760-1.

## KSC Product Range

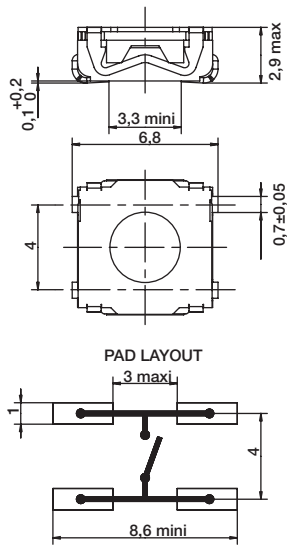
| KSC1             | KSC2          | KSC3          | KSC4          | KSC5          | KSC6          | KSC7          | KSC8          | KSC9                              | KSC10         | KSC11         |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------------------|---------------|---------------|
| Without actuator | Soft actuator | Hard actuator | Soft actuator | Hard actuator | Hard actuator | Soft actuator | Hard actuator | Hard actuator                     | Soft actuator | Hard actuator |
| H = 2.5 mm       | H = 3.5 mm    | H = 3.5 mm    | H = 5.2 mm    | H = 5.6 mm    | H = 7.7 mm    | H = 4.4 mm    | H = 4.9 mm    | H = 7.7 mm compatible with button | H = 4.9 mm    | H = 4 mm      |
| IP67             | IP67          | IP67          | IP67          | IP50          | IP67          | IP67          | IP67          | IP67                              | IP67          | IP67          |



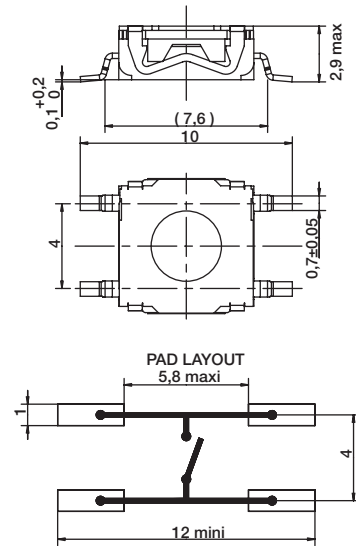
Note: KSC Series is subject to variants. Please contact customer service for other options.

# KSC Series Sealed Tact Switch for SMT

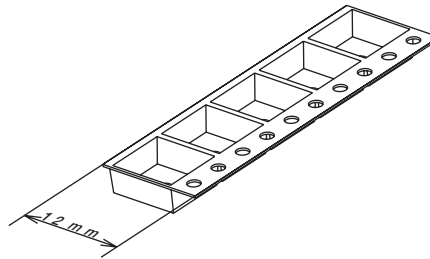
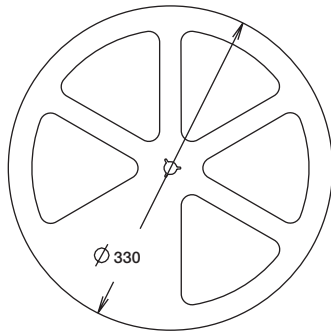
## J BEND



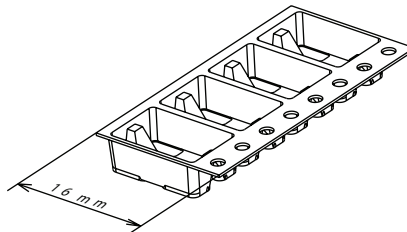
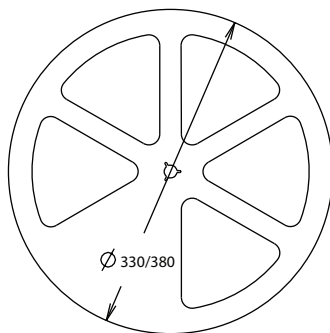
## G GULLWING



## 12 MM



## 16 MM



| 12 mm | Pieces | 16 mm      | Pieces | Reel Diameter |
|-------|--------|------------|--------|---------------|
| KSC1J | 2,000  | KSC1G      | 2,000  | 330 mm        |
| KSC2J | 2,000  | KSC2G      | 2,000  | 330 mm        |
| KSC3J | 2,000  | KSC3G      | 2,000  | 330 mm        |
|       |        | KSC4J & G  | 1,000  | 330 mm        |
|       |        | KSC5J & G  | 1,000  | 330 mm        |
|       |        | KSC6J & G  | 950    | 380 mm        |
|       |        | KSC7J & G  | 1,000  | 330 mm        |
|       |        | KSC8J & G  | 1,000  | 330 mm        |
|       |        | KSC9J & G  | 950    | 380 mm        |
|       |        | KSC10J & G | 1,000  | 330 mm        |
|       |        | KSC11J     | 1,000  | 380 mm        |



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC XA Series Soft Sound Tact Switch

## Features/Benefits

- New soft sound
- Extended cage
- IP67
- Long life
- J terminations
- Tape & reel

## Typical Applications

- Automotive interior & openings (gear shift paddle, steering wheel, window lifter, seat adjustment modules, trunk & door handle modules)
- Medical & industrial electronics (front panel, instrumentation)



| Type           | Force (N)   | Life (cycles) | Travel (mm) |
|----------------|-------------|---------------|-------------|
| KSC XA 35J LFS | 3.5 +/-1    | 1,000,000     | 0.7+/-0.2   |
| KSC XA 40J LFS | 4.0 +/-1    | 1,000,000     | 0.7+/-0.2   |
| KSC XA 55J LFS | 5.5 +/-1.1  | 1,000,000     | 0.7+/-0.2   |
| KSC XA 68J LFS | 6.8 +/- 1.4 | 500,000       | 0.7+/-0.2   |
| KSC XA 96J LFS | 9.6 +/- 2.4 | 150,000       | 0.7+/-0.2   |

POWER: 0.002 VA min. / 1VA Max.

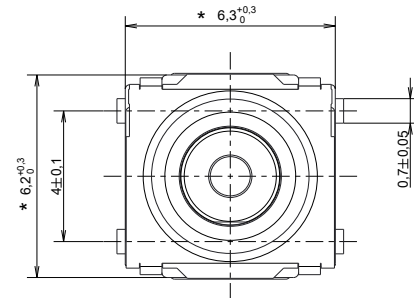
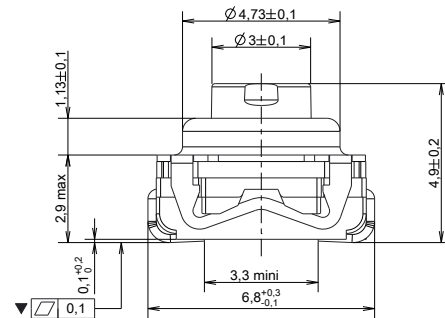
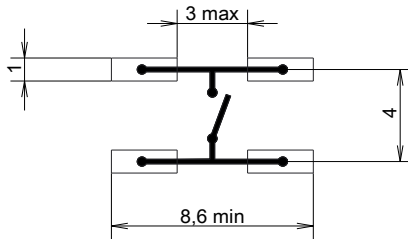
VOLTAGE: 2V min. / 24V Max.

CURRENT: 1mA min. / 42mA Max.

OPERATING TEMPERATURE: -40°C / +95°C

CONTACT RESISTANCE: 0.1 ohm

## PCB LAYOUT



## Packaging

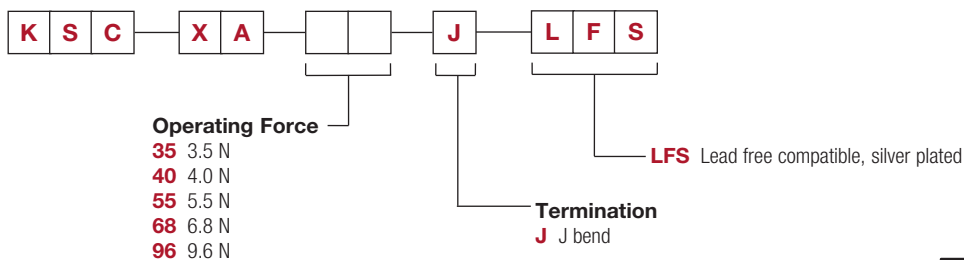
In reels of 1,400 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 380 mm ± 2 mm.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC SLT Series Long Travel Tact Switch

## Features/Benefits

- Long travel
- Soft sound
- IP40
- J & G terminations
- Tape & reel

## Typical Applications

- Automotive interior
- Front panel
- Instrumentation



Tactile Switches

B

## Specification

FUNCTION: Momentary  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: J bend & Gullwing type for SMT

## Mechanical

MAXIMUM APPLIED FORCE: 40N  
\* VALID ONE TIME. MAXIMUM ALLOWED TRAVEL TO AVOID OVERLOAD ISSUES IS 1.70MM.

| Type             | Force (N)   | Life (cycles) | Travel (mm)  |
|------------------|-------------|---------------|--------------|
| KSC SLT 221J LFS | 2.4 +/- 0.7 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 221G LFS | 2.4 +/- 0.7 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 223J LFG | 2.4 +/- 0.7 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 223G LFG | 2.4 +/- 0.7 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 241J LFS | 3.5 +/- 0.9 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 241G LFS | 3.5 +/- 0.9 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 243J LFG | 3.5 +/- 0.9 | 200,000       | 1.35 +/-0.25 |
| KSC SLT 243G LFG | 3.5 +/- 0.9 | 200,000       | 1.35 +/-0.25 |

## Electrical

|                       | Silver | Gold   |
|-----------------------|--------|--------|
| SWITCHING POWER MAX.: | 1.0 VA | 0.2 VA |
| MAXIMUM POWER:        | 1.0 VA | 0.2 VA |
| MAXIMUM VOLTAGE:      | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE:      | 20 mV  | 20 mV  |
| MAXIMUM CURRENT:      | 50 mA  | 10 mA  |
| MINIMUM CURRENT:      | 1 mA   | 1 mA   |

DIELECTRIC STRENGTH:  $\geq 250$  Vrms  
CONTACT RESISTANCE:  $< 100$ m $\Omega$   
INSULATION RESISTANCE: Initial measurement:  $\geq 1$ G $\Omega$   
After damp heat:  $\geq 10$ M $\Omega$   
BOUNCE TIME:  $< 5$  ms

## Environmental

OPERATING TEMPERATURE: -40°C to +85°C (Silver)  
-40°C to +125°C (Gold)  
STORAGE TEMPERATURE: -40°C to +85°C (Silver)  
-40°C to +125°C (Gold)

## Process

Compatible with the lead free reflow soldering process.

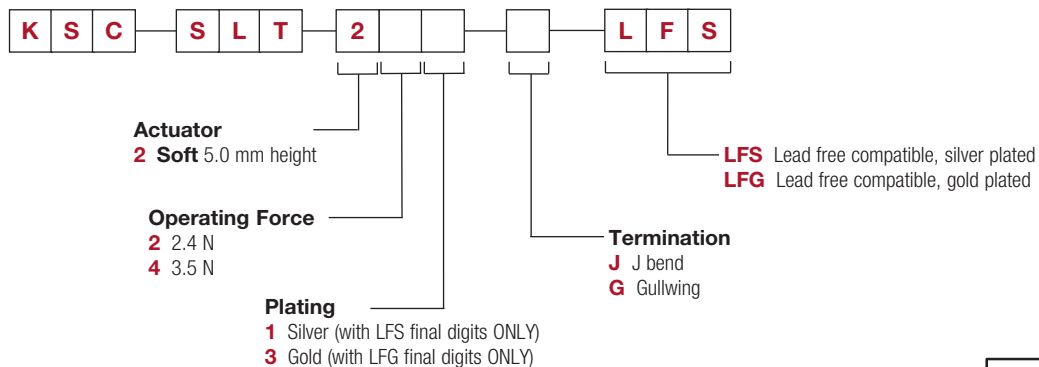
## Packaging

In reels of 1,000 pieces.  
Dimensions of reels according to EIA RS481 or IEC 2863.  
External diameter 330 mm  $\pm$  2 mm.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm

Specifications and dimensions subject to change

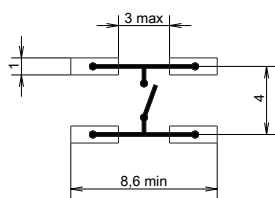
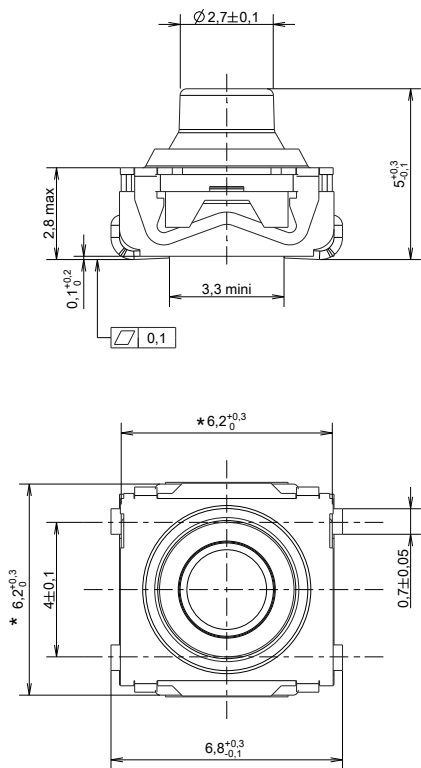


20 Apr 21



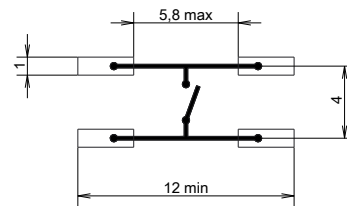
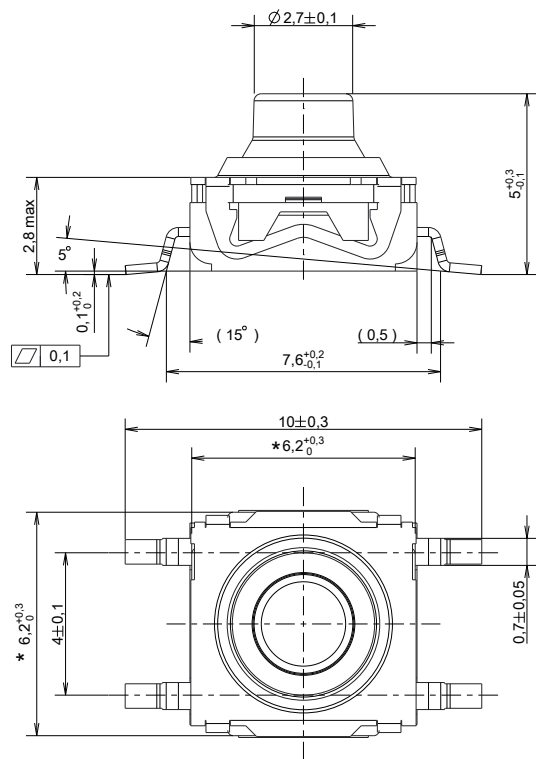
# KSC SLT Series Long Travel Tact Switch

## J J Bend



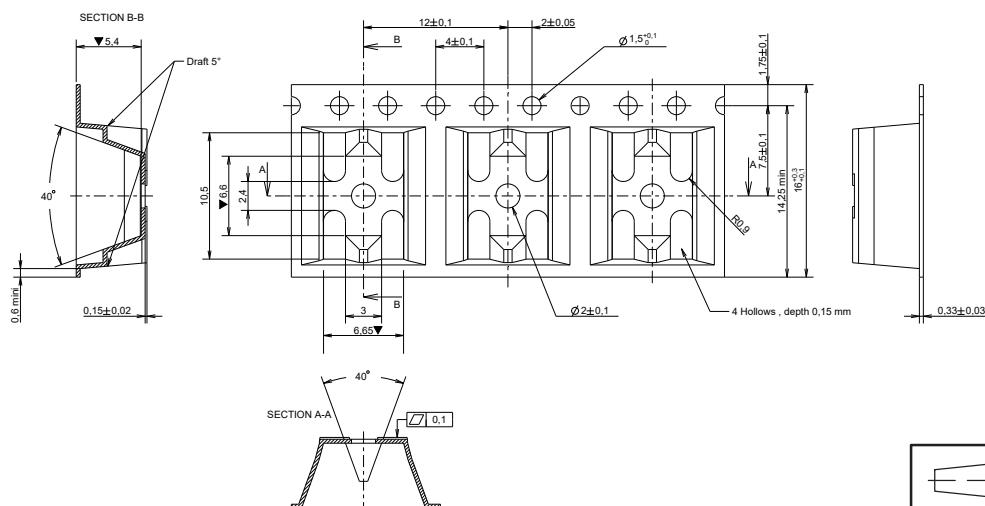
LAYOUT - PAD  
SCALE : 5

## G Gullwing



LAYOUT - PAD  
SCALE : 5

## TAPE & REEL



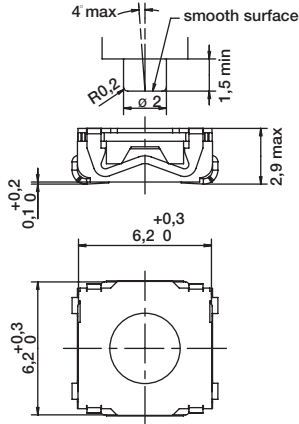
Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC1 Series Sealed Tact Switch for SMT

## KSC1 without actuator 2,5 mm high



| Type   | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC121 | 1.8 ± 0.65                   | 200,000                     | 0.3 ± 0.15  |
| KSC141 | 3 ± 0.75                     | 200,000                     | 0.3 ± 0.15  |
| KSC151 | 5.5 ± 1.4                    | 100,000                     | 0.35 ± 0.15 |



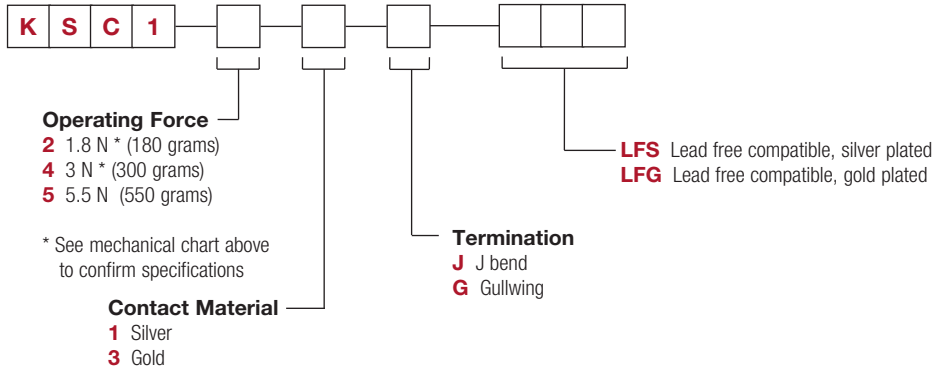
### Packaging

Switches delivered on continuous tape & reels of 2,000 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.  
 For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm  
 Specifications and dimensions subject to change

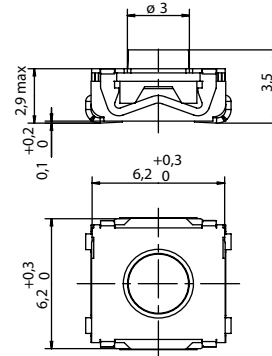


# KSC2 Series Sealed Tact Switch for SMT

## KSC2 soft actuator 3,5 mm high



| Type            | Operating force FA (Newtons) | Operating life (operations) | Travel (mm)        |
|-----------------|------------------------------|-----------------------------|--------------------|
| KSC201          | 1.6 ± 0.6                    | 5,000,000                   | 0.3 ± 0.2          |
| KSC221          | 2 ± 0.5                      | 500,000                     | 0.35 + 0.25/- 0.15 |
| KSC222          | 2 ± 0.5                      | 1,000,000                   | 0.35 + 0.25/- 0.15 |
| KSC241          | 3.5 ± 0.9                    | 300,000                     | 0.5 ± 0.2          |
| KSC251          | 5.55 ± 1.45                  | 300,000                     | 0.5 ± 0.2          |
| KSC241 SP DELTA | 3.55 ± 0.9                   | 300,000                     | 0.5 ± 0.2          |
| KSC251 SP DELTA | 6.2 ± 1.55                   | 100,000                     | 0.6 ± 0.2          |



### Packaging

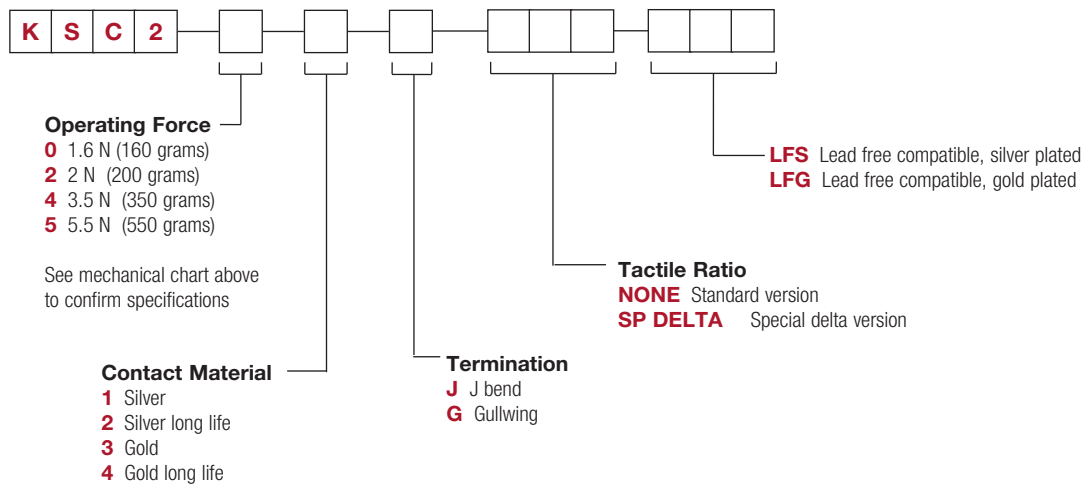
Switches delivered on continuous tape & reels of 2,000 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.**

**For any part number different from those listed above, please consult your local representative.**



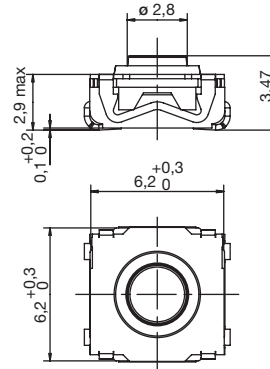
Dimensions are shown: mm  
 Specifications and dimensions subject to change

# KSC3 Series Sealed Tact Switch for SMT

## KSC3 hard actuator 3,5 mm high



| Type   | Operating force FA (Newtons) | Operating life (operations) | Travel (mm)    |
|--------|------------------------------|-----------------------------|----------------|
| KSC321 | 2 ± 0.4                      | 300,000                     | 0.2 + 0.3/- 0  |
| KSC341 | 3 ± 0.75                     | 300,000                     | 0.2 + 0.3/- 0  |
| KSC351 | 5 ± 1                        | 100,000                     | 0.25 + 0.3/- 0 |



### Packaging

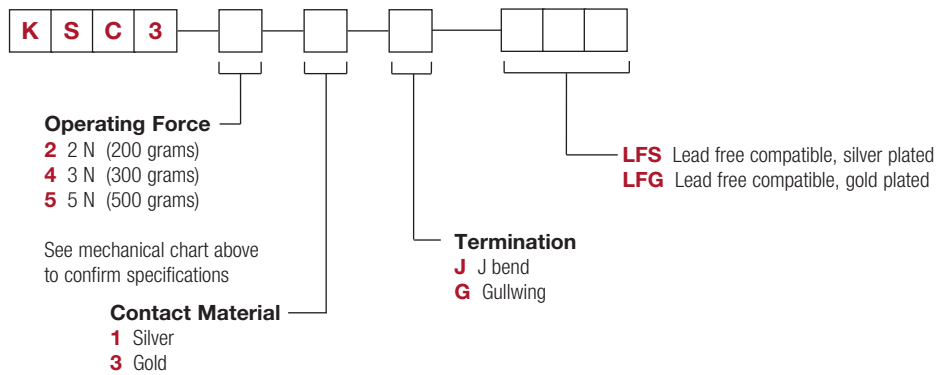
Switches delivered on continuous tape & reels of 2,000 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.**

**For any part number different from those listed above, please consult your local representative.**

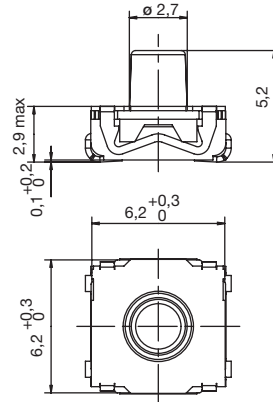


# KSC4 Series Sealed Tact Switch for SMT

## KSC4 soft actuator 5,2 mm high



| Type        | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|-------------|------------------------------|-----------------------------|-------------|
| KSC401 50SH | 1.45 ± 0.55                  | 5,000,000                   | 0.5 ± 0.25  |
| KSC411 70SH | 1.4 ± 0.35                   | 1,000,000                   | 0.35 ± 0.20 |
| KSC421 70SH | 1.7 ± 0.45                   | 300,000                     | 0.5 ± 0.25  |
| KSC422 70SH | 1.7 ± 0.45                   | 1,000,000                   | 0.5 ± 0.25  |
| KSC441 70SH | 4 ± 1                        | 300,000                     | 0.75 ± 0.25 |
| KSC442 70SH | 4 ± 1                        | 1,000,000                   | 0.75 ± 0.25 |
| KSC451 70SH | 4.25 ± 0.75                  | 300,000                     | 0.8 ± 0.2   |
| KSC441 SPD  | 3.5 ± 0.9                    | 300,000                     | 0.7 ± 0.2   |
| KSC441 ST1  | 3.4 ± 1                      | 300,000                     | 0.7 ± 0.25  |
| KSC441 ST2  | 3.4 ± 1                      | 300,000                     | 0.35 ± 0.20 |
| KSC461 ST1  | 6.25 ± 1.75                  | 100,000                     | 1 ± 0.3     |
| KSC461 ST2  | 6.25 ± 1.75                  | 300,000                     | 0.5 ± 0.2   |



Tactile Switches

### Packaging

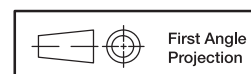
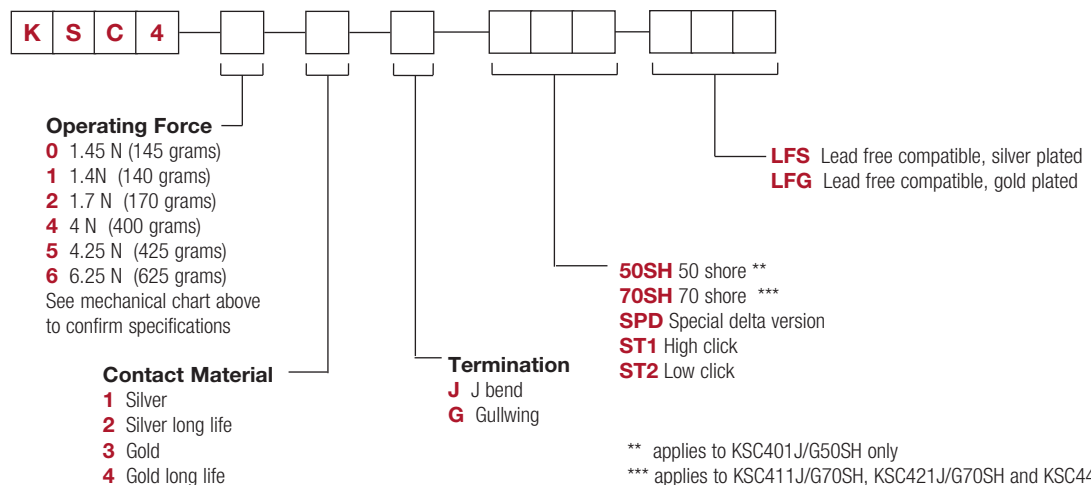
Switches delivered on continuous tape & reels of 1,000 pieces  
Dimensions according to EIA RS-481/ IEC 60286-3 standard  
External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC DCT Series Dual Circuit Technology Tact Switch

## Features/Benefits

- SPDT NC-NO function
- Silicone actuator
- J or G terminations
- Tape & reel
- IP67

## Typical Applications

- Automotive
- Medical equipment
- Industrial electronics

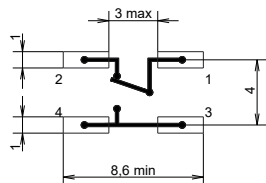


| Type                 | Force (N)    | Operating Life (operations) | Travel (mm)     |
|----------------------|--------------|-----------------------------|-----------------|
| KSC441J DCT 70SH LFS | 4.75 +/-1.25 | 300,000                     | 0.85+0.35/-0.25 |
| KSC441G DCT 70SH LFS | 4.75 +/-1.25 | 300,000                     | 0.85+0.35/-0.25 |

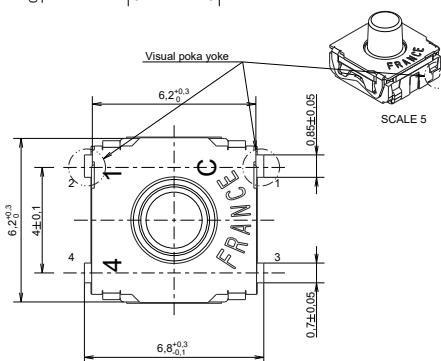
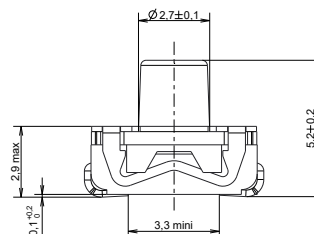
### Packaging

In reels of 1,000 pieces.  
Dimensions of reels according to EIA RS481 or IEC 2863.  
External diameter 330 ± 2 mm

### PCB Layout



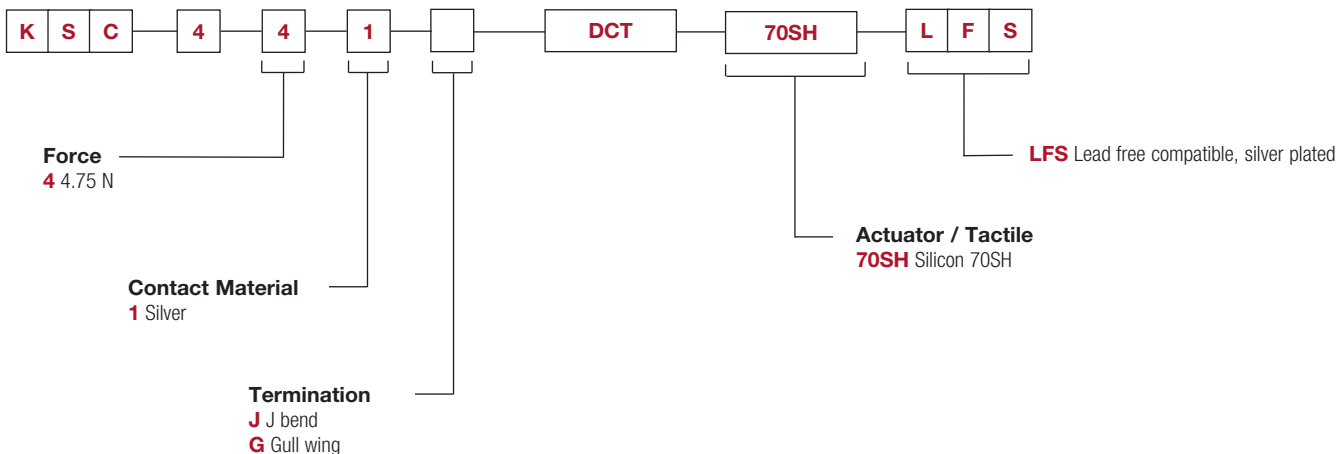
LAYOUT - PAD  
SCALE : 5  
1- 2 NC  
1- 3 NO



## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC PF Series Potting Friendly Tact Switch



## Features/Benefits

- Extended Cage
- Silicone actuator
- J or G terminations
- Tape & reel
- IP67

## Typical Applications

- Automotive
- Medical equipment
- Industrial electronics

| Type                | Force (N)    | Operating Life (operations) | Travel (mm) |
|---------------------|--------------|-----------------------------|-------------|
| KSC421G 70SH LFS PF | 1.8+/-0.45   | 300,000                     | 0.5+/-0.25  |
| KSC421J 70SH LFS PF | 1.8+/-0.45   | 300,000                     | 0.5+/-0.25  |
| KSC422G 70SH LFS PF | 1.8+/-0.45   | 1,000,000                   | 0.5+/-0.25  |
| KSC422J 70SH LFS PF | 1.8+/-0.45   | 1,000,000                   | 0.5+/-0.25  |
| KSC441G 70SH LFS PF | 4 +/- 1      | 300,000                     | 0.65+/-0.25 |
| KSC441J 70SH LFS PF | 4 +/- 1      | 300,000                     | 0.65+/-0.25 |
| KSC442G 70SH LFS PF | 4 +/- 1      | 1,000,000                   | 0.65+/-0.25 |
| KSC442J 70SH LFS PF | 4 +/- 1      | 1,000,000                   | 0.65+/-0.25 |
| KSC461G 70SH LFS PF | 6.25+/- 1.75 | 300,000                     | 0.75+/-0.25 |
| KSC461J 70SH LFS PF | 6.25+/- 1.75 | 300,000                     | 0.75+/-0.25 |
| KSC471G 70SH LFS PF | 4 +/- 1      | 300,000                     | 0.65+/-0.25 |
| KSC471J 70SH LFS PF | 4 +/- 1      | 300,000                     | 0.65+/-0.25 |

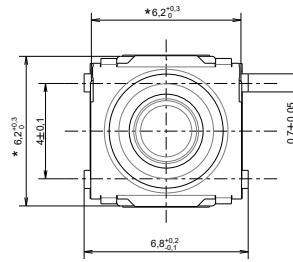
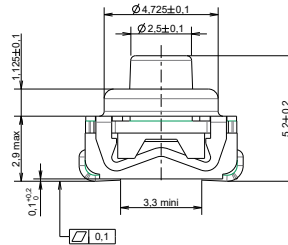
Max. potting height: 2.9 mm

### Packaging

In reels of 1,000 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863.

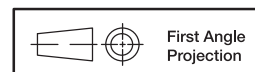
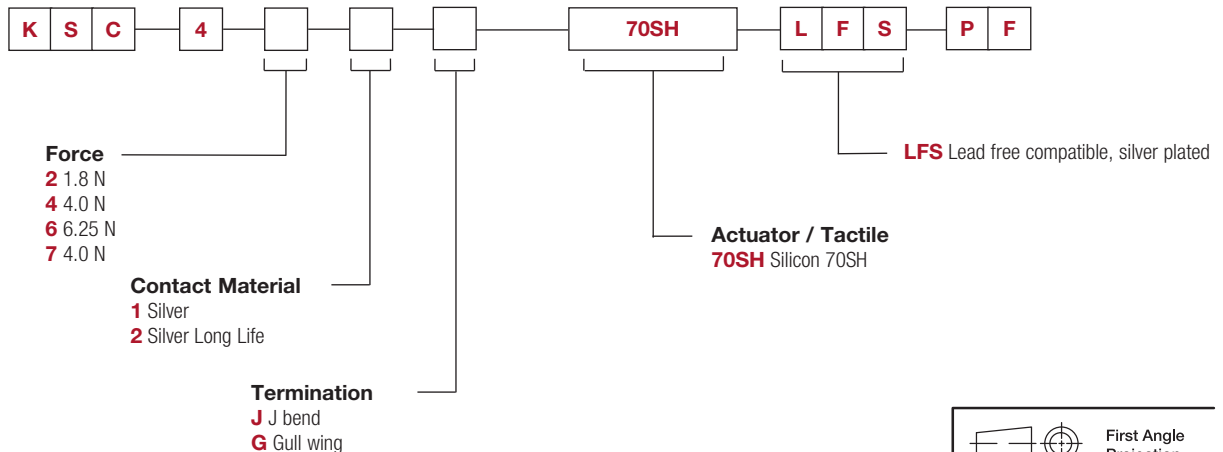
External diameter 330 ± 2 mm



## How To Order

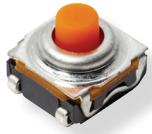
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



Dimensions are shown: mm  
 Specifications and dimensions subject to change

# KSC OF Series Overload Friendly Tact Switch



## Features/Benefits

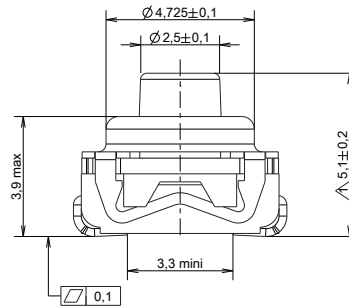
- Extended cage for mechanical stop
- Silicone actuator
- J termination
- Tape & reel
- IP67

## Typical Applications

- Industrial electronics
- Consumer
- Medical equipment
- Automotive interior

Tactile Switches B

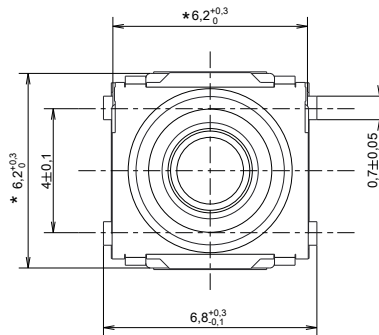
| Type                | Force (N)   | Life    | Travel (mm)   |
|---------------------|-------------|---------|---------------|
| KSC421J 70SH LFS OF | 1.65+/-0.45 | 300,000 | 0.5+/-0.25    |
| KSC441J 70SH LFS OF | 4.0+/-1.0   | 300,000 | 0.65+0.3/-0.2 |



- Life time is 300,000 cycles at 20N actuation force
- The extended cage can be used as mechanical stop for the activation button
- Overload value reaches 200N (one time)

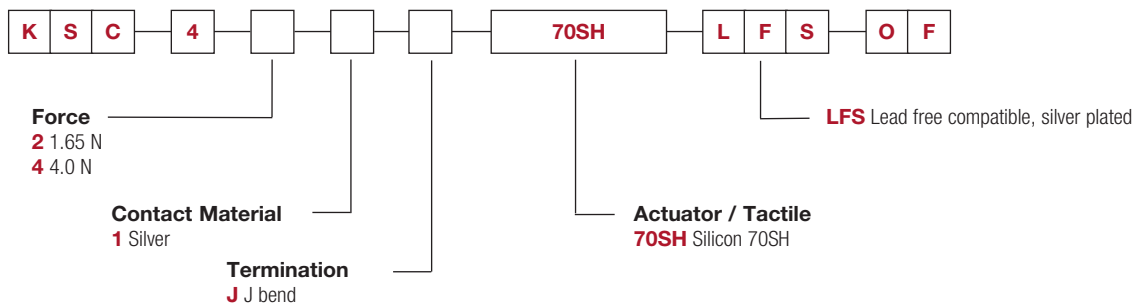
## Packaging

In reels of 1,000 pieces  
Dimensions of reels according to EIA RS481 or IEC 2863  
External diameter 330 ± 2 mm



## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box. For any part number different from those listed above, please consult your local representative.





**NEW**

# KSC2 TE Series Tireless Endurance Tact Switch



### Features/Benefits

- New combination of dome/support
- Silicone actuator
- J terminations
- Tape & reel
- IP67

### Typical Applications

- Elevator
- Game controllers/ Drones
- Industrial applications
- Medical applications

| Type            | Force (N) | Life       | Travel (mm) | Electrical Height ON (mm) (from PCB) |
|-----------------|-----------|------------|-------------|--------------------------------------|
| KSC2 TE 01J LFS | 1.60 ±0.6 | 10,000,000 | 0.25 ±0.2   | 3.25 ±0.2                            |
| KSC2 TE 31J LFS | 2.80 ±0.7 | 5,000,000  | 0.30 ±0.2   | 3.25 ±0.2                            |
| KSC2 TE 41J LFS | 4.00 ±1.0 | 5,000,000  | 0.35 ±0.2   | 3.20 ±0.2                            |

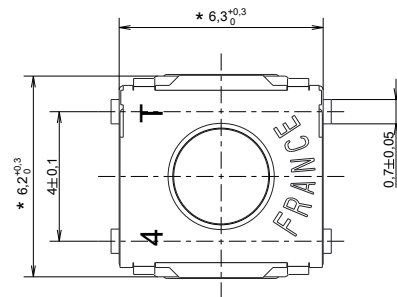
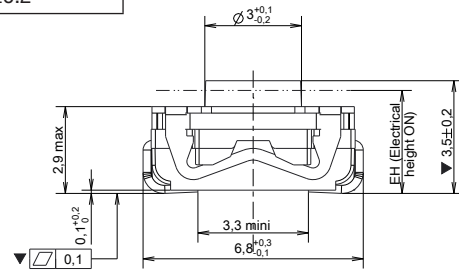
Life time under electrical load (24 V, 1.3 mA)

### Packaging

In reels of 2,000 pieces

Dimensions of reels according to EIA RS481 or IEC 2863

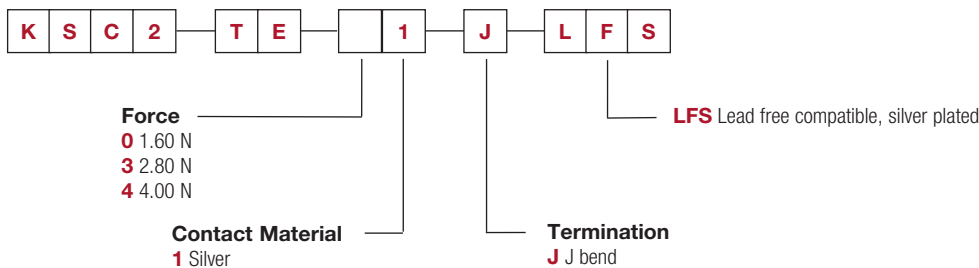
External diameter 330 ± 2 mm



### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.

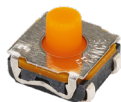


B Tactile Switches



**NEW**

# KSC4 TE Series Tireless Endurance Tact Switch



## Features/Benefits

- New combination of dome/support
- Silicone actuator
- J terminations
- Tape & reel
- IP67

## Typical Applications

- Elevator
- Game controllers/ Drones
- Industrial applications
- Medical applications

Tactile Switches

## Specification

FUNCTION: Normally open  
 CONTACT TYPE: SPST, N.O.  
 TERMINALS: J bend for SMT  
 CONTACT MATERIAL: Silver plated

## Environmental

OPERATING TEMPERATURE: -40°C to 90°C

## Mechanical

| Type            | Force (N) | Life       | Travel (mm) | Electrical Height ON (mm) (from PCB) |
|-----------------|-----------|------------|-------------|--------------------------------------|
| KSC4 TE 01J LFS | 1.60 ±0.6 | 10,000,000 | 0.25 ±0.2   | 4.9 ±0.2                             |
| KSC4 TE 31J LFS | 2.80 ±0.7 | 5,000,000  | 0.35 ±0.2   | 4.8 ±0.2                             |
| KSC4 TE 41J LFS | 4.00 ±1.0 | 5,000,000  | 0.60 ±0.2   | 4.6 ±0.2                             |

Life time under electrical load (24 V, 1.3 mA)

## Packaging

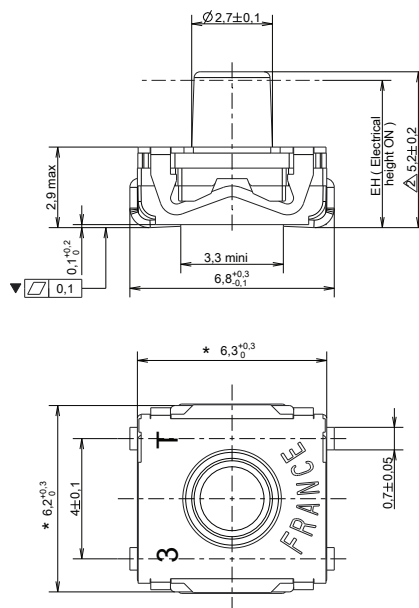
In reels of 1,400 pieces  
 Dimensions of reels according to EIA RS481 or IEC 2863  
 External diameter 380 ± 2 mm

## Electrical

MAXIMUM POWER: 0.03 VA  
 MIN/MAX VOLTAGE: 1V / 24V  
 MIN/MAX CURRENT: 1mA / 3mA  
 DIELECTRIC STRENGTH: 250 Vrms  
 CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE: (100V): ≥ 1000 MΩ  
 BOUNCE TIME: 1ms

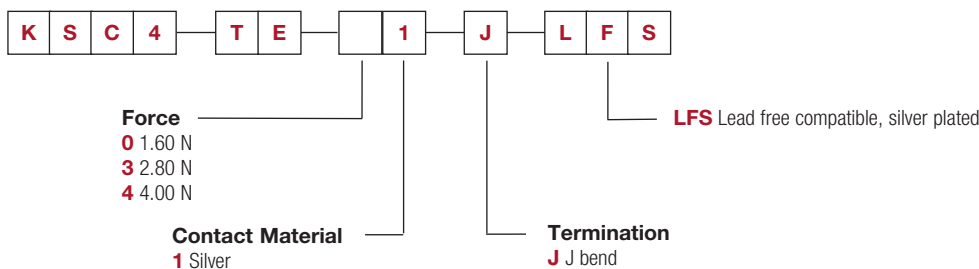
## Soldering

This component is suited to the following methods:  
 - Cleaning according to typical washing processes  
 - Lead free reflow soldering process in accordance with IEC 61760-1



## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.  
 For any part number different from those listed above, please consult your local representative.



# KSC5 Series Tact Switch with Rocker Option for SMT

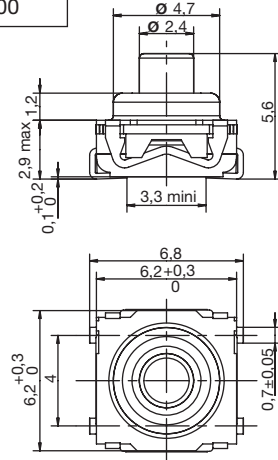
KSC5 hard actuator 5,6 mm high



| Type   | Operating force axial FA<br>N (grams) | Operating force lateral FL<br>N (grams) ±30% | Travel to make axial (mm) | Travel to make lateral (mm) | Life expectancy cycles, axial | Life expectancy cycles, lateral |
|--------|---------------------------------------|--|---------------------------|-----------------------------|-------------------------------|---------------------------------|
| KSC521 | 2 ± 0.5                               | 1.2 - 2.6                                    | 0.25 ± 0.15               | 0.5 ± 0.25                  | 100,000                       | 10,000                          |
| KSC541 | 3 ± 0.75                              | 1.8 - 3.8                                    | 0.25 ± 0.15               | 0.5 ± 0.25                  | 100,000                       | 10,000                          |

## Packaging

Switches delivered on continuous tape & reels of 1,000 pieces, dimensions according to EIA RS-481/ IEC 60286-3 standard  
External diameter 330 ± 2 mm

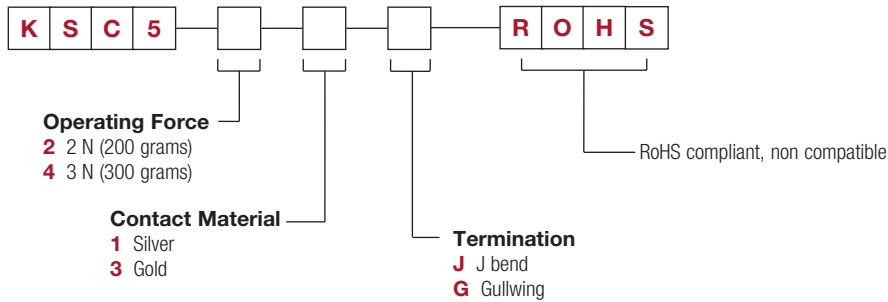


## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.

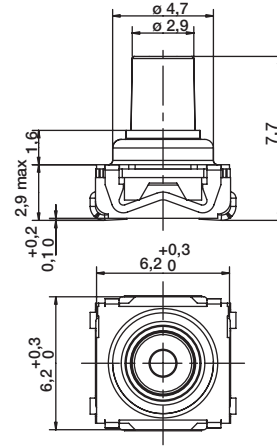


# KSC6 Series Sealed Tact Switch for SMT

## KSC6 hard actuator 7,7 mm high



| Type   | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC621 | 1.7 ± 0.5                    | 300,000                     | 0.4 ± 0.2   |
| KSC631 | 2.55 ± 0.65                  | 300,000                     | 0.4 ± 0.2   |
| KSC641 | 3.4 ± 0.85                   | 300,000                     | 0.4 ± 0.2   |



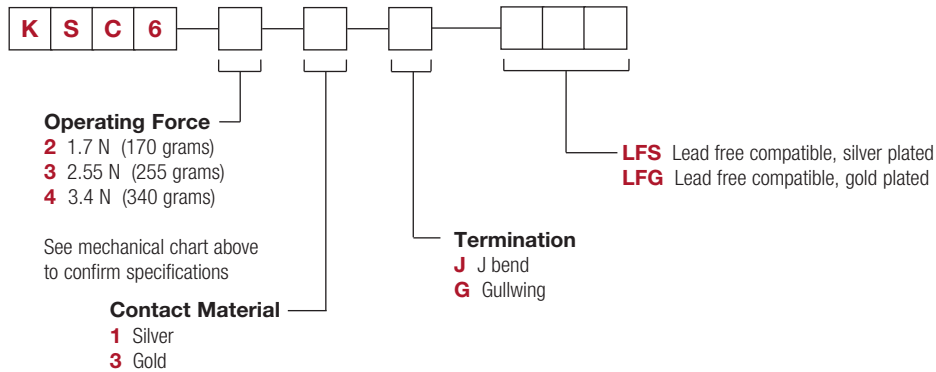
### Packaging

Switches delivered on continuous tape & reels of 950 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 380 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

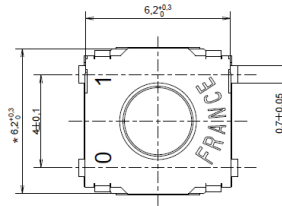
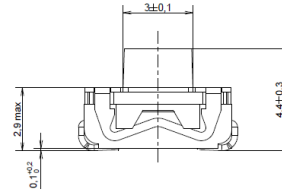
**However, please note that all the combinations of these options are not feasible.  
 For any part number different from those listed above, please consult your local representative.**



Dimensions are shown: mm  
 Specifications and dimensions subject to change

# KSC7 Series Sealed Tact Switch for SMT

## KSC7 soft actuator 4,4 mm high



| Type   | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC701 | 1.6 ± 0.6                    | 5,000,000                   | 0.3 ± 0.2   |
| KSC721 | 2.25 ± 0.55                  | 300,000                     | 0.3 ± 0.15  |
| KSC741 | 3.9 ± 1                      | 300,000                     | 0.4 ± 0.2   |

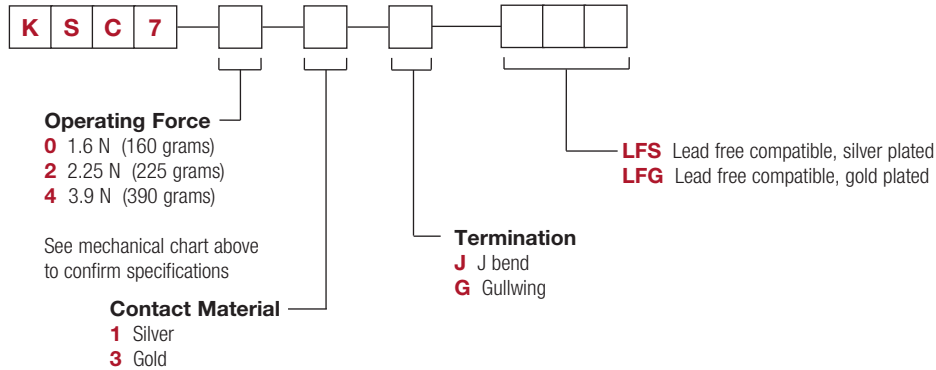
### Packaging

Switches delivered on continuous tape & reels of 1,000 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.  
 For any part number different from those listed above, please consult your local representative.**



First Angle Projection

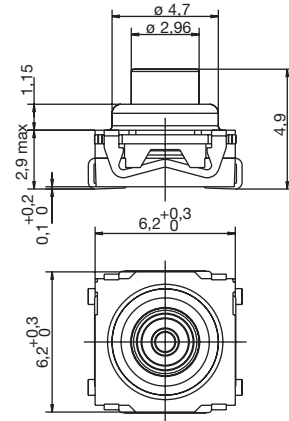
Dimensions are shown: mm  
 Specifications and dimensions subject to change

# KSC8 Series Sealed Tact Switch for SMT

## KSC8 hard actuator 4,9 mm high



| Type      | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|-----------|------------------------------|-----------------------------|-------------|
| KSC821    | 3.15 ± 0.75                  | 300,000                     | 0.65 ± 0.2  |
| KSC821 OL | 1.7 ± 0.5                    | 300,000                     | 0.4 ± 0.2   |
| KSC831 OL | 2.55 ± 0.65                  | 300,000                     | 0.4 ± 0.2   |
| KSC841 OL | 3.4 ± 0.85                   | 300,000                     | 0.4 ± 0.2   |



### Packaging

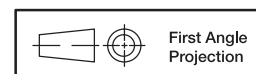
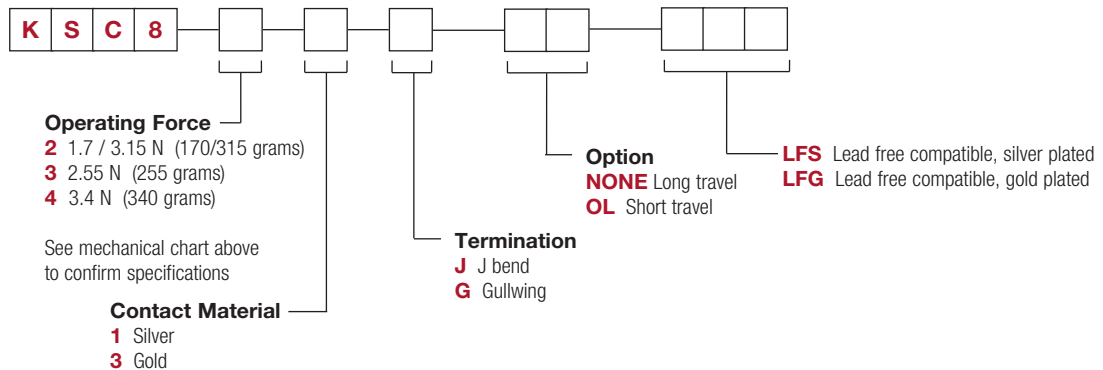
Switches delivered on continuous tape & reels of 1,000 pieces  
Dimensions according to EIA RS-481/ IEC 60286-3 standard  
External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC9 Series Sealed Tact Switches for SMT

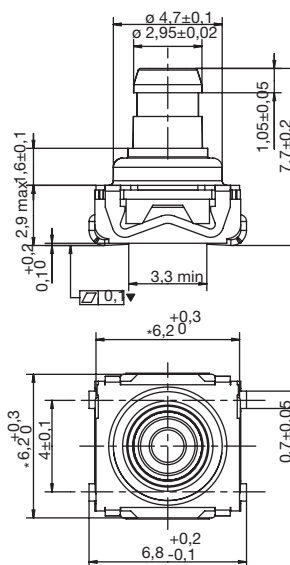
KSC9 hard actuator 7,7 mm high



| Type   | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|--------|------------------------------|-----------------------------|-------------|
| KSC921 | 1.7 ± 0.5                    | 300,000                     | 0.4 ± 0.2   |
| KSC931 | 2.25 ± 0.65                  | 300,000                     | 0.4 ± 0.2   |
| KSC941 | 3.4 ± 0.85                   | 300,000                     | 0.4 ± 0.2   |

## Packaging

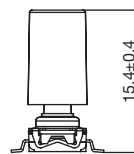
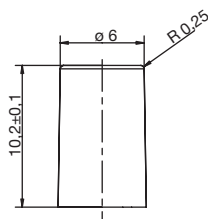
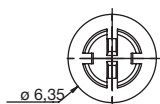
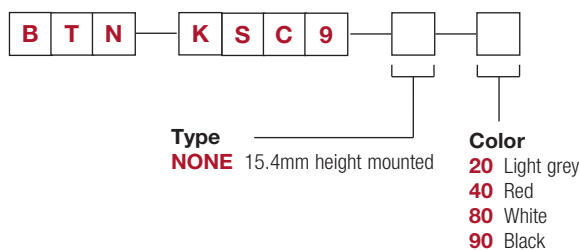
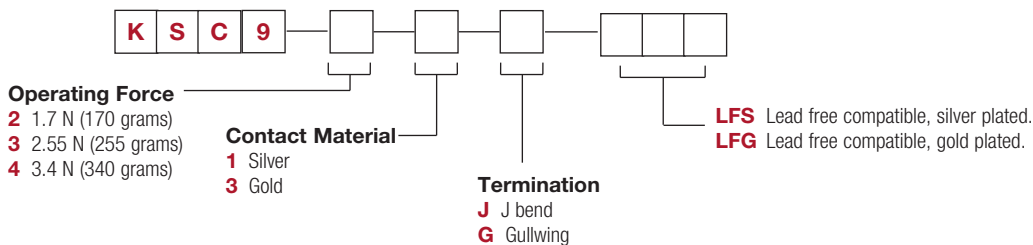
Switches delivered on continuous tape & reels of 950 pieces  
Dimensions according to EIA RS-481/ IEC 60286-3 standard  
External diameter 380 ± 2 mm



## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



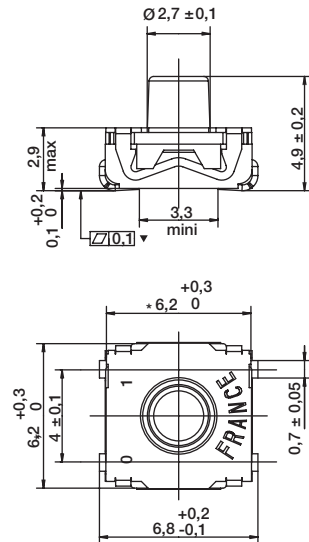
SWITCH WITH CAP



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSC10 Series Sealed Tact Switches for SMT

## KSC10 soft actuator 4,9 mm high



| Type    | Operating force FA (Newtons) | Operating life (operations) | Travel (mm) |
|---------|------------------------------|-----------------------------|-------------|
| KSC1001 | 1.45 ± 0.55                  | 5,000,000                   | 0.45 ± 0.25 |

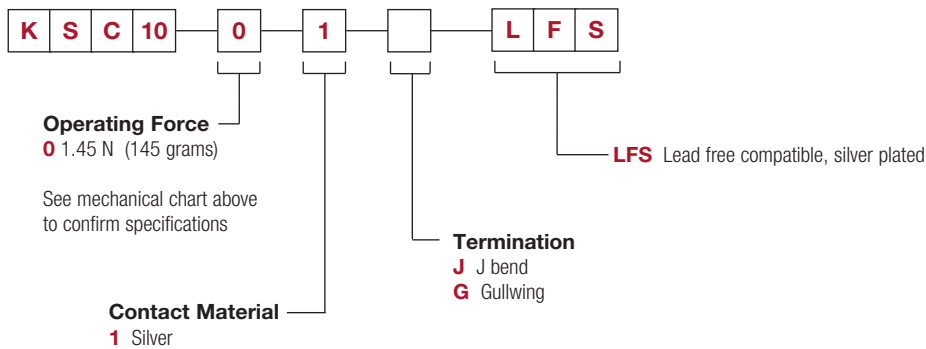
### Packaging

Switches delivered on continuous tape & reels of 1,000 pieces  
 Dimensions according to EIA RS-481/ IEC 60286-3 standard  
 External diameter 330 ± 2 mm

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.  
 For any part number different from those listed above, please consult your local representative.**



Note: KSC10 offered with yellow actuator as standard, hardness 55 Shore



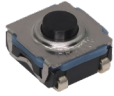
First Angle  
Projection

Dimensions are shown: mm  
 Specifications and dimensions subject to change



**NEW**

# KSC11 Series Sealed Tact Switch for SMT



### Features/Benefits

- **Hard actuator**
- **Long life**
- **Positive tactile feeling**
- **IP67 sealed**
- **SMT**

### Typical Applications

- **Gaming/ Drones**
- **Industrial**
- **Medical**
- **High-end consumer**
- **Avionics**

### Specification

FUNCTION: Normally open  
 CONTACT TYPE: SPST NO  
 TERMINALS: J bend for SMT  
 CONTACT MATERIAL: Silver plated

### Environmental

OPERATING TEMPERATURE: -40°C to 85°C

### Mechanical

| Type         | Force (N) | Life      | Travel (mm) |
|--------------|-----------|-----------|-------------|
| KSC1101J LFS | 1.60 ±0.4 | 3,000,000 | 0.20 ±0.1   |
| KSC1131J LFS | 3.20 ±0.6 | 2,000,000 | 0.25 ±0.15  |
| KSC1151J LFS | 5.00 ±1.0 | 1,000,000 | 0.40 ±0.15  |

### Electrical

MAXIMUM POWER: 1 VA  
 MIN. / MAX. VOLTAGE: 0.02V / 32V  
 MIN. / MAX. CURRENT: 1 mA / 50 mA  
 DIELECTRIC STRENGTH: 250 Vrms  
 CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE: (100V): 1000 MΩ  
 BOUNCE TIME: ≤ 5 ms

### Soldering

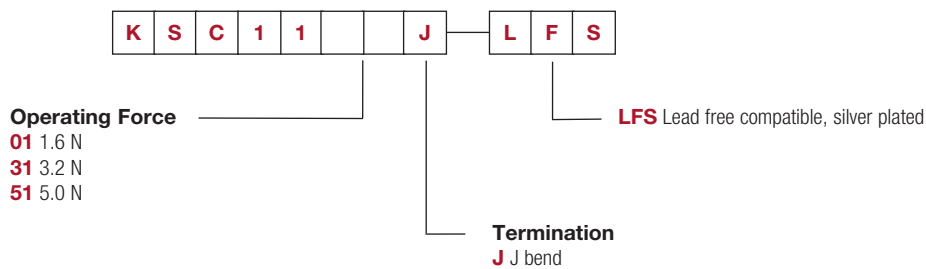
This component is suited to the following methods:  
 – Cleaning according to typical washing processes  
 – Lead free reflow soldering process in accordance with IEC 61760-1

### Packaging

In reels of 1,700 pieces  
 Width of carrier tape: 16 mm  
 Dimensions of reels: 380 mm

### How To Order

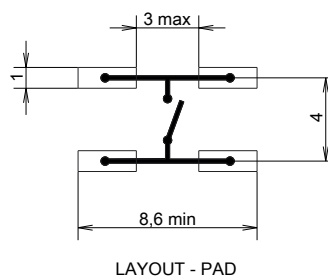
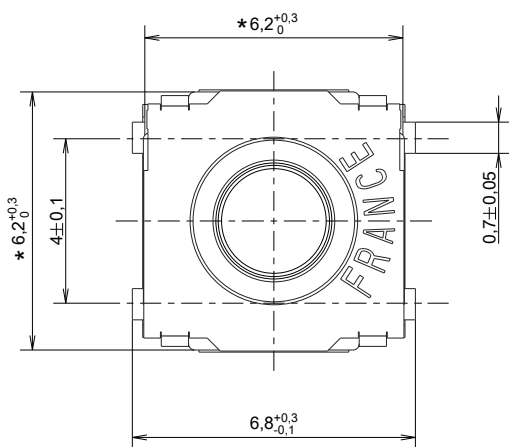
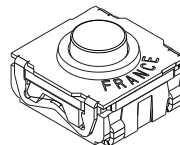
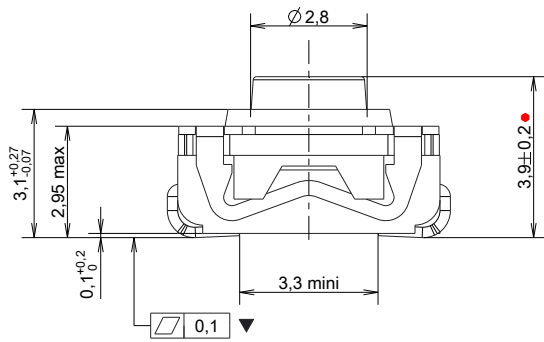
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.  
 For any part number different from those listed above, please consult your local representative.



Tactile Switches

# KSC11 Series Sealed Tact Switch for SMT

**NEW**



Dimensions are shown: mm  
Specifications and dimensions subject to change

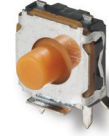
# KSC V2 Series Side Actuated Sealed Tact Switch

## Features/Benefits

- Full SMD side actuated
- Haptic adaptability
- Pin in paste terminations
- Tape & reel
- IP67

## Typical Applications

- Automotive
- Industrial electronics
- Network equipment
- Telecommunications



## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
 TERMINALS:  
 2 pin in paste signal terminals  
 3 SMD ground terminals

## Mechanical

| Type                       | Force (N)   | Operating Life (operations) | Travel (mm) |
|----------------------------|-------------|-----------------------------|-------------|
| KSC201 V2 LFS              | 1.6 ± 0.6   | 1,000,000                   | 0.3 ± 0.2   |
| KSC421 V2 70SH LFS         | 1.55 ± 0.45 | 300,000                     | 0.45 ± 0.25 |
| KSC441V2 70SH SP DELTA LFS | 3.5 ± 1.0   | 300,000                     | 0.7 ± 0.2   |
| KSC443V2 70SH SP DELTA LFG | 3.5 ± 1.0   | 300,000                     | 0.7 ± 0.2   |
| KSC421 V2 RT LFS           | 1.8 ± 0.5   | 300,000                     | 0.3 ± 0.2   |
| KSC423 V2 RT LFG           | 1.8 ± 0.5   | 300,000                     | 0.3 ± 0.2   |
| KSC441 V2 RT LFS           | 3.4 ± 1.0   | 300,000                     | 0.35 ± 0.2  |

## Electrical

|                  | Silver | Gold   |
|------------------|--------|--------|
| MAXIMUM POWER:   | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE: | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE: | 20 mV  | 20 mV  |
| MAXIMUM CURRENT: | 50 mA  | 10 mA  |
| MINIMUM CURRENT: | 1 mA   | 0.1 mA |

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms  
 CONTACT RESISTANCE: ≤ 100 mΩ  
 INSULATION RESISTANCE (100 V, initial stage): > 10<sup>9</sup> Ω  
 BOUNCE TIME: < 1 ms

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -55°C to 125°C |

## Process

SOLDERING: Depending on the application, this component is suited to the following methods:

- Cleaning according to typical washing processes.
- Lead free reflow soldering process in accordance with IEC 61760-1.

TERMINALS: pin in paste, silver or gold plated  
 TOP PLATE: tin plated  
 MSL level: 1  
 Vacuum pick head mandatory

## Packaging

In reels of 800 pieces.  
 Dimensions of reels according to EIA RS481 or IEC 2863.  
 External diameter 380 mm ± 2 mm.

**NOTE:** This product is designed and manufactured for general electronic devices. For systems where reliability and safety are required, please contact your sales representative to secure product integration and function to secure usage.

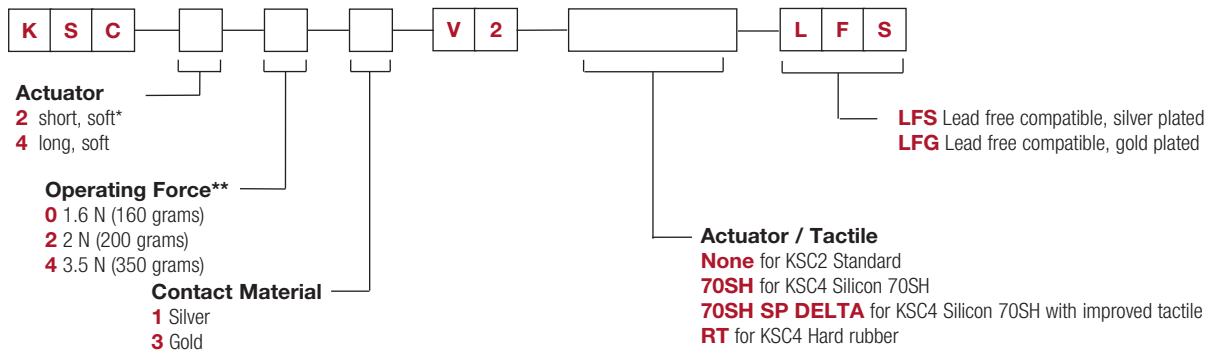
NOTE: Other configurations of haptics are available upon demand

MISUSE OVERLOAD: 40N with back support  
 SHEAR FORCE: 10N without back support

## How To Order

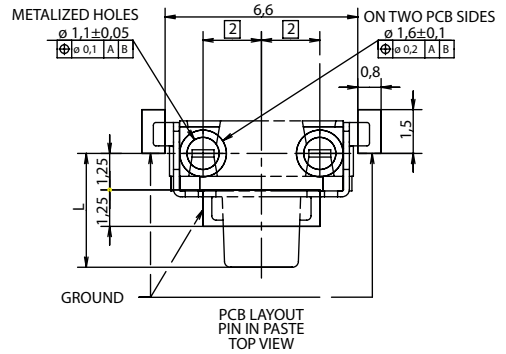
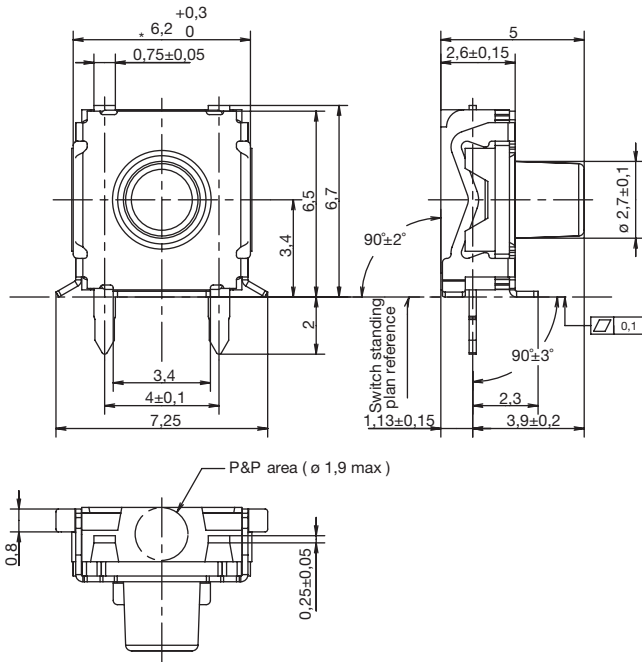
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



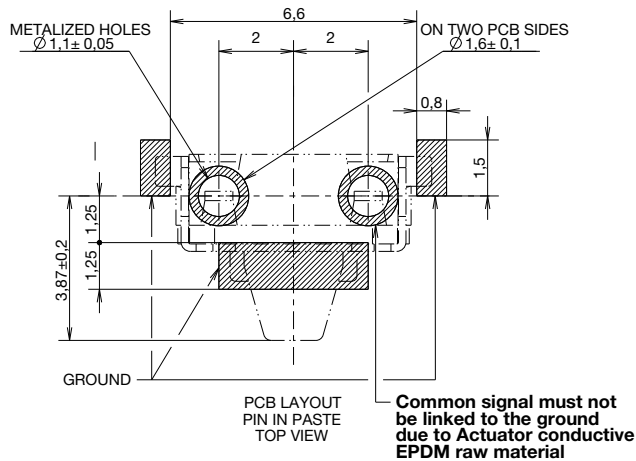
\* KSC2 version available upon demand  
 \*\* Force available upon demand (variant version)

# KSC V2 Series Side Actuated Sealed Tact Switch



| Series | L   |
|--------|-----|
| KSC2   | 2,3 |
| KSC4   | 3,9 |

## IMPORTANT NOTE FOR RT ACTUATOR



This actuator is not compatible with grease even with restricted contact.

In case of the integration of an actuator or button by the customer, please consult us if use of plasticizer agent for button raw material (risk of chemical migration).

Our actuator contains carbon particles and is electrical conductive. In consequence, customer actuator must be electric insulating raw material.

Due to the cover raw material plating, small tin balls can appear after the reflow soldering process. These small tin balls are located near all cutting areas.

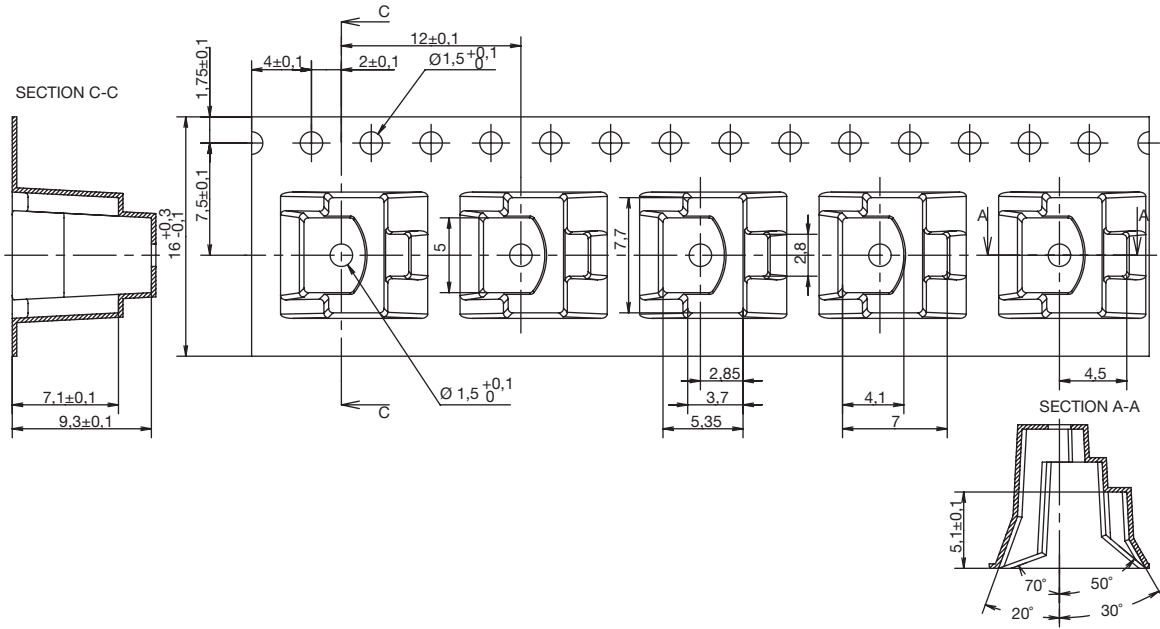


First Angle  
Projection

Dimensions are shown: mm

Specifications and dimensions subject to change

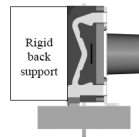
# TAPE AND REEL



B

Tactile Switches

# INTEGRATION

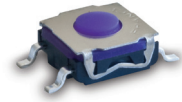


## Features/Benefits

- Low profile
- Cost efficient
- J or G terminations
- Tape and reel
- IP67

## Typical Applications

- Smart meters
- Home appliances
- Consumer electronics
- Industrial electronics
- Telecommunications



## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: J bend & Gullwing type for SMT

## Mechanical

| Type       | Operating Force FA (Newtons) |      | Operating Life Operations | Travel (mm)    |
|------------|------------------------------|------|---------------------------|----------------|
|            | Min.                         | Max. |                           |                |
| KSEM31JLFS | 1,6 ± 0,6                    |      | 300,000                   | 0,3 + 0,1/-0,2 |
| KSEM31GLFS | 1,6 ± 0,6                    |      | 300,000                   | 0,3 + 0,1/-0,2 |
| KSEK43JLFS | 2,25 ± 0,75                  |      | 300,000                   | 0,3 ± 0,2      |
| KSEK43GLFS | 2,25 ± 0,75                  |      | 300,000                   | 0,3 ± 0,2      |

NOTE: For cost effectiveness the tactile feeling is not specified and can change along production. If your application requires a defined tactile effect, please consider KSC series for your application.

## Packaging

In reels of 2,000 pieces  
Dimensions of reels according to EIA RS481 or IEC 2863.  
External diameter 330 mm ± 2 mm.

## Electrical

MAXIMUM POWER: 1 VA  
MINIMUM/MAXIMUM VOLTAGE: 20 mV / 32 VDC  
MINIMUM/MAXIMUM CURRENT: 1 mA / 50 mA  
DIELECTRIC STRENGTH: (50 Hz, 1 min.): ≥ 250 V  
CONTACT RESISTANCE: ≤ 100 mΩ  
INSULATION RESISTANCE: (100 V): ≥ 10<sup>9</sup> Ω  
BOUNCE TIME: ≤ 1 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
STORAGE TEMPERATURE: -55°C to 85°C

## Process

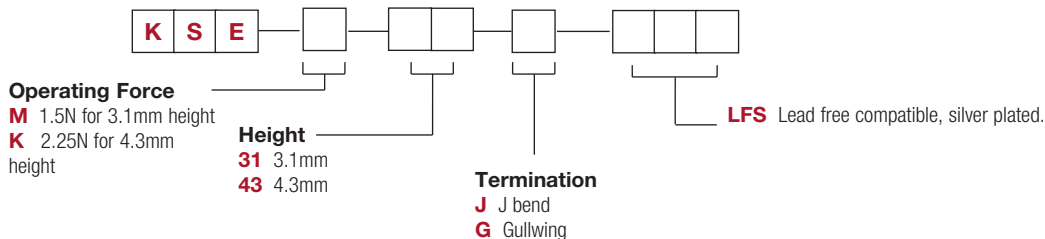
SOLDERING: Depending on the application, this component is suited to the following methods:  
– Cleaning according to typical washing processes.  
– Lead free reflow soldering process in accordance with IEC 61760-1.

## NOTE:

Specifications listed above are for switches with standard options. KSE series is not subject to adaptation and/or modification for specific use. If you require additional features, please refer to the KSC series. KSE is not recommended for applications requiring high level of performance such as aerospace, automotive and some industrial applications.

## How To Order

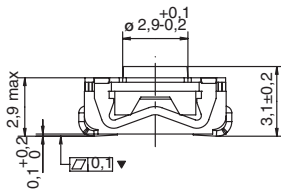
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



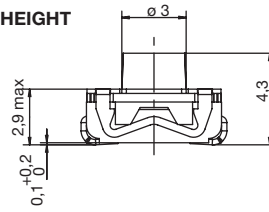
# KSE Series Low Profile Tact Switch

## HEIGHT

### 31 3.1 MM HEIGHT

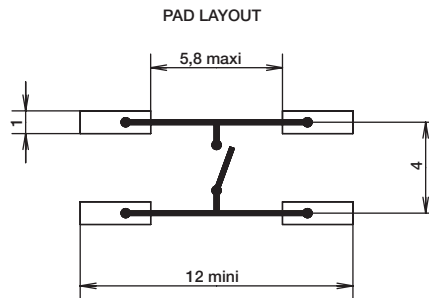
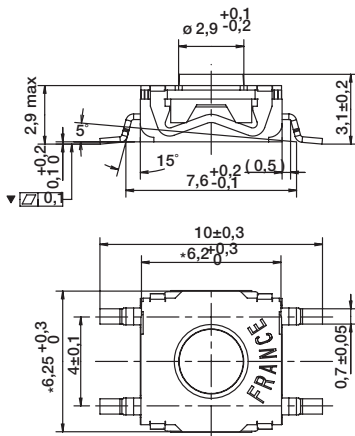


### 43 4.3 MM HEIGHT

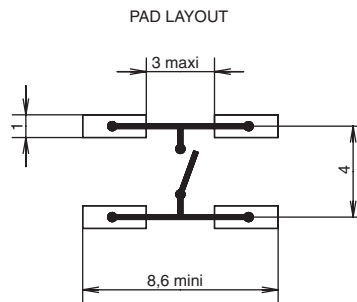
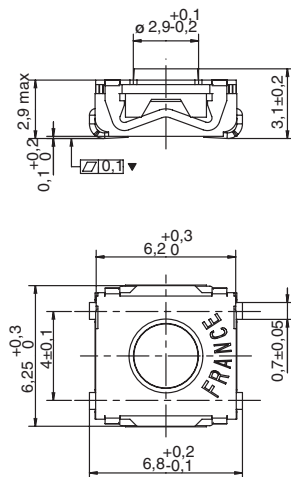


## TERMINATION

### G GULLWING



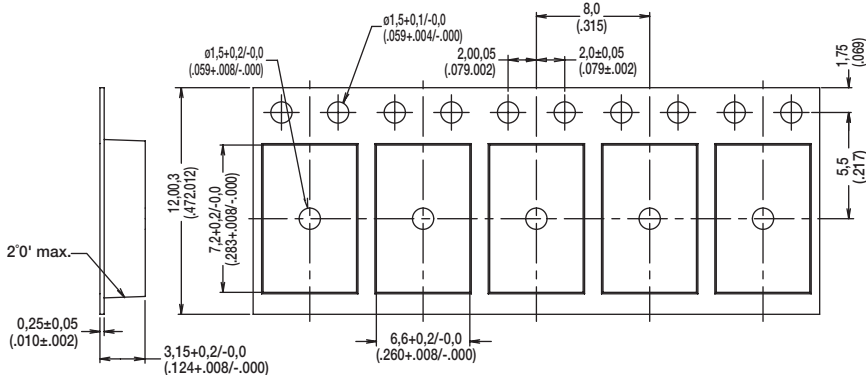
### J J BEND



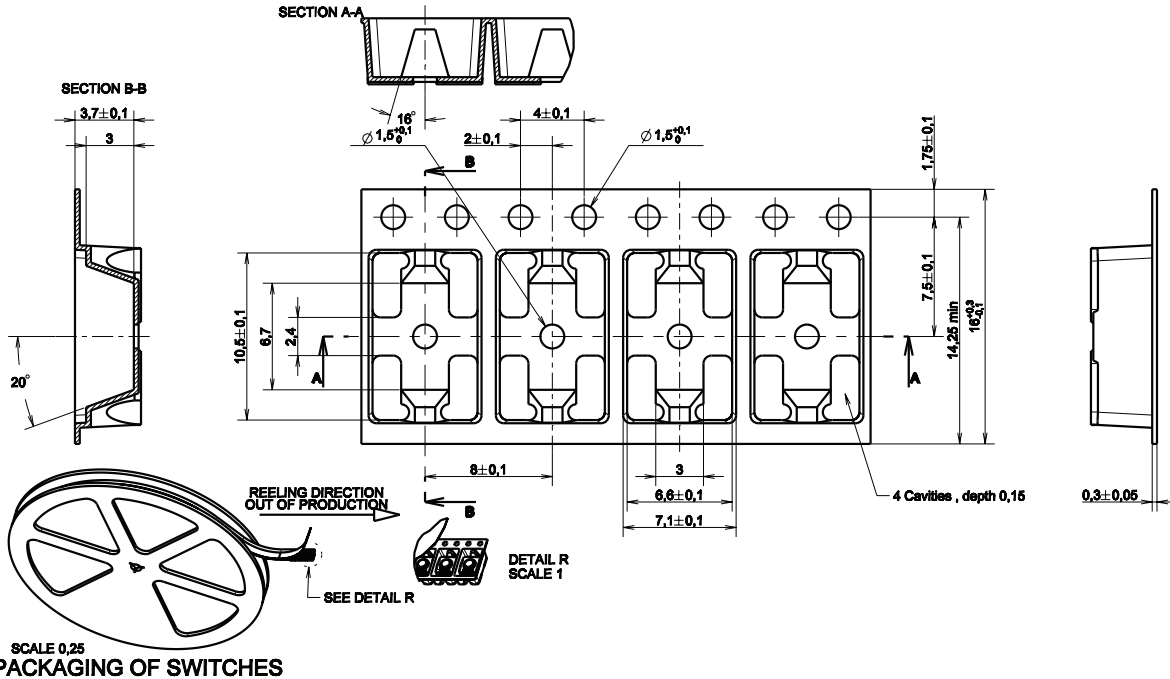
# KSE Series Low Profile Tact Switch

## TAPE & REEL

12 mm height



16 mm height



Tactile Switches

B



**NEW**

# EL Series Basic Tact Switch for SMT



### Features/Benefits

- Cost efficient
- Market standard size
- SMT - Tape & reel
- IP67 sealed
- Silicone actuator

### Typical Applications

- Smart meters
- Home appliances
- Consumer electronics
- Industrial electronics
- Medical portable devices

### Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: SPST NO  
 TERMINALS: J bend for SMT  
 CONTACT MATERIAL: Silver plated

### Mechanical

| Type         | Force (N) | Life (cycles) | Travel (mm) |
|--------------|-----------|---------------|-------------|
| EL35 20J LFS | 2 ± 0.6   | 200,000       | 0.3 ± 0.2   |
| EL35 35J LFS | 3.5 ± 1.0 |               | 0.4 ± 0.2   |
| EL52 20J LFS | 2 ± 0.6   |               | 0.4 ± 0.25  |
| EL52 35J LFS | 3.5 ± 1.0 |               | 0.6 ± 0.25  |

### Electrical

MAXIMUM POWER: 0.9 VA  
 MINIMUM / MAXIMUM VOLTAGE: 1V / 18V  
 MINIMUM / MAXIMUM CURRENT: 0.01 mA / 150 mA  
 DIELECTRIC STRENGTH: 250 Vrms  
 CONTACT RESISTANCE: ≤100 mΩ  
 INSULATION RESISTANCE: (100 V): ≥100 MΩ  
 BOUNCE TIME: ≤5 ms

### Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
 STORAGE TEMPERATURE: -55°C to 85°C

### Process

SOLDERING: This component is suited to the following methods:  
 - Cleaning according to typical washing processes  
 - Lead free reflow soldering process in accordance with IEC61760-1

### Packaging

In reels of 2,000 pieces for EL35  
 Width of carrier tape: 12 mm  
 Dimensions of reels : 330 mm

In reels of 1,400 pieces for EL52  
 Width of carrier tape: 16 mm  
 Dimensions of reels : 380 mm

### Note:

Specifications listed above are for switches with standard options. EL series is not subject to adaptation and/or modification for specific use. If additional features are required, please refer to the KSC series.

Price available on request only, please contact your sales representative.

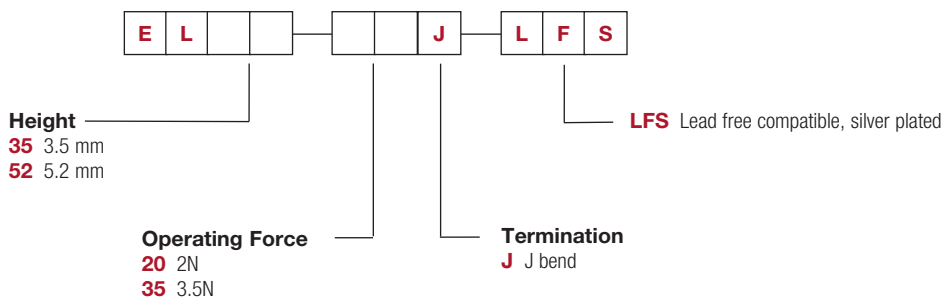


**B**

Tactile Switches

### How To Order

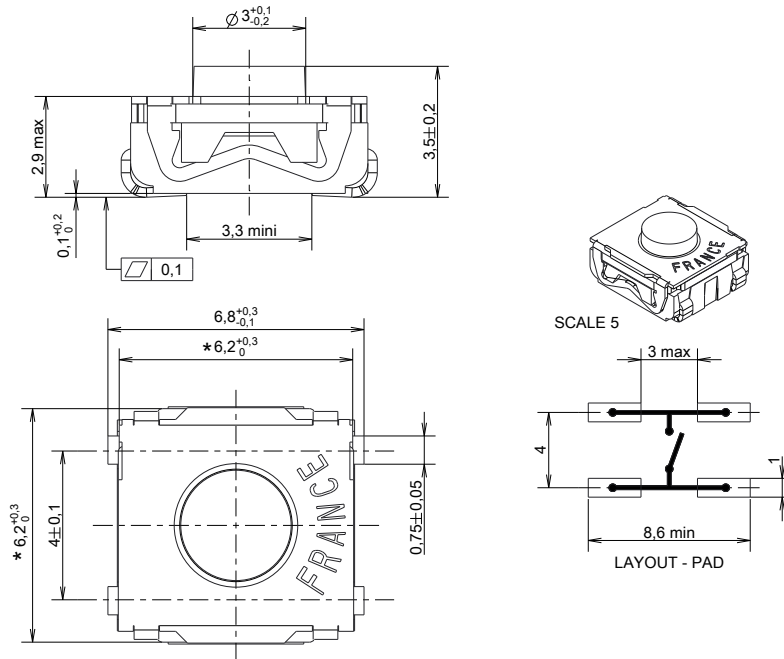
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.  
 For any part number different from those listed above, please consult your local representative.



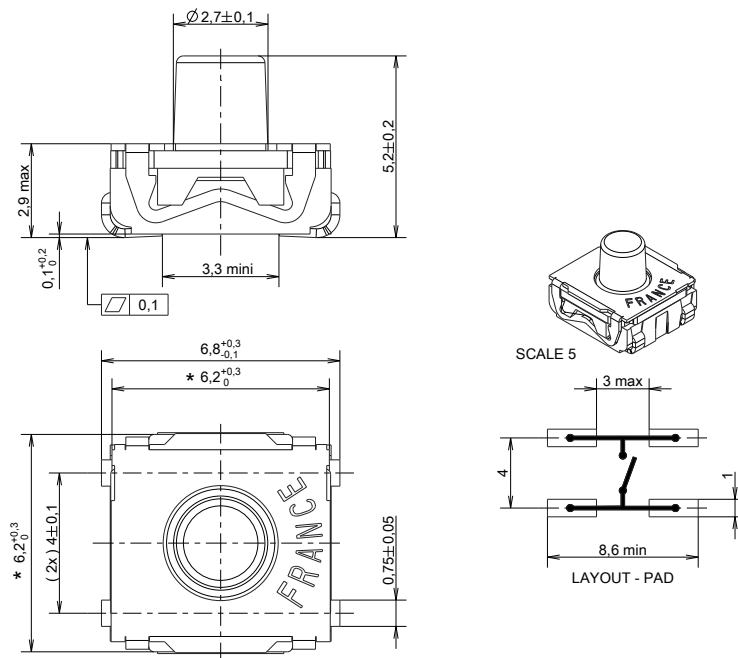
# EL Series Basic Tact Switch for SMT

**NEW**

## 3.5 MM HEIGHT



## 5.2 MM HEIGHT



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KST Series Long Travel Tact Switch for SMT

## Features/Benefits

- Rubber actuator
- Silver contact material
- J or G terminals
- Compatible with pick and place machines
- IP40 sealed
- RoHS compliant and compatible

## Typical Applications

- Front panel
- Car dashboards
- Telephone set
- Instrumentation



B

Tactile Switches

## Specification

FUNCTION: Momentary  
CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
TERMINALS: J BEND OR GULLWING TYPE FOR SMT

## Mechanical

MAXIMUM APPLIED FORCE: 4 KG (4078GF)\*  
\* VALID ONE TIME. MAXIMUM ALLOWED TRAVEL TO AVOID OVERLOAD ISSUES  
IS 1.75MM

| Type        | Operating force Fa N (grams)±30% | Operating life (operations) | Travel to make |
|-------------|----------------------------------|-----------------------------|----------------|
| KST221G / J | 1,6-3,2                          | 100,000                     | 1,3+0,3/-0.2   |
| KST241G / J | 2,45-4,55                        | 100,000                     | 1,3+0,3/-0.2   |

## Packaging

Switches are delivered on continuous tape and reels of 1,000 pieces, 330 (12.992) external diameter. Other dimensions according to IEC 60286-3.

This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment.  
Please contact your sales representative to get contractual specification package.

## Electrical

|                        |                            |        |
|------------------------|----------------------------|--------|
| SWITCHING POWER MAX.:  | 1.0 VA                     | 0.2 VA |
| MAXIMUM POWER:         | 1.0 VA                     | 0.2 VA |
| MAXIMUM VOLTAGE:       | 32 VDC                     | 32 VDC |
| MINIMUM VOLTAGE:       | 20 MV                      | 20 MV  |
| MAXIMUM CURRENT:       | 50 MA                      | 10 MA  |
| MINIMUM CURRENT:       | 1 MA                       | 1 MA   |
| DIELECTRIC STRENGTH:   | ≥ 250 Vrms                 |        |
| CONTACT RESISTANCE:    | < 100mΩ                    |        |
| INSULATION RESISTANCE: | Initial measurement: ≥ 1GΩ |        |
|                        | After damp heat: ≥ 10MΩ    |        |
| BOUNCE TIME:           | < 5 ms                     |        |

## Environmental

OPERATING TEMPERATURE: -40°C to +85°C (Silver)  
-40°C to +125°C (Gold)  
STORAGE TEMPERATURE: -40°C to +85°C (Silver)  
-40°C to +125°C (Gold)

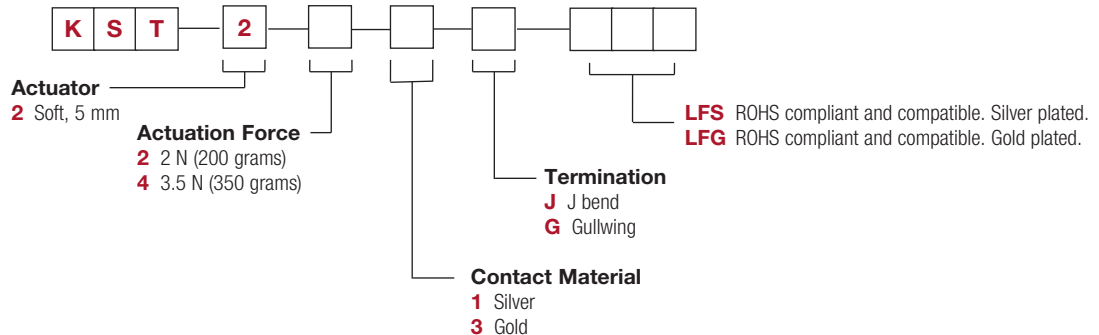
## Process

Soldering: lead free reflow soldering process in accordance with IEC 61760-1.

**NOTE:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

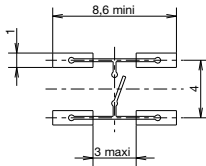
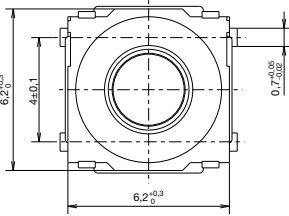
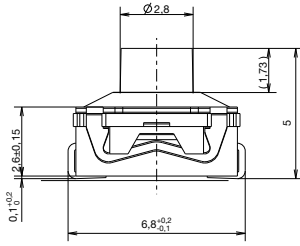
## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

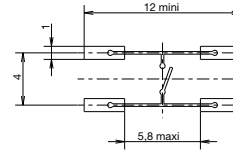
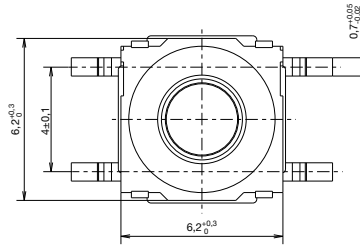
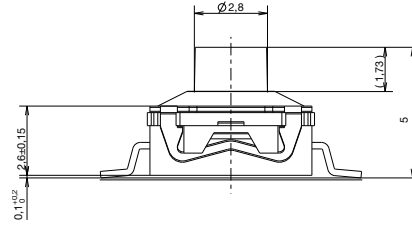


# KST Series Long Travel Tact Switch for SMT

## J J BEND

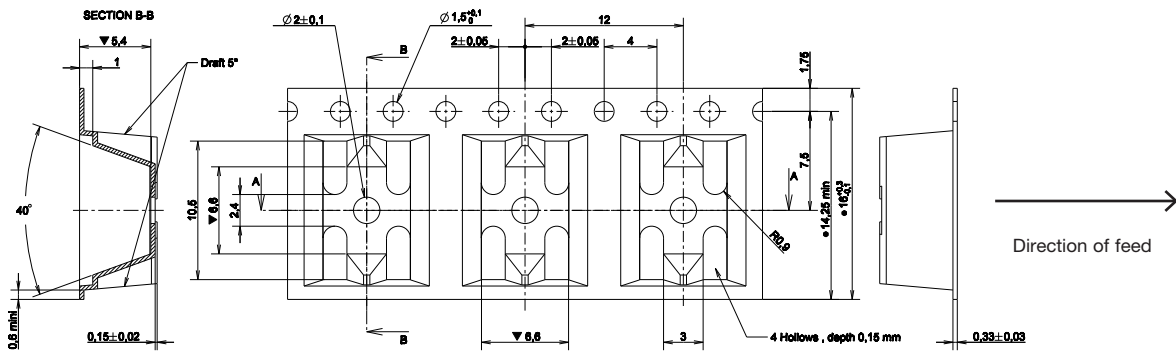


## G GULLWING



## TAPE & REEL

### FOR J AND G TERMINATION



Dimensions are shown: mm  
 Specifications and dimensions subject to change

# KT Series

## Full SMT Top & Side Actuated Sealed Tact Switch



### Features/Benefits

- Full SMT side-actuated tact switch
- SMT top-actuated tact switch with G or J terminations
- High shear force with extended bracket
- Easy to pick & place with top plate tab
- Rubber or hard plastic actuator
- Press fit or snap fit caps
- RoHS compliant and compatible

### Typical Applications

- Telecommunications
- Computer products
- Instrumentation
- Power supply

### Specification

CONTACT ARRANGEMENT: SPST, N.O.  
TERMINALS: SMT termination

### Electrical

CONTACT RATING: 1.0 VA max. @ 32 V AC or DC max.  
ELECTRICAL & MECHANICAL LIFE: 100,000 make-and-break cycles at full load.  
DIELECTRIC STRENGTH: 250 Vrms min. @ sea level.  
CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA.  
INSULATION RESISTANCE: 10<sup>9</sup> Ω min.

### Environmental

OPERATING TEMPERATURES: Ag version: -40°C to 90°C  
Au version: -40°C to 125°C

### Process

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).  
DEGREE OF PROTECTION: IP57; protection against harmful dust deposits, full-scale voltage protection.

### Packaging

Switches supplied in anti-static tape and reels per EIA 481-2. Tape and cover strip are conductive for use near statically sensitive components.

**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

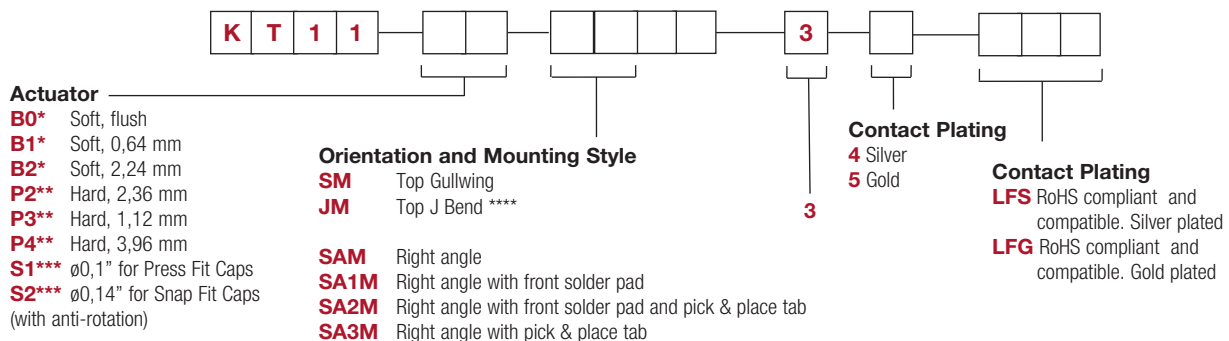
### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.

### SWITCH



\* B0, B1 & B2 available with A, A1 & A3 mounting bracket only.

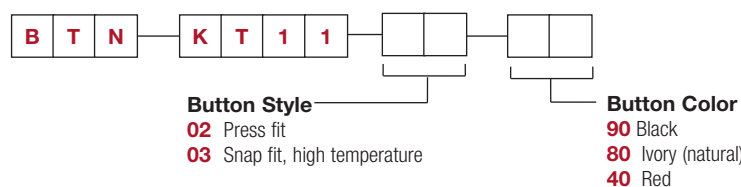
\*\* P2, P3, P4 actuators suitable with A1 & A2 mounting bracket only.

\*\*\* S1 & S2 available with A1 & A2 mounting bracket only.

\*\*\*\* JM available with B0, B1, B2, P2, P3, P4 without mounting bracket.

### BUTTON

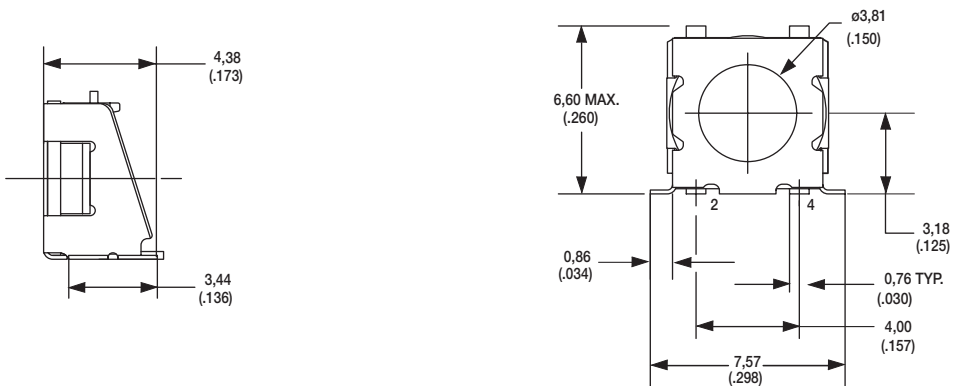
To order buttons in bulk



# KT Series Full SMT Top & Side Actuated Sealed Tact Switch

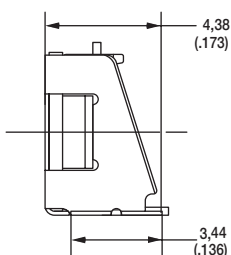
## SERIES

### KT11

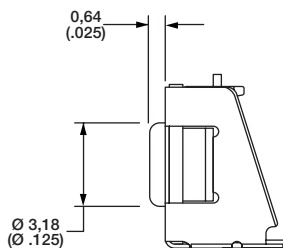


## ACTUATOR

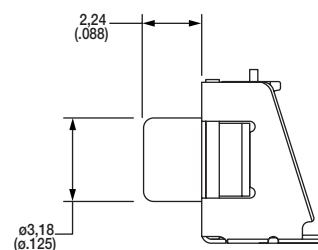
### B0 SOFT, FLUSH\*



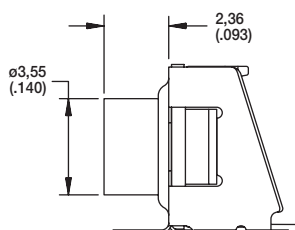
### B1 SOFT, 0,64 mm\*



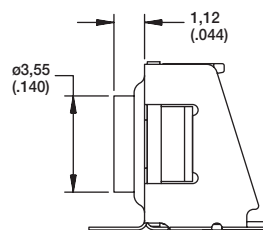
### B2 SOFT, 2,24 mm\*



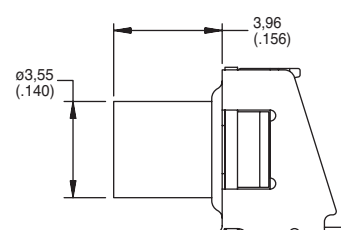
### P2 HARD, 2,36 mm



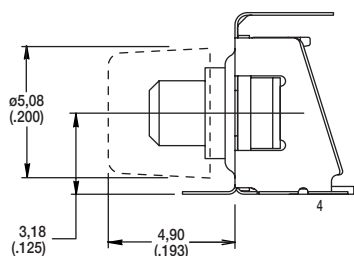
### P3 HARD, 1,12 mm



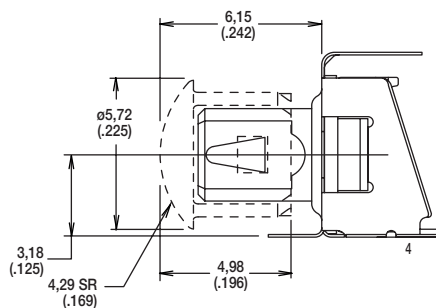
### P4 HARD, 3,96 mm\*\*



### S1 $\phi 0,1$ " FOR PRESS FIT CAPS\*\*\*



### S2 $\phi 0,14$ " FOR SNAP FIT CAPS\*\*\*

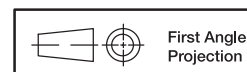


\* B0, B1 & B2 available with A, A1 & A3 mounting bracket only.

\*\* P2, P3, P4 actuators suitable with A1 & A2 mounting bracket only.

\*\*\* S1 & S2 available with A1 & A2 mounting bracket only.

\*\*\*\* JM available with B0, B1, B2, P2, P3, P4 without mounting bracket.

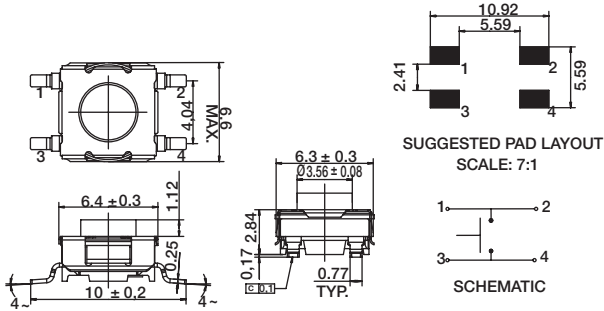


Dimensions are shown: mm  
Specifications and dimensions subject to change

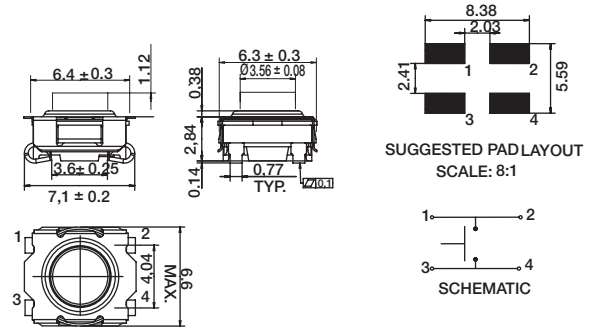
# KT Series Full SMT Top & Side Actuated Sealed Tact Switch

## ORIENTATION & MOUNTING STYLE

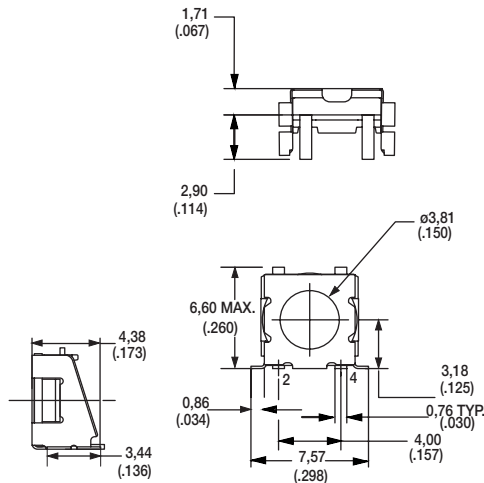
### SM TOP GULLWING



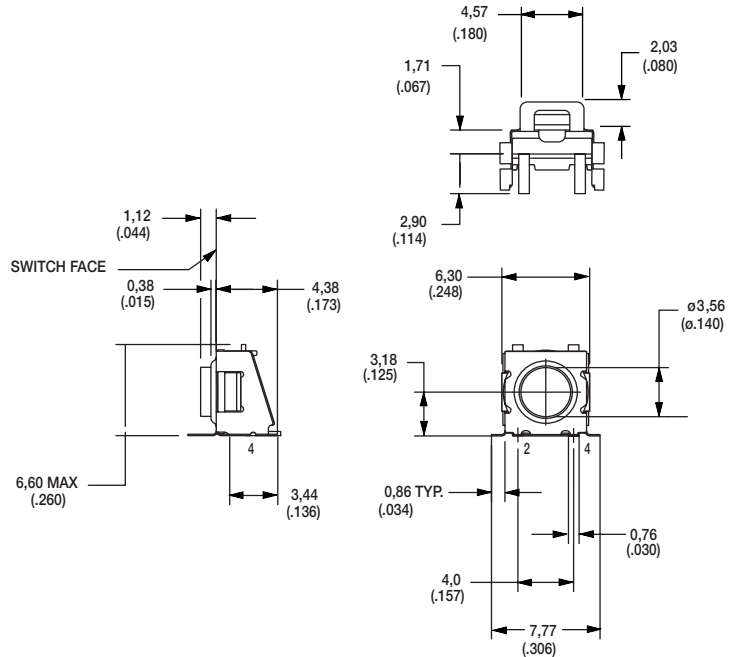
### JM TOP J BEND



### SAM RIGHT ANGLE



### SA1M RIGHT ANGLE WITH FRONT SOLDER PAD



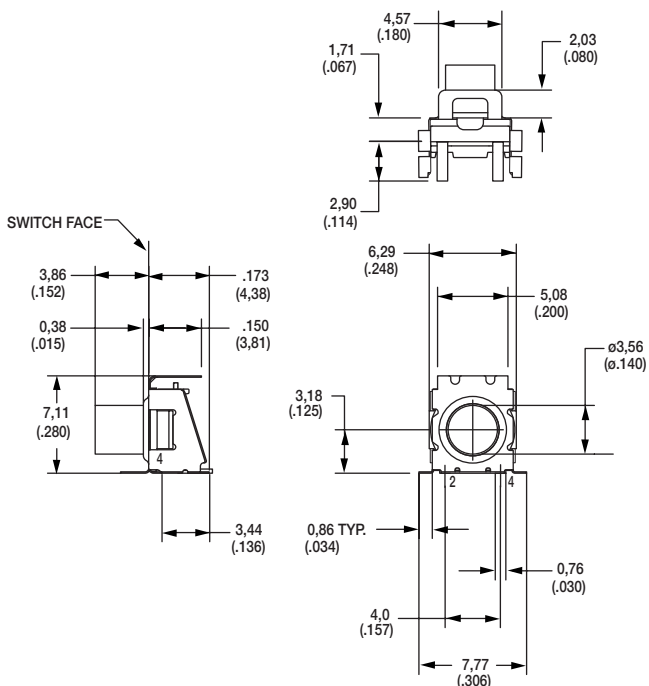
B

Tactile Switches

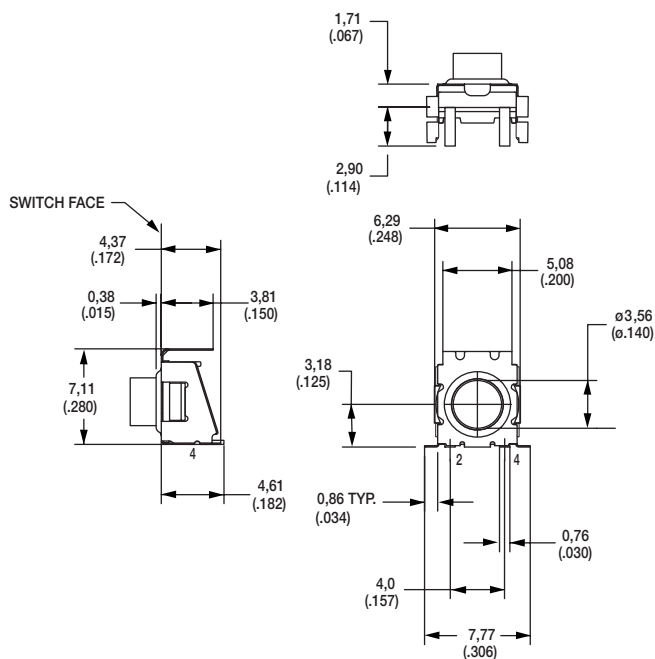
# KT Series Full SMT Top & Side Actuated Sealed Tact Switch

Tactile Switches

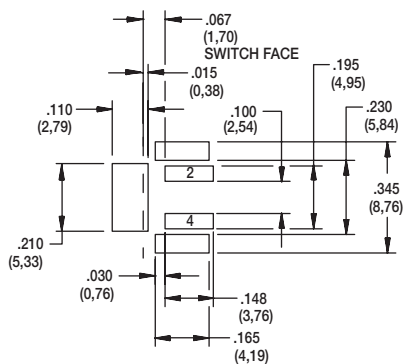
**SA2M** RIGHT ANGLE WITH FRONT SOLDER PAD AND PICK & PLACE TAB



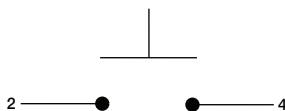
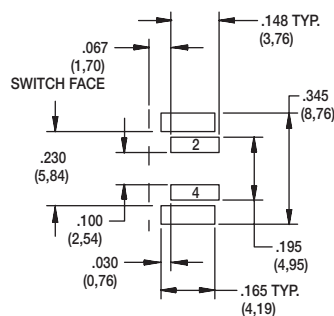
**SA3M** RIGHT ANGLE WITH PICK & PLACE TAB



**PAD LAYOUT  
SA1M & SA2M MOUNTING BRACKET**



**PAD LAYOUT  
SAM & SA3M MOUNTING BRACKET**



SCHEMATIC



Dimensions are shown: mm  
Specifications and dimensions subject to change





# KT Series Full SMT Top & Side Actuated Sealed Tact Switch

## BUTTON

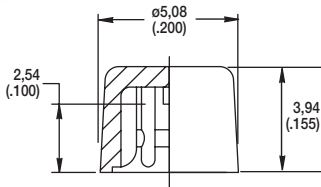
### BUTTON

To order buttons in bulk

#### 02 PRESS FIT

| PART NUMBER           | Internal Part Number | Button Color    |
|-----------------------|----------------------|-----------------|
| <b>BTN KT11 02 80</b> | 5081 01000           | Ivory (Natural) |
| <b>BTN KT11 02 90</b> | 5081 02000           | Black           |
| <b>BTN KT11 02 40</b> | 5081 03000           | Red             |

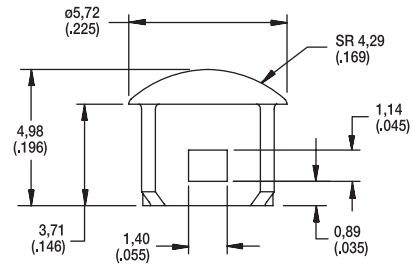
Materials: Nylon  
Finish: Gloss



#### 03 SNAP FIT, HIGH TEMPERATURE

| PART NUMBER           | Internal Part Number | Button Color    |
|-----------------------|----------------------|-----------------|
| <b>BTN KT11 03 80</b> | 685B 01000           | Ivory (Natural) |
| <b>BTN KT11 03 90</b> | 685B 02000           | Black           |

Materials: Nylon  
Finish: Gloss



B

Tactile Switches

# K5AT Illuminated SMT Tact Switch

## Features

- High bright LED's
- Gold plated dome contact offering superior contact reliability in time
- Excellent ergonomics: sharp tactile feel and audible click
- Reduced space usage on board "2 in 1"
- 40 N overload
- Tape and reel
- RoHS compliant and compatible

## Typical Applications

- Application requiring illumination
- Server, storage
- Network infrastructure
- Telecom
- Medical



## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: Normally Open  
 TERMINALS: SMT with positioning pegs;  
 SMT without positioning pegs is available, contact Customer Service

## Electrical

POWER MIN/MAX: 0.02VA / 1.0VA  
 VOLTAGE MIN/MAX: 20mVdc – 32 Vdc  
 CURRENT MIN/MAX: 0.1mA – 100mA  
 CONTACT RESISTANCE: <100m Ω  
 INSULATION RESISTANCE: >1G Ω initial, >10M Ω after damp heat  
 BOUNCE TIME: <10ms

## Mechanical

| Type         | Actuation force (N) | Operating life (operations) | Travel (total travel) mm(mm) |
|--------------|---------------------|-----------------------------|------------------------------|
| K5AT xx 43GP | 4.0                 | 100,000                     | 0.45 (0.95)                  |

<sup>1</sup> Tolerances of operating force FA is ± 25%.

## Environmental

OPERATING TEMPERATURE: -40°C to 125°C  
 STORAGE TEMPERATURE: -55°C to 125°C  
 RELATIVE HUMIDITY: 90 to 96% according to NF EN 60068-2-30  
 PROTECTION: dust protection and flux tight (IP 40)  
 OVERLOAD: 40N min

## Packaging

Standard: 900 pcs per reel; Reel diameter 380 mm  
 Reduced: 180 pcs per reel; Reel diameter 180 mm

## Process

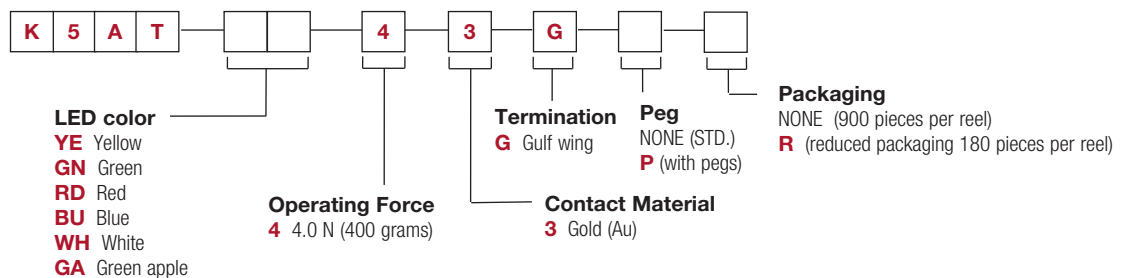
SOLDERING: Compatible with the lead free soldering profile.  
 No washing  
 MSL Level: 5

## Materials

CONTACTS: Au over Ni  
 TERMINALS: Au over Ni  
 HOUSING: Thermoplastic UL94 V0

## How To Order

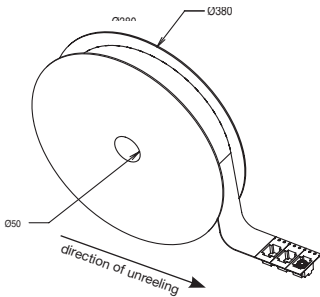
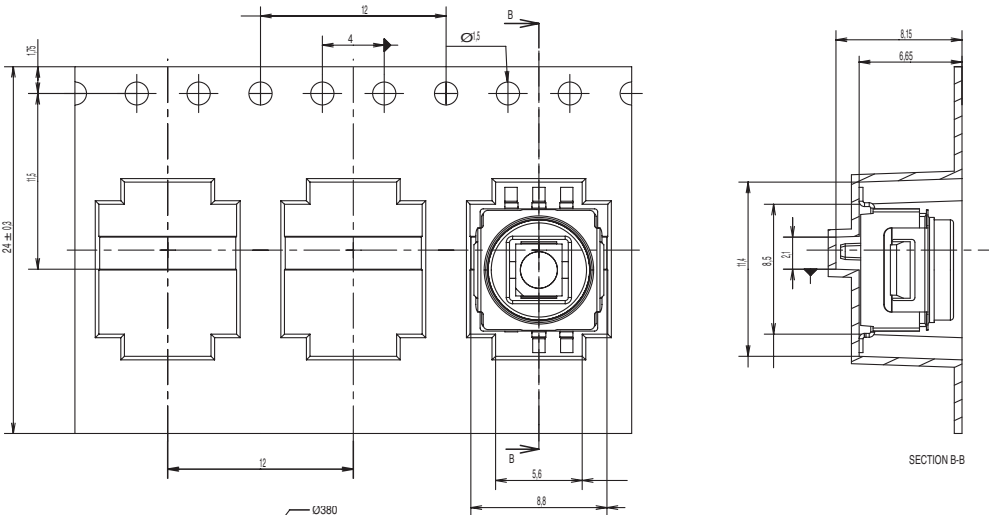
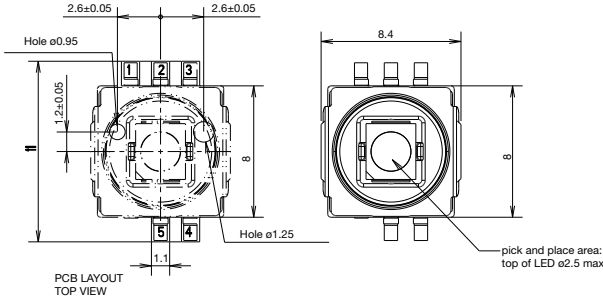
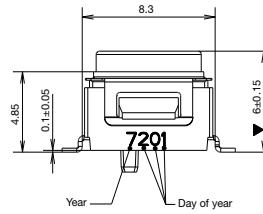
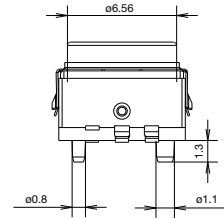
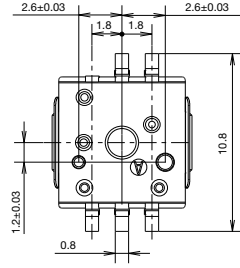
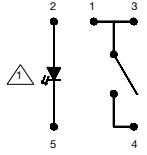
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



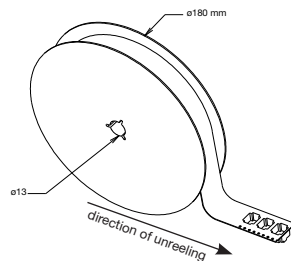
# K5AT Illuminated SMT Tact Switch

## K5AT

ELECTRICAL GRAPH



900 pieces per reel (ø380mm)



180 pieces per reel (ø180mm)



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

# Illuminated SMT Tact Switch with Dedicated LED

## Features

- Various LED options
- No light perturbation
- Sound haptic
- Various climatic classes

## Typical Applications

- Automotive
- Network equipment
- Telecommunications
- Medical equipment
- Industrial controls



Tactile Switches

B

## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make control = SPST, N.O.  
 TERMINALS: Gullwing type for SMT, 2 terminals for LED

## Mechanical

| Type        | Actuation Force (N) | Operating Life (operations) | Travel (Total Travel) mm (mm) |
|-------------|---------------------|-----------------------------|-------------------------------|
| K8xx41G LFS | 4.0                 | 300,000                     | 0.45 (0.95)                   |

Tolerances on actuation force is ± 25%.  
 SEALING LEVEL: IP40

## Illumination Colors

White, blue, pure green, orange, super red  
 LED technical information available on product specification.  
 For any extra color, please contact your sales representative.

## Packaging

In reels of 900 pieces under sealed foil.  
 Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 380 mm.

## Electrical

MAXIMUM POWER: 1.0 VA  
 MAXIMUM VOLTAGE: 32 VDC  
 MINIMUM VOLTAGE: 20 mV  
 MAXIMUM CURRENT: 50 mA  
 MINIMUM CURRENT: 1 mA  
 DIELECTRIC STRENGTH: (50 Hz, 1 min.) ≥ 250 Vrms  
 CONTACT RESISTANCE: < 100mΩ  
 INSULATION RESISTANCE: (100 V, initial stage) > 10<sup>9</sup>Ω  
 BOUNCE TIME: < 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to +85°C

STORAGE TEMPERATURE: -55°C to +85°C

## Process

SOLDERING: Compatible with the lead free soldering profile.  
 No washing  
 MSL level: 5a

## Materials

CONTACTS: Ag over Ni  
 TERMINALS: Ag over Ni  
 HOUSING: Thermoplastic UL94 V0

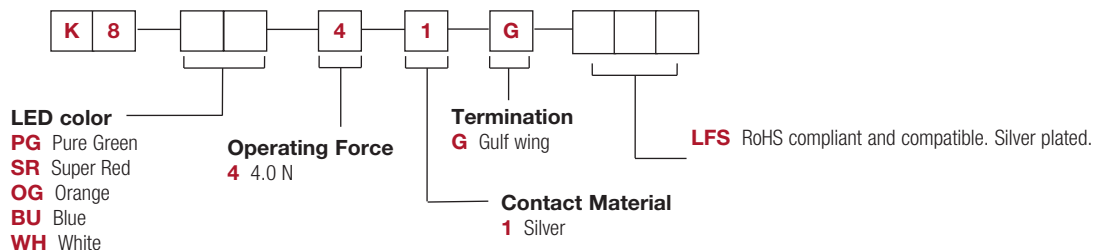
## NOTE:

The specifications show in the datasheet are for reference only and are not valid for design-in work. Please contact your sales representative to request drawings and product specifications.

For systems where reliability and safety are required, please contact your sales representative to secure product integration and function to secure usage.

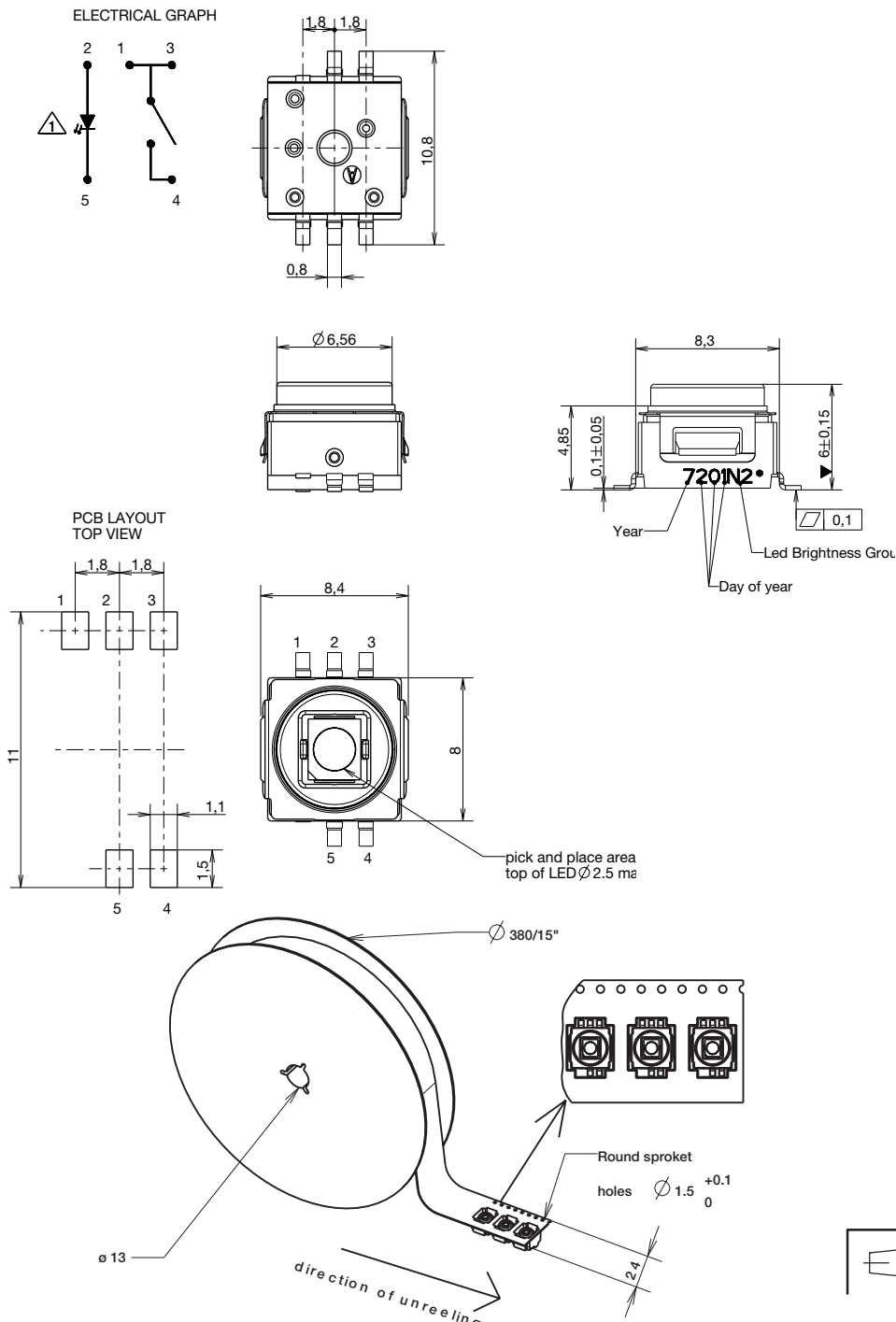
## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.



# K8 Illuminated SMT Tact Switch with Dedicated LED

| PART NUMBER | REF LED           | EMITTED COLOR | LUMINOUS INTENSITY (mcd) $I_f = 20\text{ mA}$ |     | CHROMATICITY COORDINATES OR PEAK WAVE LENGTH (typ) $I_f = 20\text{ mA}$ |      | FORWARD VOLTAGE V $I_f = 20\text{ mA}$ |      |
|-------------|-------------------|---------------|---|-----|---|------|--|------|
|             |                   |               | min   | typ | X   | Y    | min                                    | max  |
| K8WH41G LFS | LW T67C-S2U1-5K8L | WHITE         | 224   | 560 | 0.33  | 0.33 | 3                                      | 4.1  |
| K8BU41G LFS | LB T67C-P2R1-35   | BLUE          | 56  | 140 | 465 nm  |      | 3                                      | 4.1  |
| K8PG41G LFS | LP T676-L1M2-25   | PURE GREEN    | 11.2  | 28  | 562 nm  |      | 1.8                                    | 2.4  |
| K8SR41G LFS | LP T676-Q1R2-1    | SUPER RED     | 71  | 180 | 645 nm  |      | 1.8                                    | 2.3  |
| K8OG41G LFS | LO T676-R1S2-24   | ORANGE        | 112   | 280 | 610 nm  |      | 1.85                                   | 2.35 |



# K5V Illuminated Tact Switch

**C&K** Patented  
No - US 11/363815



## Features

- Gold plated dome contact SPST/SPDT
- Excellent ergonomics
- High bright leds
- Reduced space usage on board
- 40 N overload
- Tape and reel
- RoHS compliant and compatible

## Typical Applications

- When backlighting and switch are required to be a "2 in 1" component
- The dome contact secures a superior contact reliability in time
- The ergonomics of K5V provides a long travel, a sharp tactile feel and an audible click
- Server, storage, automotive, network infrastructure, medical

## Specification

FUNCTION: momentary action

CONTACT ARRANGEMENT: Normally Open + Normally Closed

TERMINALS:

THT: Through hole terminals with positioning pegs

SMT: Surface mount terminals with positioning pegs

PM: Panel mount solder terminals with wire hole

## Mechanical

| Version      | Operating force<br>FA <sup>1</sup> Newtons<br>(grams) | Operating<br>life<br>(operations) | Travel (total<br>travel)<br>mm(mm) |
|--------------|---|-----------------------------------|------------------------------------|
| THT, SMT, PM | 4.0 (400)   | 25,000                            | 1.2 (2.4)                          |

<sup>1</sup> Tolerances of operating force FA is  $\pm 25\%$ .

## Packaging

THT: 60 pieces per tray; 1800 pieces per box

SMT: 330 pieces per reel (reel  $\phi$  360mm); 1320 pieces per box

PM: 60 pieces per tray; 2100 pieces per box

## Electrical

POWER MIN/MAX: 0.02VA / 1.0VA

VOLTAGE MIN/MAX: 20mVdc – 32 Vdc

CURRENT MIN/MAX: 0.1mA – 100mA

CONTACT RESISTANCE: <150m  $\Omega$

INSULATION RESISTANCE: >1G  $\Omega$  initial, >10M  $\Omega$  after damp heat

BOUNCE TIME: <5ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

STORAGE TEMPERATURE: -50°C to 85°C

RELATIVE HUMIDITY: 90 to 96% according to NF EN 60068-2-30

PROTECTION: dust protection and flux tight

OVERLOAD: 40N min

## Process

|     |   |
|-----|---|
| SMT | Soldering: Compatible with the lead free soldering profile<br>No washing                          |
| THT | Soldering: Compatible with the lead free soldering profile<br>No washing                          |
| PM  | Soldering: Low wattage soldering iron (25-50 watts max).<br>Solder time 3 seconds max. No washing |

## Materials

LEAD FREE

CONTACTS: Au over Ni

SOLDERING: Au over Ni

HOUSING: Thermoplastic UL94 V0

B

B

Tactile Switches

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

Tactile Switches **B**



**Actuator**

- 1** without snap-in, clear (THT and PM version only)
- 2** with snap-ins, clear for light pipe extension (THT and PM version only)
- 4** without snap-in, light grey (SMT version only)
- 5** with snap-ins, light grey for light pipe extension (SMT version only)

**Actuator color/LED color**

- BA** Translucid/Blue-Amber
- GN** Translucid/Green
- BU** Translucid/Blue
- RG** Translucid/Red-Green
- WX** Translucid/White
- YG** Translucid/Yellow-Green
- CL** Transparent/No LED
- 90** Black Actuator/No LED

**Operating Force**

- 4** 4.0 N (400 grams)

**Termination**

- G** Surface mount
- P** Panel mount
- T** Through-hole 3.5mm
- S** Through-hole 2.1mm

**Contact Material**

- 3** Gold (Au)

**Option**

- NONE** General version (260°C)
- H** High temperature version with robust design (270°C) \*

**Option**

- NONE** No option
- P3** Terminal 3 is cut
- P4** Terminal 4 is cut
- P13** Terminal 1 & 3 is cut
- P14** Terminal 1 & 4 is cut

*\* When high temperature version with robust design is requested, K5V1 and K5V2 THT version are the right options*



**Option**

- 4** High temperature SMT PIP (270°C)

**Actuator color/LED color**

- BA** Translucid/Blue-Amber
- GN** Translucid/Green
- BU** Translucid/Blue
- RG** Translucid/Red-Green
- WX** Translucid/White
- YG** Translucid/Yellow-Green
- CL** Transparent/No LED
- 90** Black Actuator/No LED

**Operating Force**

- 4** 4.0 N (400 grams)

**Termination**

- S** 2.1mm
- V** 2.5mm
- W** 3.0mm
- X** 3.5mm

**Contact Material**

- 3** Gold (Au)

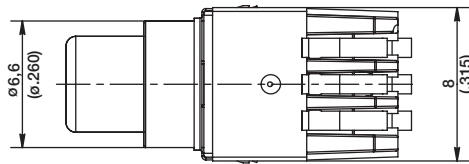
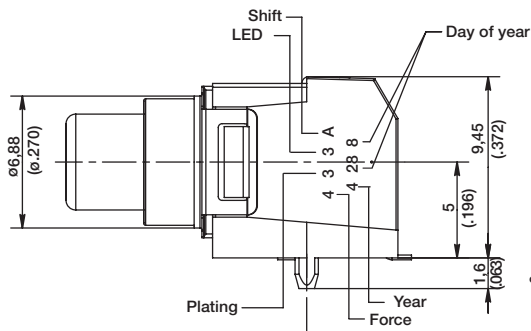
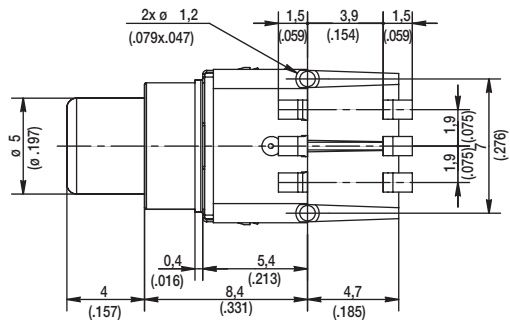
**Option**

- NONE** No option
- P3** Terminal 3 is cut
- P4** Terminal 4 is cut

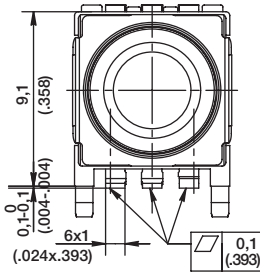
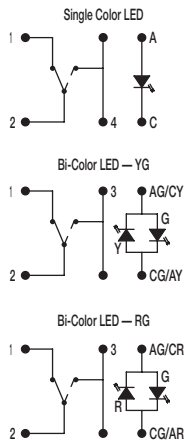
# K5V Illuminated Tact Switch

**C&K** Patented  
No - US 11/363815

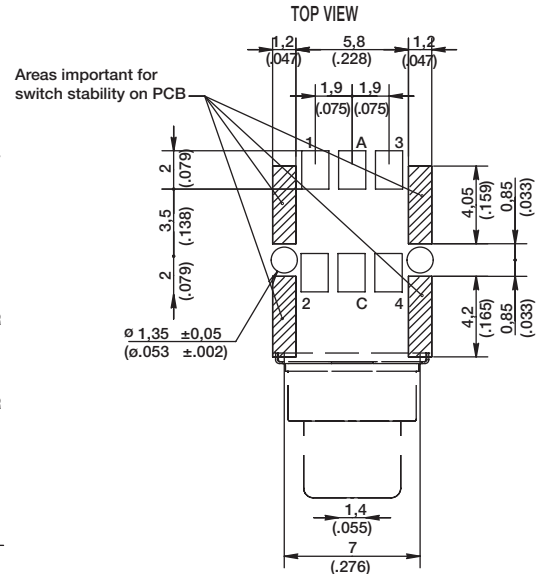
## K5V SMT



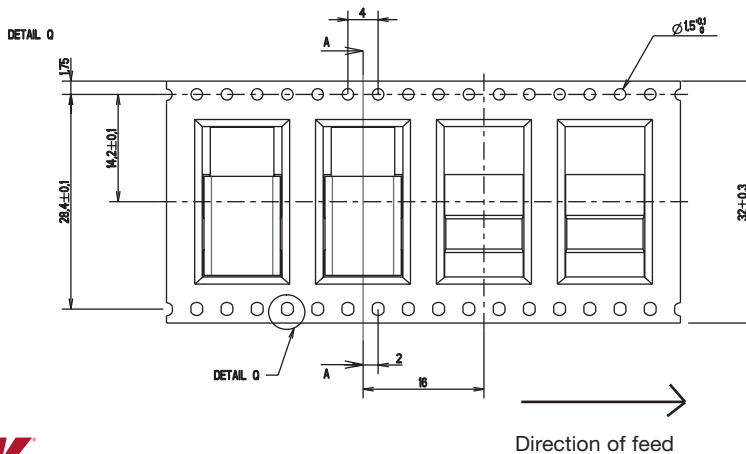
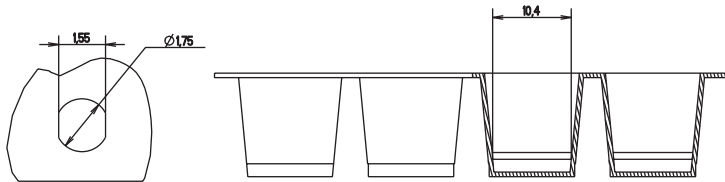
## ELECTRICAL DIAGRAM



## RECOMMENDED PCB LAYOUT ( WITH HOLES )



## TAPE & REEL



Dim Dimensions are shown in mm  
Spec Dimensions are shown in inches

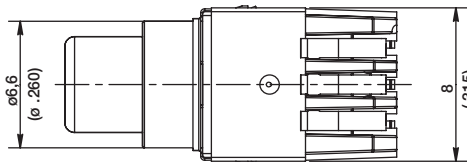
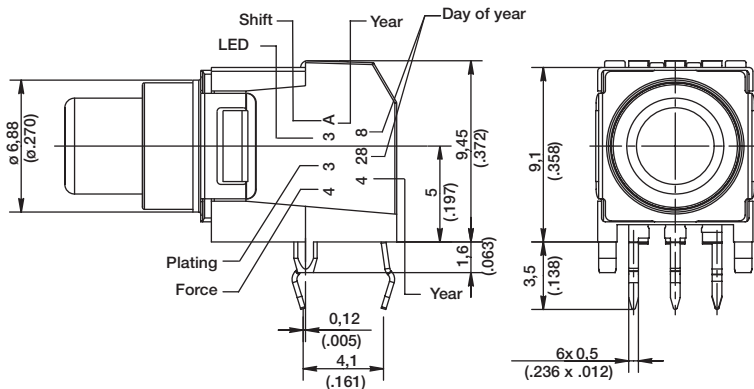
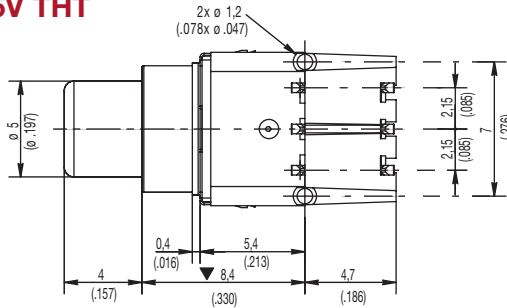


13 May 22

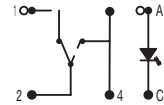
Direction of feed



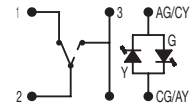
## K5V THT



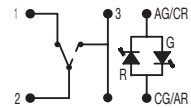
### ELECTRICAL DIAGRAM



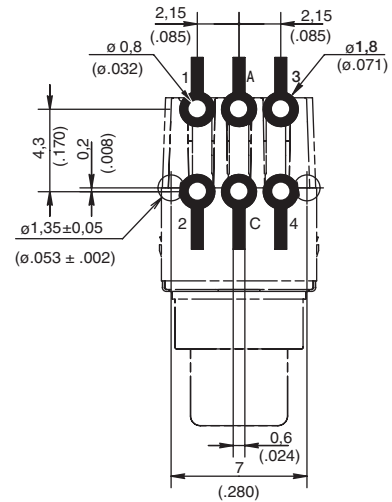
#### Bi-Color LED - YG



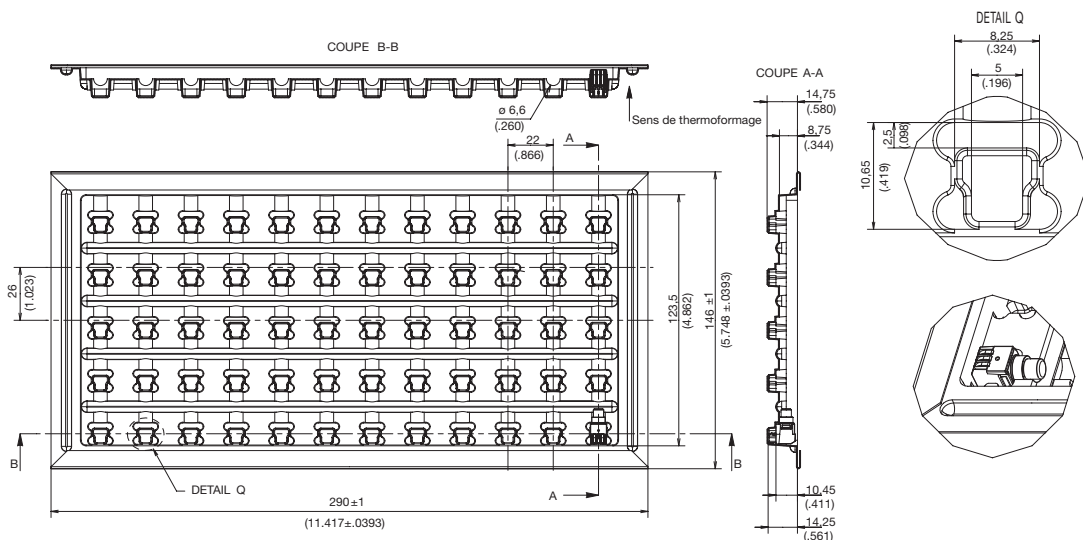
#### Bi-Color LED - RG



### RECOMMENDED PCB LAYOUT ( WITH HOLES ) TOP VIEW



## TRAY

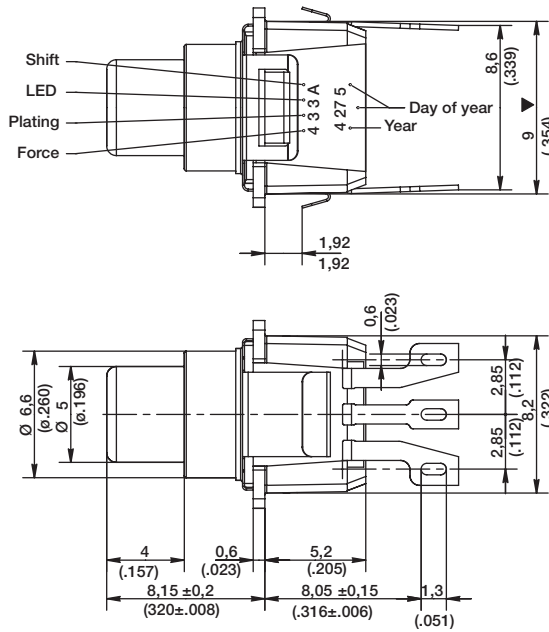


# K5V Illuminated Tact Switch

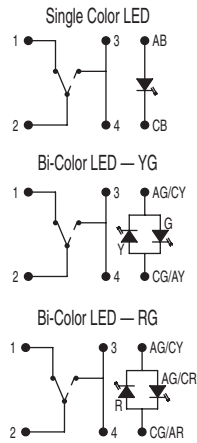
**C&K** Patented  
No - US 11/363815

## K5V PM

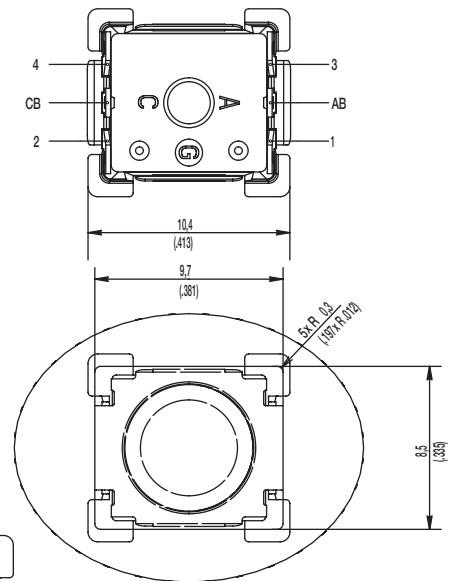
### PRODUCT IDENTIFICATION AND DATE CODES



### ELECTRICAL DIAGRAM

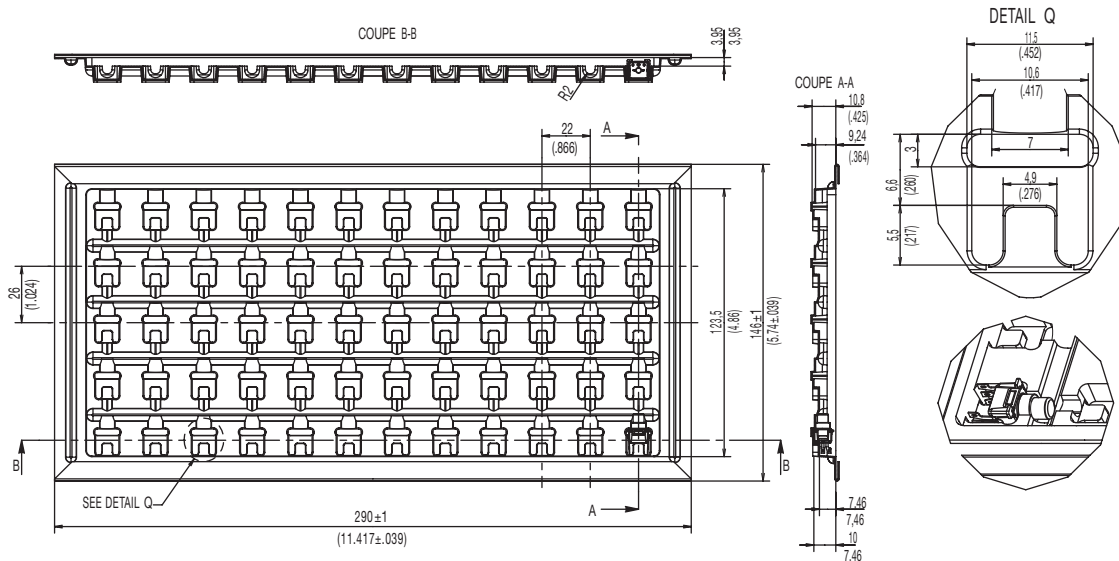


### TERMINAL REFERENCES



## TRAY

SUITABLE FOR PANEL THICKNESS OF 1.8MM MAX



# KSF & KSFI Series Soft Actuated Tact Switch



## Features/Benefits

- Soft actuated switch
- Sealed front end
- Top and side actuated

## Typical Applications

- Low profile keyboards
- Automotive interfaces
- Industrial control

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: THT pins

## Mechanical

| Type               | Force (N)  | Operating life (operations) | Travel (mm) |
|--------------------|------------|-----------------------------|-------------|
| KSF0M211LFTR       | 1.5 ± 0.5  | 100,000                     | 0.25 ± 0.1  |
| KSF0M311LFTR       | 1.9 ± 0.5  | 100,000                     | 0.25 ± 0.1  |
| KSF0M411LFTR       | 3.0 ± 0.75 | 100,000                     | 0.25 ± 0.1  |
| KSF0M511LFTR       | 5.2 ± 1.0  | 100,000                     | 0.25 ± 0.1  |
| KSFI0V91170SH LFTR | 3.4 ± 1.5  | 100,000                     | 0.65 ± 0.25 |
| KSF0M212 LFT       | 1.6 ± 0.4  | 300,000                     | 0.25 ± 0.1  |
| KSFI0M412 70SHLFT  | 3.2 ± 0.8  | 100,000                     | 0.75 ± 0.25 |

Overload resistance: 40N, 1 time  
Sealing: IP60 or IP67

**NOTE:** Other configurations of haptics and terminals are available upon demand. Please also refer to KSF and KSFI Mk2 catalogues pages for other options.

This product is designed and manufactured for general electronic devices. For systems where reliability and safety are required, please contact your sales representative to secure product integration and function to secure usage.

## Electrical

|   | Silver | Gold   |
|---|--------|--------|
| MAXIMUM POWER:  | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE:  | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE:  | 20 mV  | 20 mV  |
| MAXIMUM CURRENT:  | 50 mA  | 10 mA  |
| MINIMUM CURRENT:  | 1 mA   | 1 mA   |
| DIELECTRIC STRENGTH (50 Hz, 1 min.): > 250 Vrms                   |        |        |
| CONTACT RESISTANCE: < 100 m Ω                                     |        |        |
| INSULATION RESISTANCE (100 V, initial stage): > 10 <sup>9</sup> Ω |        |        |
| BOUNCE TIME: < 1 ms   |        |        |

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -55°C to 85°C | -40°C to 125°C |

## Process

SOLDERING

## Packaging

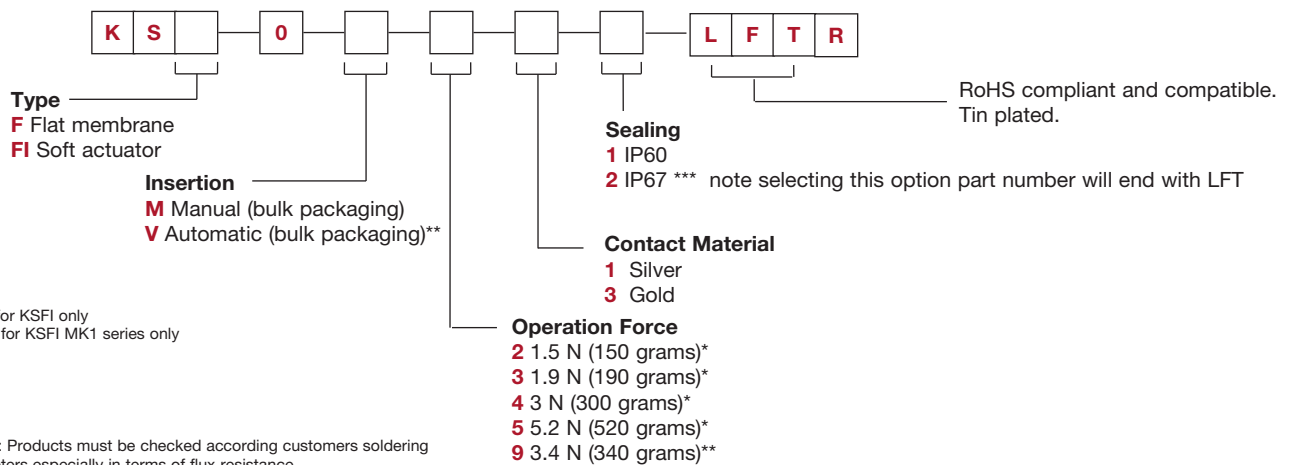
In boxes of 250 pieces (V type) or 500 pieces (M type).

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

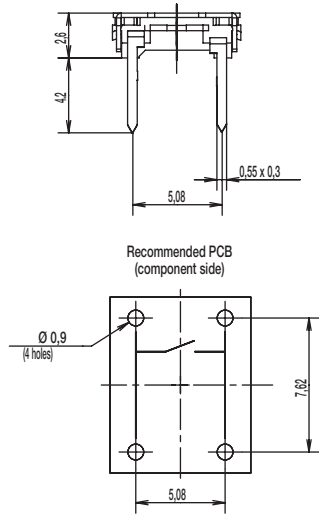
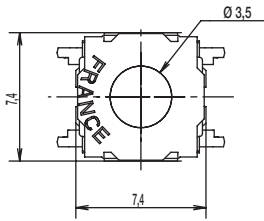
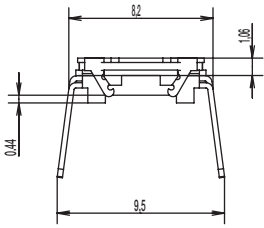
For any part number different from those listed above, please consult your local representative.



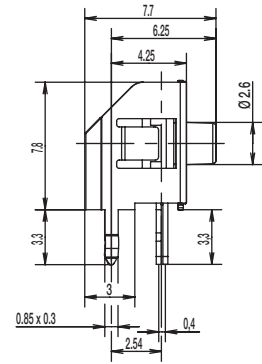
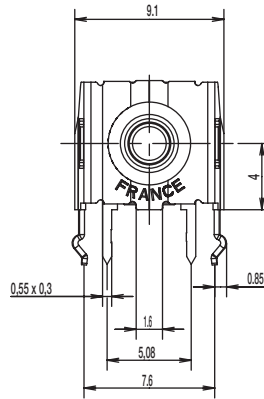
**NOTE:** Products must be checked according customers soldering parameters especially in terms of flux resistance.

# KSF & KSFI Series Soft Actuated Tact Switch

## KSF



## KSFI 0V



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSA & KSL Series Sealed Tact Switch



## Features/Benefits

- Designed for automatic or manual insertion
- Cambered terminals to ensure self retention
- Top or side actuated
- Large choice of caps
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Industrial
- Telecommunication networks

## Specification

CONTACT ARRANGEMENT: SPST, N.O.  
DOUBLE OVERMOLDING ON TERMINAL  
SEALING: IP60  
TERMINALS: PC pins, ground pin optional

## Mechanical

| Type     | Actuation force N | Operating life (operations) | Travel to make |
|----------|-------------------|-----------------------------|----------------|
| KSA0M211 | 1,4 ± 0,4         | 100,000                     | 0,5 ± 0,2      |
| KSA0M311 | 1,4 ± 0,4         | 1,000,000                   | 0,5 ± 0,2      |
| KSA0M411 | 3 ± 0,75          | 100,000                     | 0,6 ± 0,2      |
| KSA0M511 | 5 ± 1,5           | 100,000                     | 0,7 ± 0,2      |
| KSA0M911 | 3 ± 0,75          | 500,000                     | 0,6 ± 0,2      |
| KSL0M211 | 1,4 ± 0,4         | 100,000                     | 0,5 ± 0,2      |
| KSL0M311 | 1,4 ± 0,4         | 1,000,000                   | 0,5 ± 0,2      |
| KSL0M411 | 3 ± 0,75          | 100,000                     | 0,6 ± 0,2      |
| KSL0M511 | 5 ± 1,5           | 100,000                     | 0,7 ± 0,2      |

**NOTE:** Other versions in terms of force, termination length and corrosion protection available. Please contact your sales representative.  
This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment. Please contact your sales representative to get contractual specification package.

## Electrical

|                                | Silver              | Gold   |
|--------------------------------|---------------------|--------|
| MAXIMUM POWER:                 | 1 VA                | 0.2 VA |
| MAXIMUM VOLTAGE:               | 32 VDC              | 32 VDC |
| MINIMUM VOLTAGE:               | 20 mV               | 20 mV  |
| MAXIMUM CURRENT:               | 50 mA               | 10 mA  |
| MINIMUM CURRENT:               | 1 mA                | 1 mA   |
| DIELECTRIC STRENGTH:           | 250 Vrms            |        |
| CONTACT RESISTANCE:            | ≤ 100m Ω            |        |
| INSULATION RESISTANCE (100 V): | ≥ 10 <sup>9</sup> Ω |        |
| BOUNCE TIME:                   | ≤ 1 ms              |        |

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -40°C to 85°C | -55°C to 125°C |

## Process

Wave soldering compatible with lead free soldering profile.

## Packaging

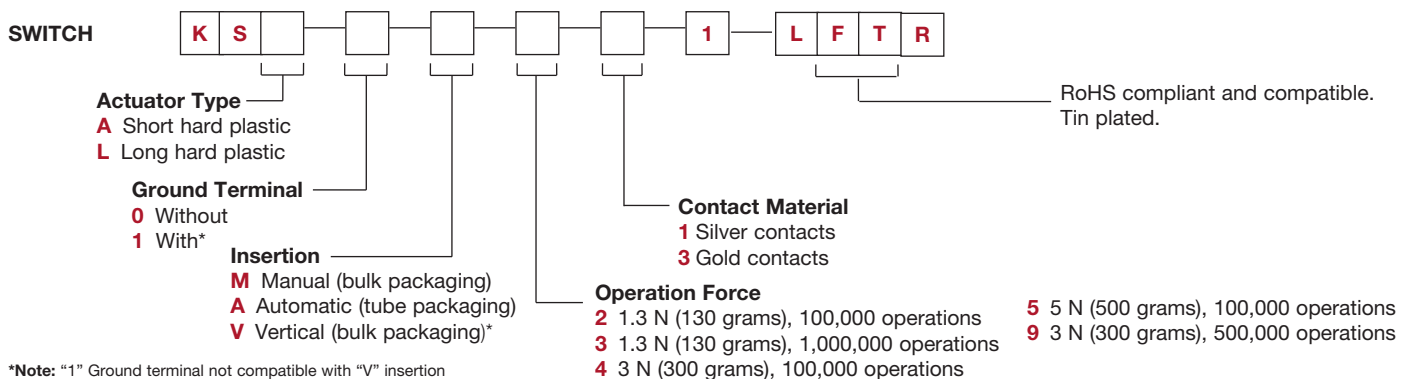
Can be delivered in tubes of 65 pieces for automatic insertion or in boxes of 500 pieces for manual insertion (250 pieces for KSL, KSLV, KSAV).

## How To Order

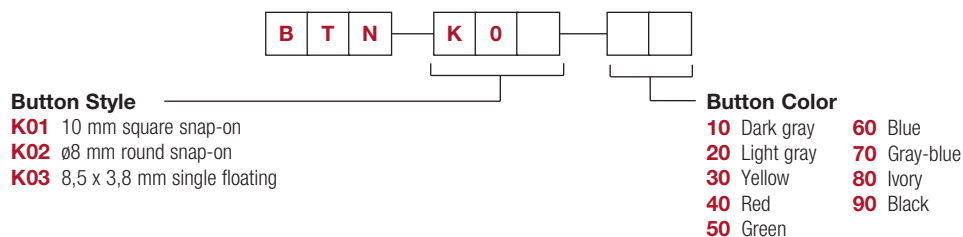
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However, please note that all the combinations of these options are not feasible.

For any part number different from those listed above, please consult your local representative.



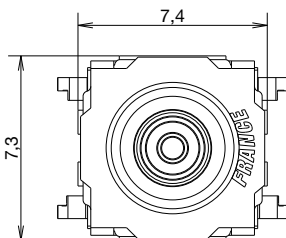
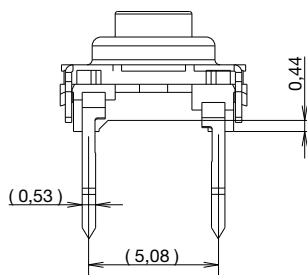
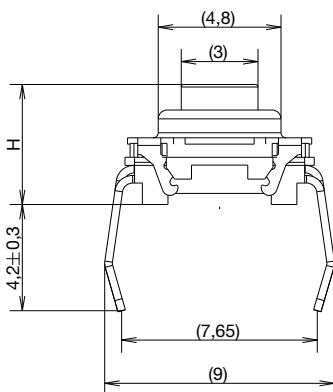
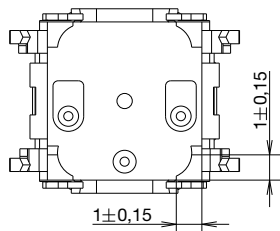
**BUTTONS** Buttons must be ordered separately and will be supplied in bulk.



# KSA & KSL Series Sealed Tact Switch

ACTUATOR TYPE

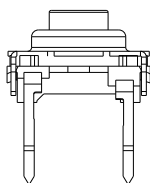
## KSA & KSL



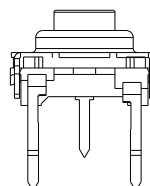
| Type | H mm    | inch   |
|------|---------|--------|
| KSA  | 4,7±0,2 | (.185) |
| KSL  | 9,9±0,2 | (.390) |

GROUND TERMINAL

**0** WITHOUT



**1\*** WITH



\*Not compatible with "V" insertion

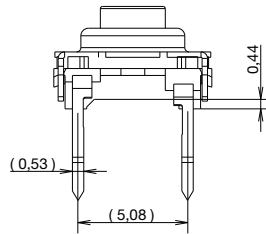
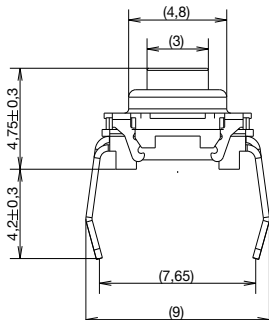


Dimensions are shown: mm  
Specifications and dimensions subject to change

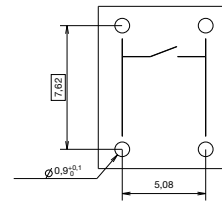
# KSA & KSL Series Sealed Tact Switch

## INSERTION

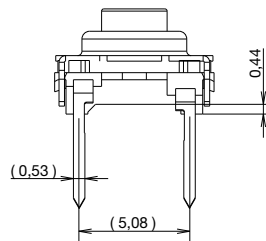
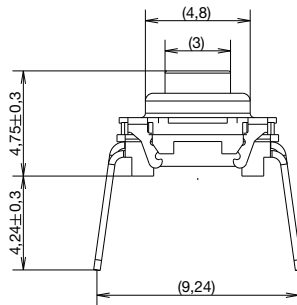
### M MANUAL (BULK PACKAGING)



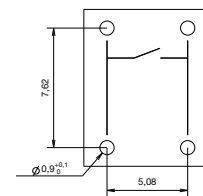
### PCB LAYOUT



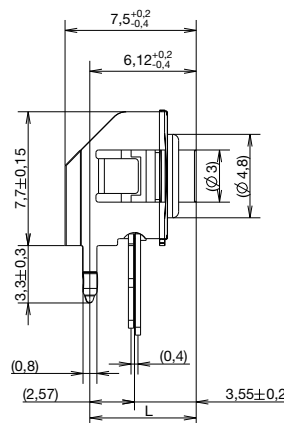
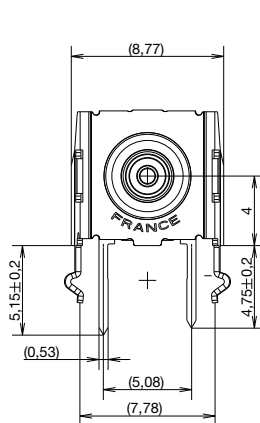
### A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)



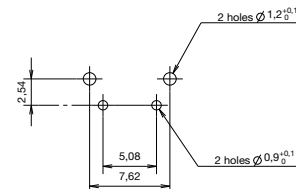
### PCB LAYOUT



### V VERTICAL



### PCB LAYOUT

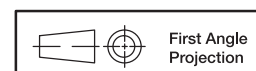


### DIMENSION L

| Type  | L mm | inch |
|-------|------|------|
| KSA0V | 5,8  | .228 |
| KSL0V | 11,1 | .437 |

## OPERATING FORCE

| OPTION CODE | OPERATING FORCE                           |
|-------------|---|
| <b>2</b>    | 1.3 N (130 grams)<br>100,000 operations   |
| <b>3</b>    | 1.3 N (130 grams)<br>1,000,000 operations |
| <b>4</b>    | 3.0 N (300 grams)<br>100,000 operations   |
| <b>5</b>    | 5.0 N (500 grams)<br>100,000 operations   |
| <b>9</b>    | 3.0 N (300 grams)<br>500,000 operations   |



First Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

## CONTACT MATERIAL



| OPTION CODE | CONTACT MATERIAL |
|-------------|------------------|
| <b>1</b>    | Silver contacts  |
| <b>3</b>    | Gold contacts    |

Tactile Switches

B

## SEALING



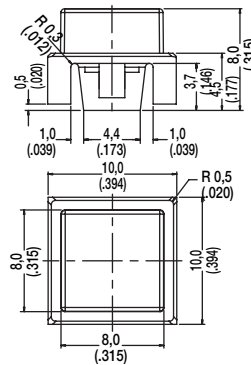
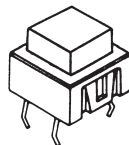
| OPTION CODE | SEALING            |
|-------------|--------------------|
| <b>1</b>    | Sealing level IP60 |

## BUTTONS

Buttons must be ordered separately and will be supplied in bulk.

| BUTTON TYPE | KSA | KSL | KSAV | KSLV |
|-------------|-----|-----|------|------|
| <b>K01</b>  | X   |     |      |      |
| <b>K02</b>  | X   |     |      |      |
| <b>K03</b>  | X   | X   | X    | X    |

**K01**

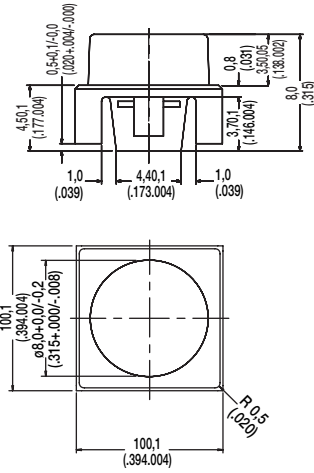
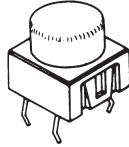


Dimensions are shown: mm  
Specifications and dimensions subject to change

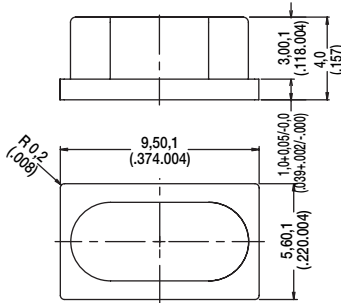


# KSA & KSL Series Sealed Tact Switch

**K02**



**K03**



**B**

Tactile Switches

# KSA & KSL MKII Series High Performance Sealed Tact Switch

## Features/Benefits

- Highest tact switch sealing performance
- Improved sealing through a modification of the crimping technique and to a double overmolding of the terminal
- Totally sealed
- Up to 1M operations
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Industrial
- Telecommunication networks
- Household appliances
- Heating control systems



## Specification

CONTACT ARRANGEMENT: SPST, N.O.  
 TERMINALS: PC pins  
 SEALING: IP65  
 Double overmold on terminals

## Mechanical

| Type     | Actuation force<br>N (grams) | Operating life<br>(operations) | Travel to<br>make |
|----------|------------------------------|--------------------------------|-------------------|
| KSA0M212 | 1,3 ± 0,3                    | 100,000                        | 0,5 ± 0,15        |
| KSA0M312 | 1,3 ± 0,3                    | 1,000,000                      | 0,5 ± 0,15        |
| KSA0M412 | 3,25 ± 0,5                   | 100,000                        | 0,6 ± 0,25        |
| KSA0M512 | 5 ± 1,25                     | 100,000                        | 0,7 ± 0,25        |

## Packaging

Delivered in boxes of 500 pieces (250 pieces for KSL)

**NOTE:** Specifications listed above are for switches with standard options.  
 For information on specific and custom switches, consult Customer Service Center.

Other versions in terms of force, termination length and corrosion protection available.  
 Please contact your sales representative.

This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment.  
 Please contact your sales representative to get contractual specification package.

## Electrical

|                                | Silver              | Gold   |
|--------------------------------|---------------------|--------|
| MAXIMUM POWER:                 | 1 VA                | 0.2 VA |
| MAXIMUM VOLTAGE:               | 32 VDC              | 32 VDC |
| MINIMUM VOLTAGE:               | 20 mV               | 20 mV  |
| MAXIMUM CURRENT:               | 50 mA               | 10 mA  |
| MINIMUM CURRENT:               | 1 mA                | 1 mA   |
| DIELECTRIC STRENGTH:           | ≥ 250 Vrms          |        |
| CONTACT RESISTANCE:            | ≤ 100m Ω            |        |
| INSULATION RESISTANCE (100 V): | ≥ 10 <sup>9</sup> Ω |        |
| BOUNCE TIME:                   | ≤ 1 ms              |        |

## Environmental

|                        | Silver        | Gold           |
|------------------------|---------------|----------------|
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -40°C to 85°C | -55°C to 125°C |

## Process

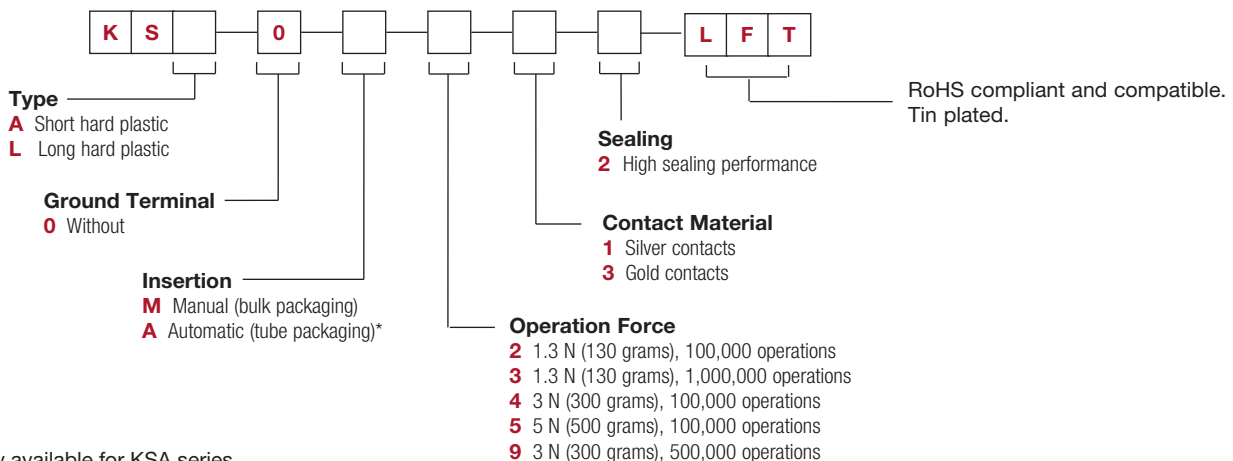
Wave soldering compatible with lead free soldering profile.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**However, please note that all the combinations of these options are not feasible.**

**For any part number different from those listed above, please consult your local representative.**

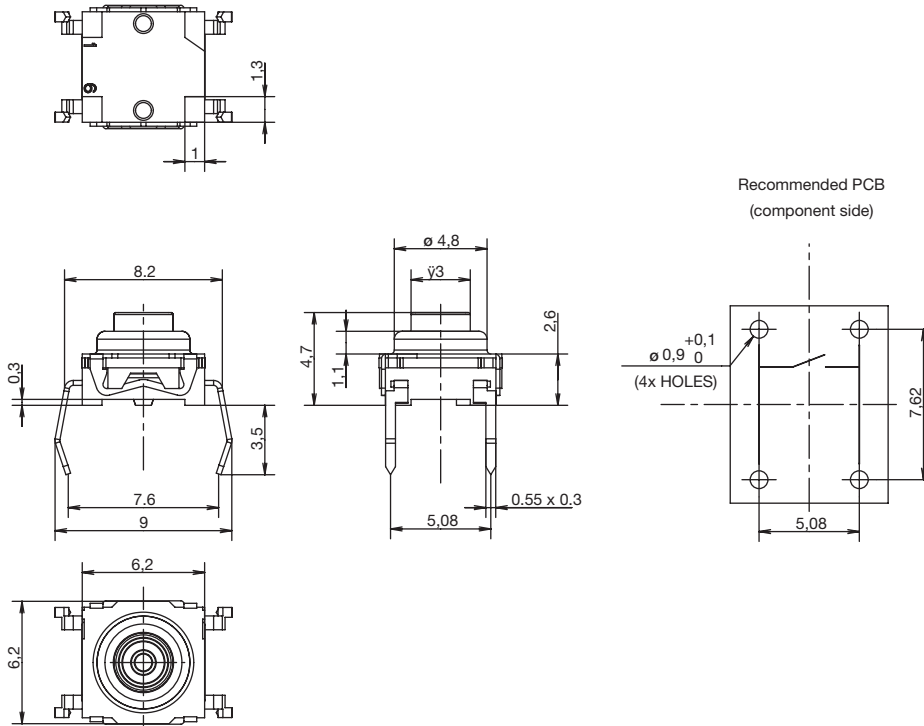


\* only available for KSA series

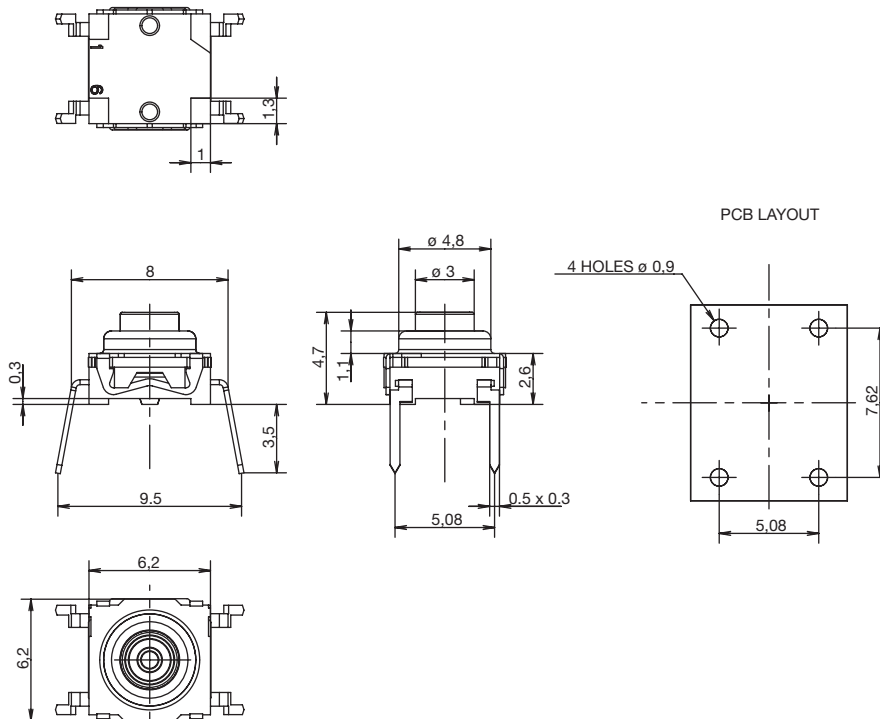
# KSA & KSL MKII Series High Performance Sealed Tact Switch

TYPE 

## KSA & KSL MANUAL INSERTION



## KSA & KSL AUTOMATIC INSERTION



Dimensions are shown: mm  
Specifications and dimensions subject to change

# KSJ Series Spherical Actuator Tact Switches

## Features/Benefits

- Spherical actuator allows actuation force off center  $\pm 30^\circ$  with regard to vertical
- RoHS compliant and compatible
- Designed for mechanisms
- Compliant side actuation

## Typical Applications

- Automotive
- Cranes, off road, railway
- Factory automation
- Security systems



## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
 DISTANCE BETWEEN BUTTON CENTERS (min.): 7.62 (0.300)  
 TERMINALS: PC pins  
 SEALING: IP60

## Environmental

|                        |               |                |
|------------------------|---------------|----------------|
|                        | Silver        | Gold           |
| OPERATING TEMPERATURE: | -40°C to 85°C | -40°C to 125°C |
| STORAGE TEMPERATURE:   | -40°C to 85°C | -55°C to 125°C |

## Packaging

Delivered in boxes of 250 pieces.

## Mechanical

| Type         | Actuation force<br>N (grams) | Operating life<br>(operations)<br>axial | Operating life<br>(operations)<br>radial | Travel to<br>make (mm) |
|--------------|------------------------------|---|--|------------------------|
| KSJ0M21160SH | 2 $\pm$ 0,5                  | 100,000                                 | 30,000                                   | 0,6 $\pm$ 0,3          |
| KSJ0M41180SH | 3,0 $\pm$ 0,8                | 100,000                                 | 30,000                                   | 0,55 $\pm$ 0,25        |
| KSJ0M21180SH | 2 $\pm$ 0,5                  | 100,000                                 | 30,000                                   | 0,35 $\pm$ 0,2         |
| KSJ0M91180SH | 3,9 $\pm$ 0,8                | 100,000                                 | 30,000                                   | 0,7 $\pm$ 0,25         |

## Electrical

|   |        |        |
|---|--------|--------|
|   | Silver | Gold   |
| MAXIMUM POWER:  | 1 VA   | 0.2 VA |
| MAXIMUM VOLTAGE:  | 32 VDC | 32 VDC |
| MINIMUM VOLTAGE:  | 20 mV  | 20 mV  |
| MAXIMUM CURRENT:  | 50 mA  | 10 mA  |
| MINIMUM CURRENT:  | 1 mA   | 1 mA   |
| DIELECTRIC STRENGTH (50 Hz, 1 min.): $\geq$ 250 Vrms      |        |        |
| CONTACT RESISTANCE: $\leq$ 100m $\Omega$                  |        |        |
| INSULATION RESISTANCE (100V): $\geq$ 10 <sup>9</sup> ohms |        |        |
| BOUNCE TIME: $\leq$ 1 ms                                  |        |        |

## Process

Wave soldering, compatible with lead free soldering profile.

**NOTE:** Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment. Please contact your sales representative to get contractual specification package.

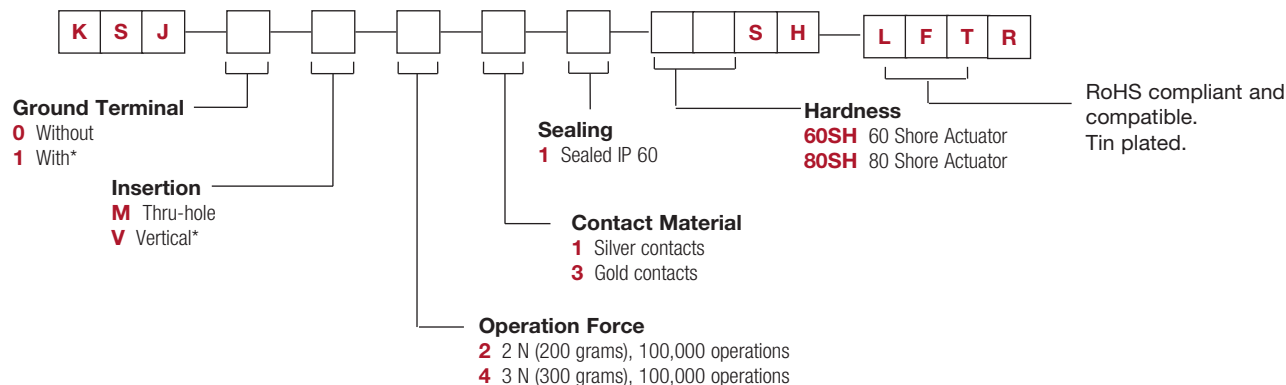
\* Please contact your C&K representative for any question regarding the product integration.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

However, please note that all the combinations of these options are not feasible.

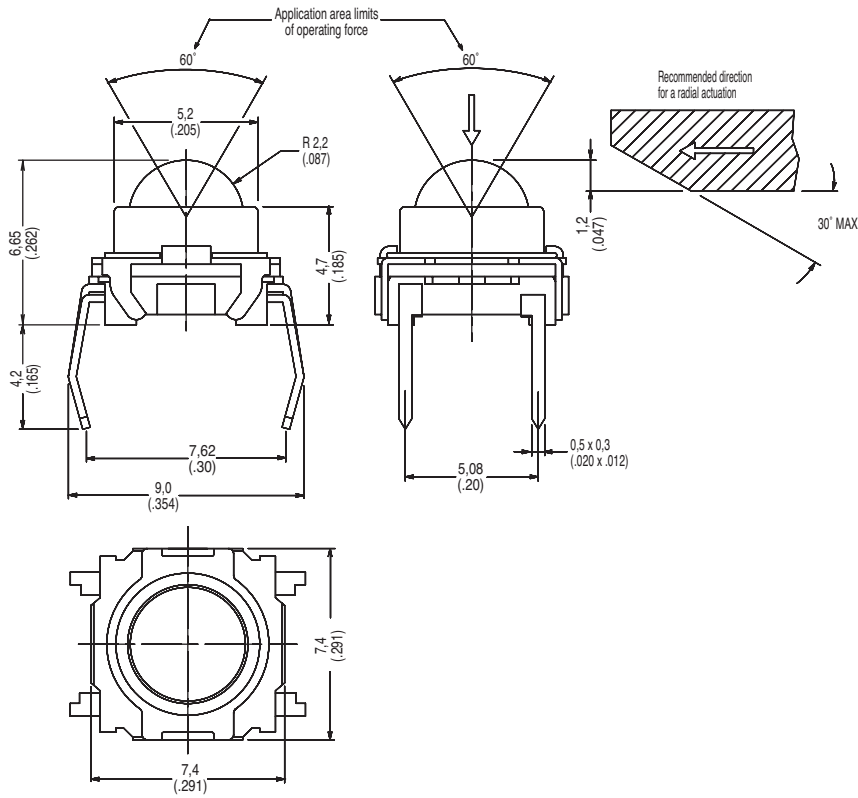
For any part number different from those listed in the table above, please consult your local representative.



\*Note: "1" ground terminal option not available with "V" version. The bracket for the "V" version plays this role.

# KSJ Series Spherical Actuator Tact Switches

KSJ



KSJ0M211

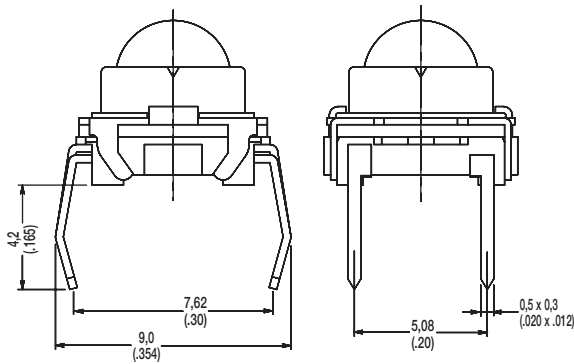
B

B

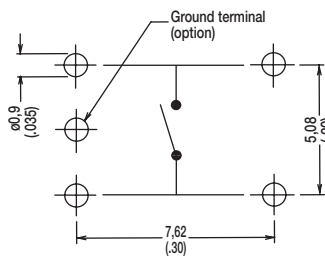
Tactile Switches

## INSERTION

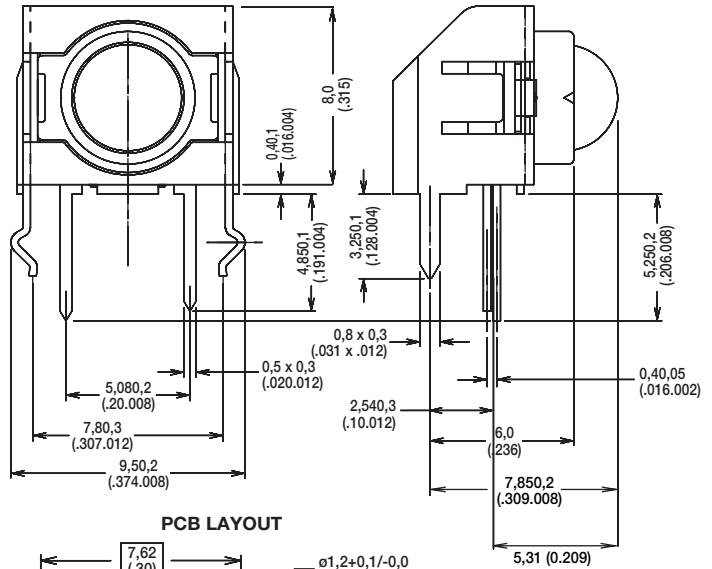
M THRU-HOLE



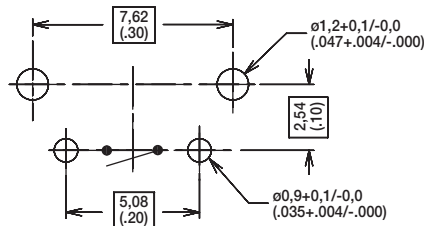
PCB LAYOUT



V VERTICAL



PCB LAYOUT



26 jul 16

B-133

Dimensions are shown: mm  
Specifications and dimensions subject to change

www.ckswitches.com

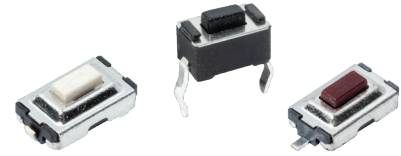
# PTS636 Series 6.0 x 3.5 Top Actuated

## Features/Benefits

- 6.0 x 3.5 mm footprint
- Multiple heights
- THT or SMT type

## Typical Applications

- IoT devices
- Home automation
- Remote controls



## Specification

FUNCTION: Momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
TERMINALS: THT, J, G and F type for SMT

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
MAXIMUM CURRENT DC: 50 mA  
DIELECTRIC STRENGTH: 250 VA C (1mn)  
CONTACT RESISTANCE:  $\leq 100$  m  $\Omega$   
INSULATION RESISTANCE:  $\geq 100$  M  $\Omega$   
BOUNCE TIME:  $\leq 10$  ms  
TRAVEL:  $0.25 \pm 0.1$  mm

## Environmental

OPERATING TEMPERATURE:  $-40^{\circ}\text{C}$  to  $90^{\circ}\text{C}$

## Life Cycles

| Height (mm)   | Force            | Operating Life |
|---------------|------------------|----------------|
| 2.5mm         | 180gf $\pm$ 30gf | 70,000         |
|               | 250gf $\pm$ 50gf | 100,000        |
| 4.3mm & 5.0mm | 130gf $\pm$ 50gf | 50,000         |
|               | 180gf $\pm$ 50gf | 50,000         |
|               | 250gf $\pm$ 50gf | 30,000         |
|               | 320gf $\pm$ 50gf | 20,000         |

## Process

SOLDERING: This component is suited to the following methods:  
– Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

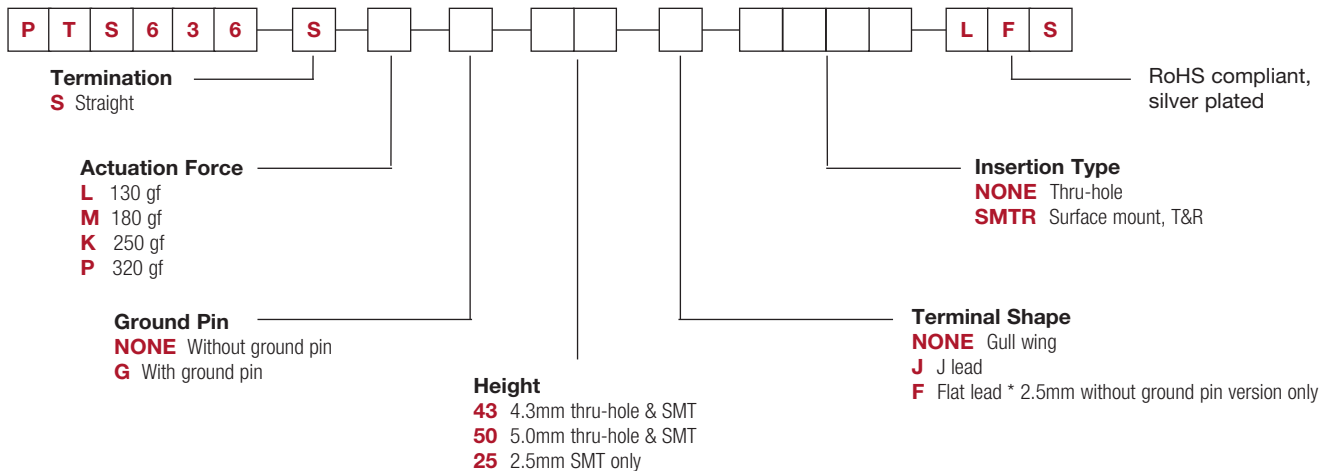
In bags of 1,000 pcs for THT  
In reels of 3,000 pieces for 2.5 mm height  
In reels of 1,500 pieces for 4.3 and 5.0 mm height  
Dimensions of reels according to EIA 481B  
External diameter 330 mm

## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

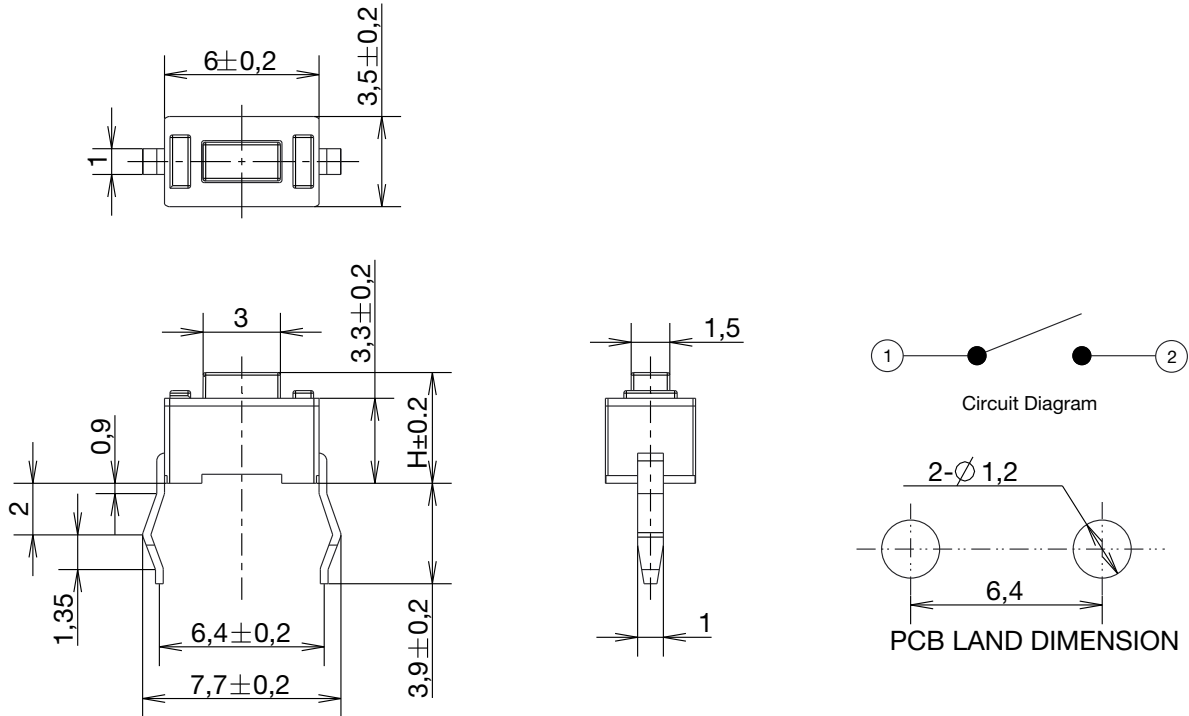
## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

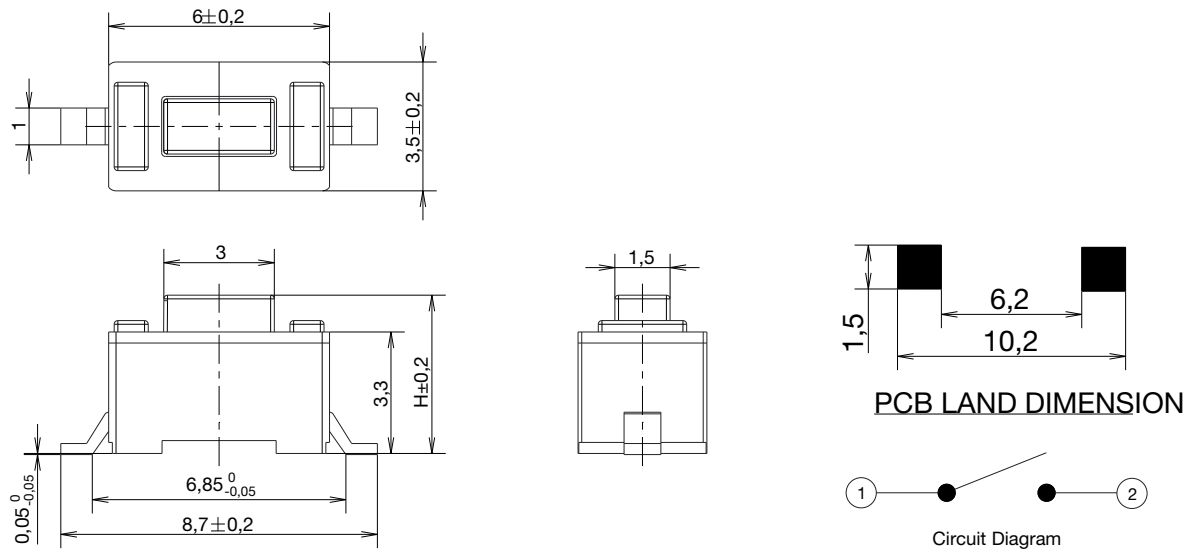


# PTS636 Series 6.0 x 3.5 Top Actuated

THT versions (4.3 & 5.0 mm height)



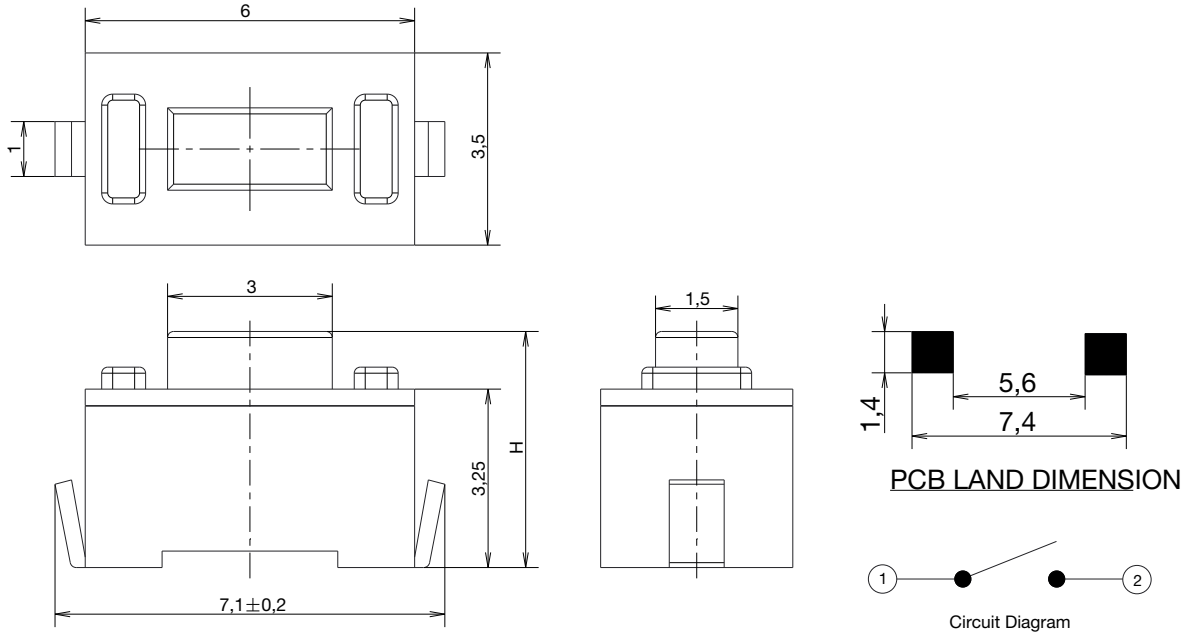
SMT G leads (4.3 & 5.0 mm height)



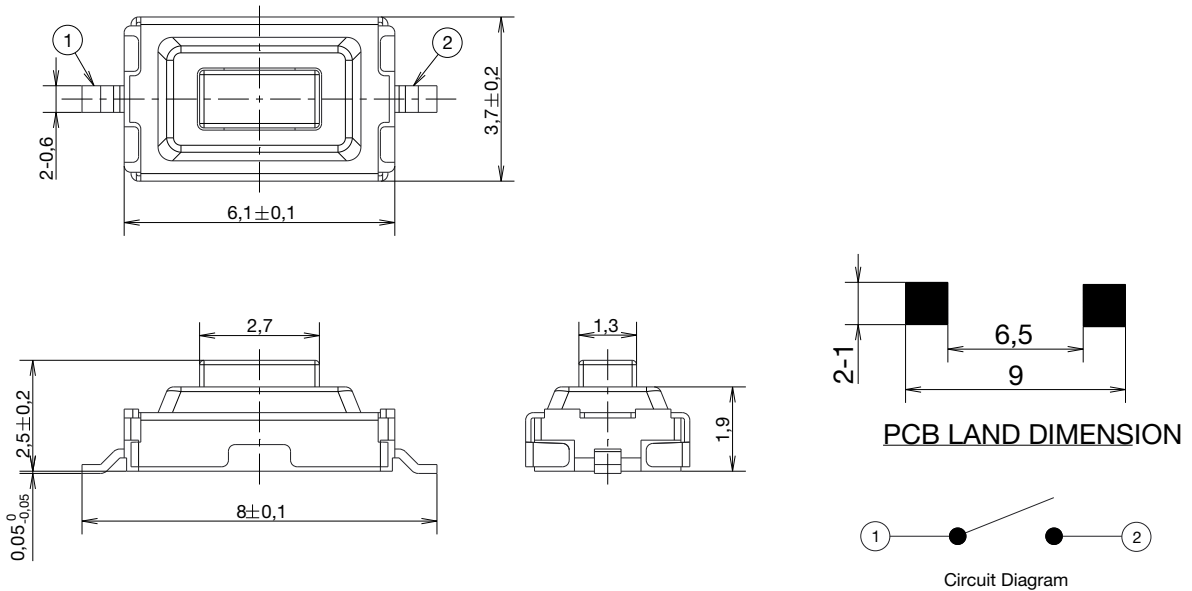
Dimensions are shown: mm  
Specifications and dimensions subject to change

# PTS636 Series 6.0 x 3.5 Top Actuated

## SMT J leads (4.3 & 5.0 mm height)



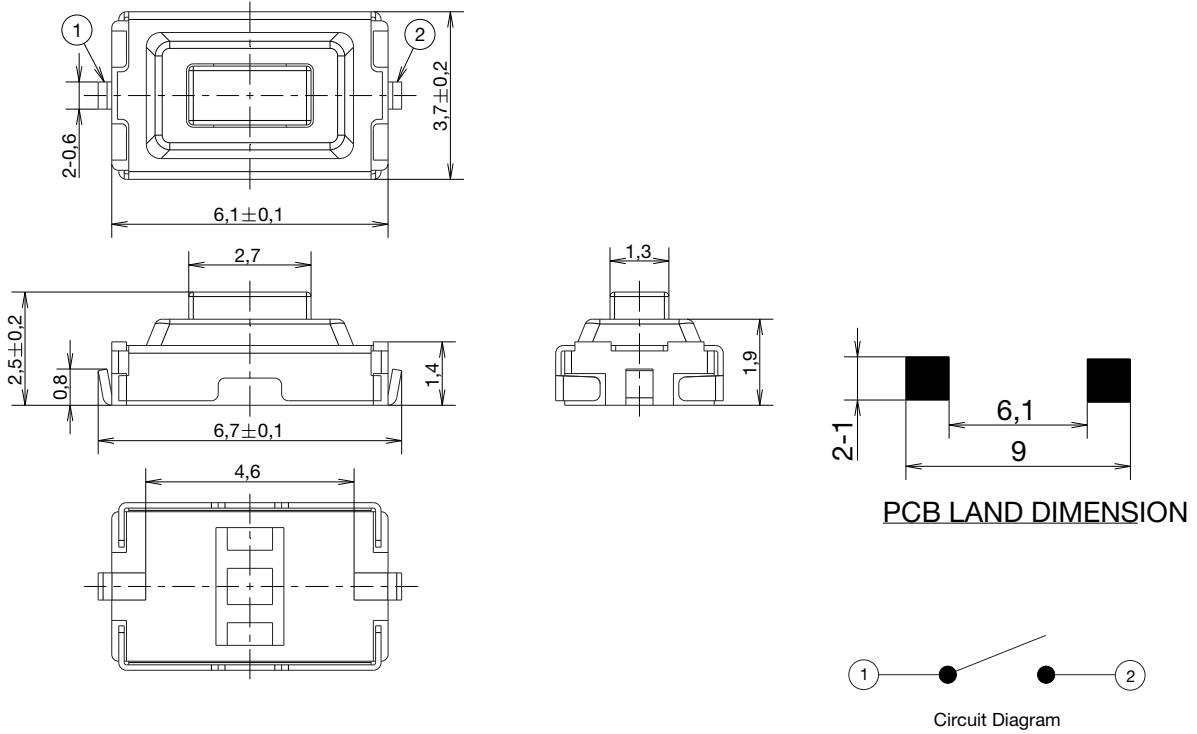
## SMT G leads (2.5 mm height)



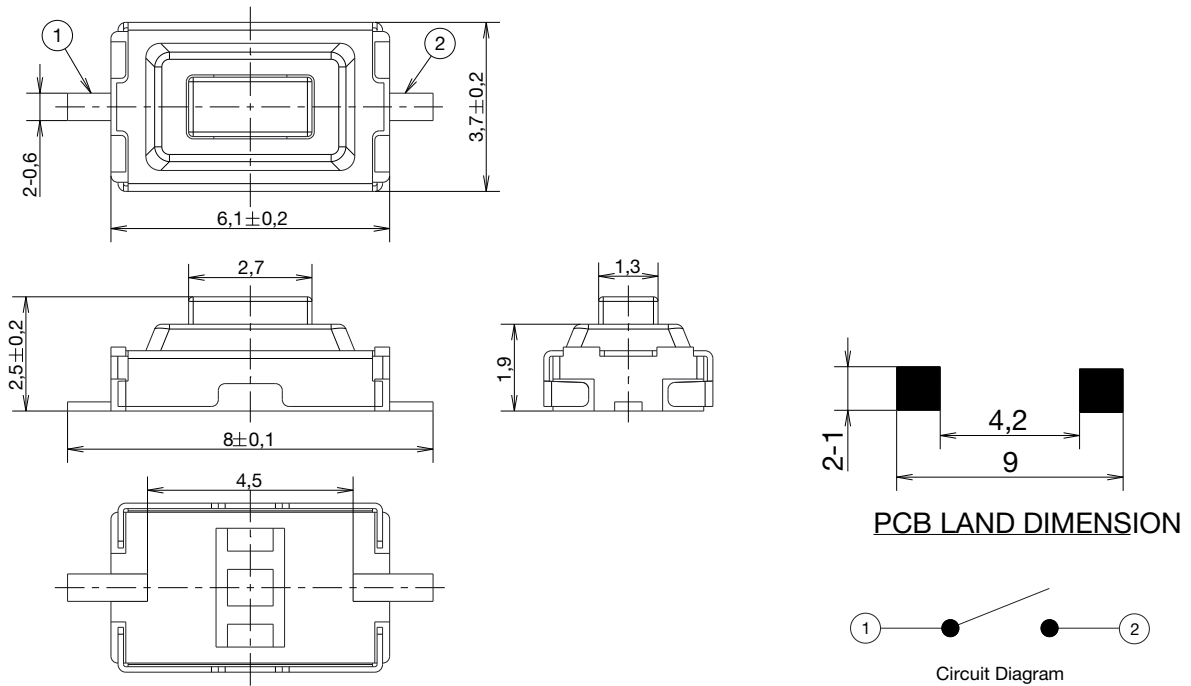


# PTS636 Series 6.0 x 3.5 Top Actuated

## SMT J leads (2.5 mm height)



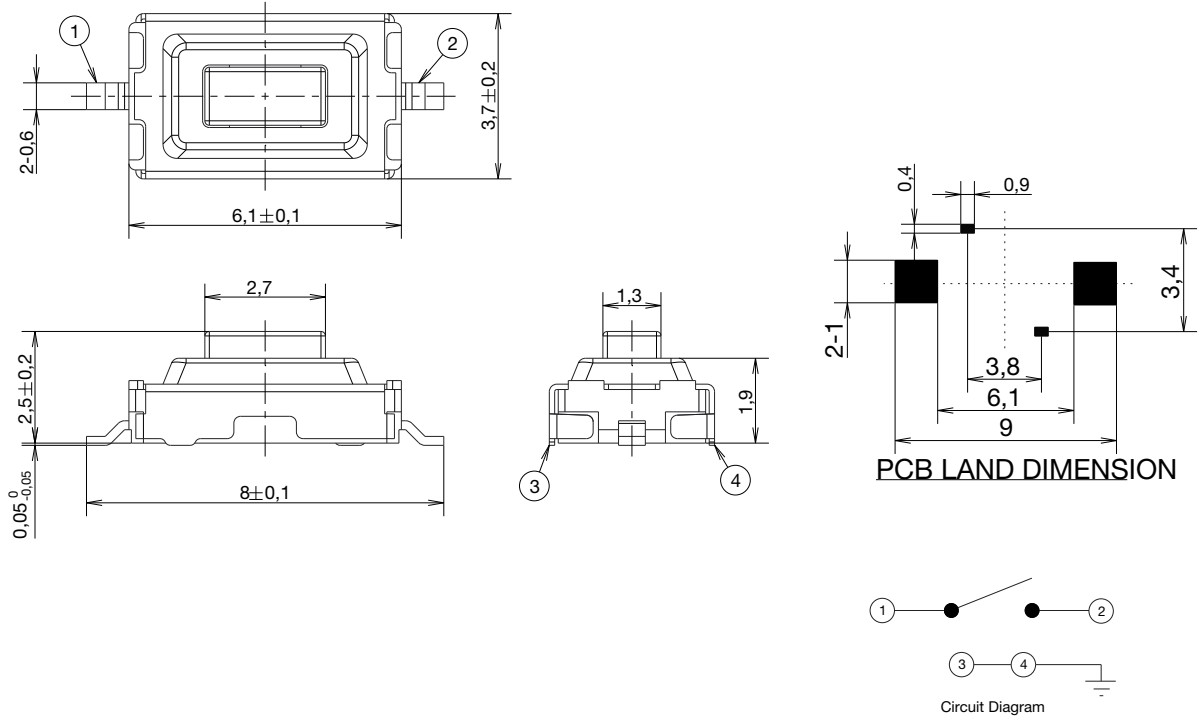
## SMT F leads (2.5 mm height)



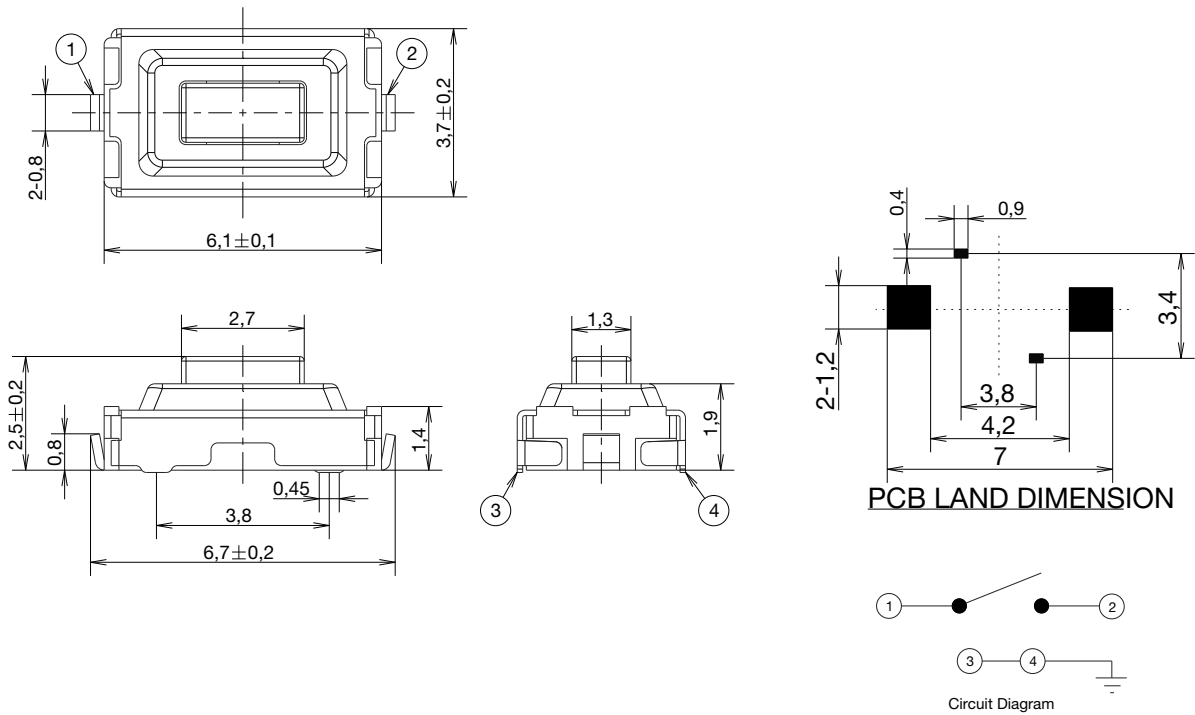
Dimensions are shown: mm  
Specifications and dimensions subject to change

# PTS636 Series 6.0 x 3.5 Top Actuated

## SMT G leads, with ground pin (2.5 mm height)



## SMT J leads, with ground pin (2.5 mm height)

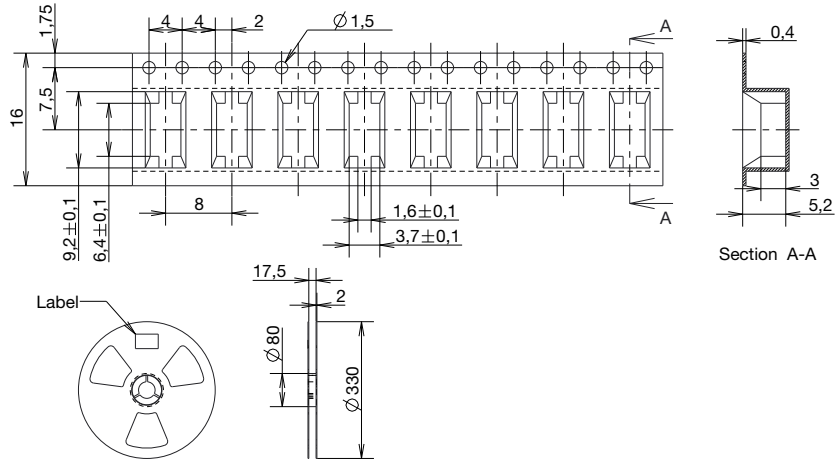


# PTS636 Series 6.0 x 3.5 Top Actuated

## PACKAGING

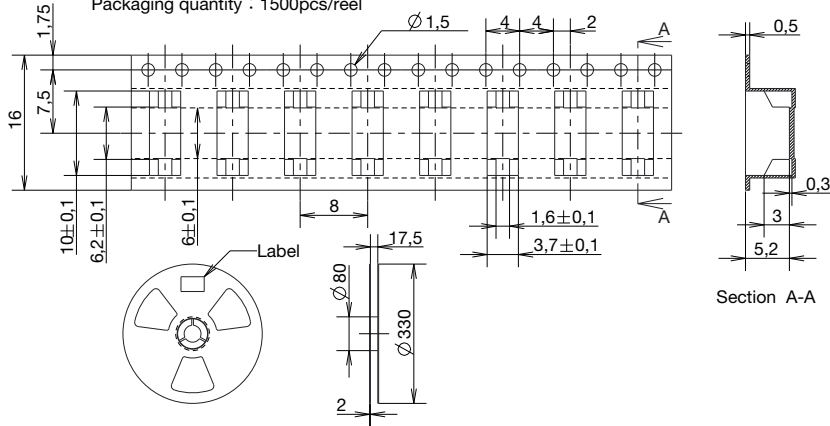
### 4.3 and 5.0 mm height - G leads

THE DIMENSION OF CARRIER TAPE AND REEL  
Packaging quantity : 1500pcs/reel



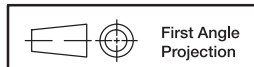
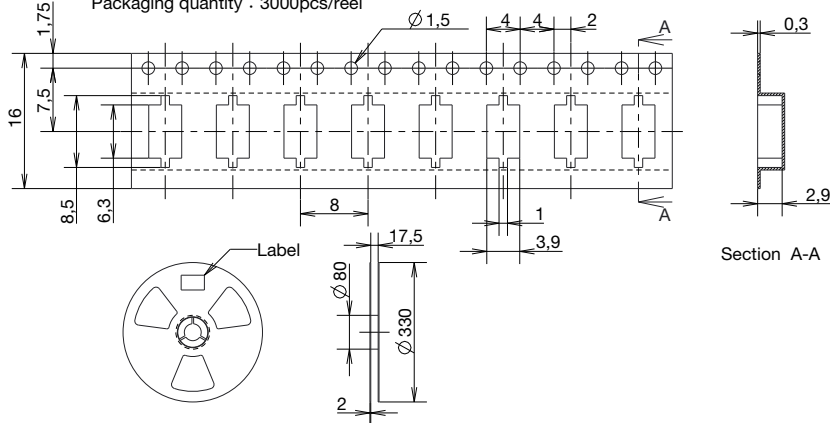
### 4.3 and 5.0 mm height - J leads

THE DIMENSION OF CARRIER TAPE AND REEL  
Packaging quantity : 1500pcs/reel



### 2.5 mm height

THE DIMENSION OF CARRIER TAPE AND REEL  
Packaging quantity : 3000pcs/reel



Dimensions are shown: mm  
Specifications and dimensions subject to change

# PTS641 Series SMT Top Actuated Switches



## Features/Benefits

- 6.3 x 6.3 mm footprint
- Multiple heights
- Ground pin option

## Typical Applications

- Metering
- White goods
- Home and garden equipment

## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: G type for SMT

## Mechanical

TRAVEL: 0.20 mm ±0.15 mm for 160 & 250 gf  
 0.30 mm ±0.15 mm for 320 gf  
 OPERATING LIFE: 200,000 cycles for 160 gf version  
 100,000 cycles for 250 gf & 320 gf versions  
 OPERATION FORCE: 160 gf ±50 gf blue actuator  
 250 gf ±50 gf red actuator  
 320 gf ±80 gf black actuator

## Packaging

Switches in reels of 1,500 pieces.  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 50 mA  
 DIELECTRIC STRENGTH: 250 VA C (1mn)  
 CONTACT RESISTANCE: 100 m Ω  
 INSULATION RESISTANCE: ≥ 100 M Ω  
 BOUNCE TIME: < 5 ms

## Environmental

OPERATING TEMPERATURE: -20°C to 85°C

## Process

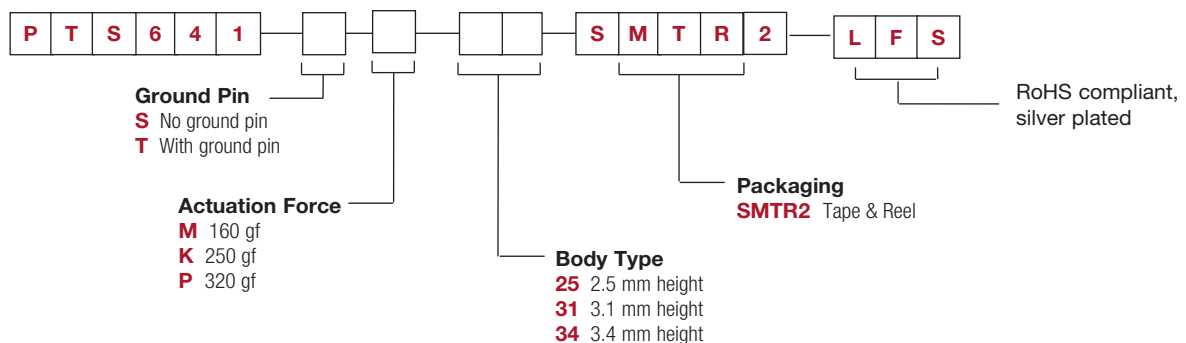
SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

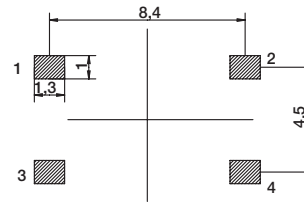
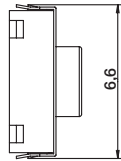
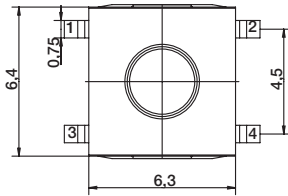
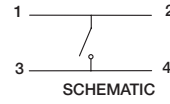
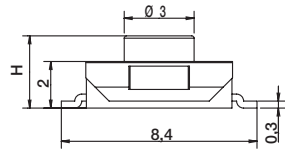
## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



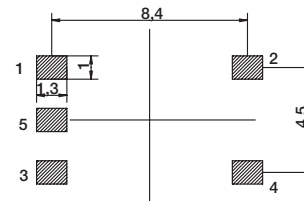
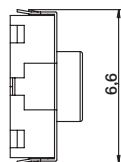
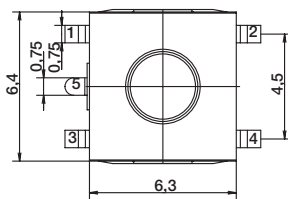
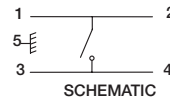
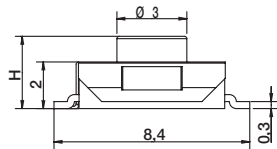
# PTS641 Series SMT Top Actuated Switches

**NO GROUND PIN** H = 2.5, 3.1, or 3.4 mm



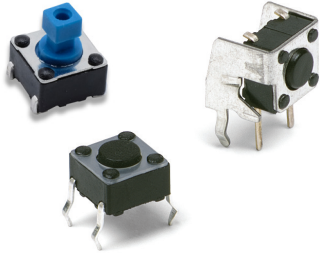
RECOMMENDED PCB LAYOUT

**GROUND PIN** H = 2.5, 3.1, or 3.4 mm



RECOMMENDED PCB LAYOUT

# PTS645 Series 6 mm Tact Switches



## Features/Benefits

- Compact size 6 x 6 mm
- Variety of actuator lengths
- Choice of actuation force
- RoHS compliant and compatible

## Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial

## Specification

FUNCTION: Momentary action  
CONTACT ARRANGEMENT: SPST, N.O.  
TERMINALS: PC pins

## Mechanical

LIFE EXPECTANCY: 100,000 operations.

## Electrical

CONTACT RATING: 50 mA @ 12 V DC.  
DIELECTRIC STRENGTH: 250 V AC min.  
CONTACT RESISTANCE: 100 mΩ max. initial.  
INSULATION RESISTANCE: 10<sup>11</sup> Ω min.

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
STORAGE TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: Preheating to 100°C for 45 sec. max. Keep flux flush with top surface of PCB; do not apply to component side of PCB and area where terminals are located. Soldering to 255°C for 5 sec. max. Clean by brushing on solder surface. Do not clean switch with solvents.

## Packaging

Bulk packaging

### Tape & reel for the SMT type:

Reels of 1,000 pieces for 4.3 and 5.0 mm height  
Reels of 700 pieces for 7.0 mm height  
Reels of 700 pieces for 7.3 mm height  
Reels of 500 pieces for 9.5 mm height  
Reels of 400 pieces for 13.0 mm height

### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

|  |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |
|--|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|
| P  | T | S | 6 | 4 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | L | F | S |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Termination</b></p> <p><b>S</b> Straight<br/><b>T</b> Straight with ESD pin<br/><b>V</b> Vertical THT</p> <p><b>Actuator Shape</b></p> <p><b>NONE</b> Round actuator, All versions<br/><b>J</b> Square actuator, 2.4 mm side (available for Straight 7.3 mm and Vertical 6.15 mm)</p> <p><b>Actuation Force</b></p> <p><b>N</b> 100 gf<br/><b>L</b> 130 gf<br/><b>M</b> 160 gf<br/><b>H</b> 200 gf<br/><b>K</b> 260 gf<br/><b>P</b> 320 gf</p> </div> <div style="width: 45%;"> <p><b>Insertion Type</b></p> <p><b>2</b> Thru hole<br/><b>SMTR92*</b> Surface mount G-type, tape &amp; reel<br/><b>JSMTR92*</b> Surface mount J-type, tape &amp; reel</p> <p><b>Switch height from PCB for S and T only (H dimension see actuator height drawings)</b></p> <p><b>43</b> 4.3 (.169), thru-hole and SMT<br/><b>50</b> 5.0 (.197), thru-hole and SMT<br/><b>70</b> 7.0 (.275), thru-hole and SMT<br/><b>73</b> 7.3 (.287), thru-hole and SMT, square actuator 2.4 mm side only<br/><b>95</b> 9.5 (.374), thru-hole and SMT<br/><b>13</b> 13.0 (.512) SMT only<br/><b>11</b> 11.0 (.433) SMT only</p> <p><b>Switch length from front leads for V only (H dimension see actuator height drawings)</b></p> <p><b>31</b> 3.15 (.124), vertical<br/><b>39</b> 3.85 (.151), vertical<br/><b>58</b> 5.85 (.230), vertical<br/><b>61</b> 6.15 (.242), vertical, square actuator 2.4 mm side only<br/><b>83</b> 8.35 (.329), vertical</p> </div> </div> |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |

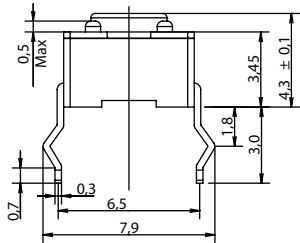
RoHS compliant and compatible.  
Silver plated.

\*Only the straight type termination without ESD pin is available in SMT type  
\* Long life version has to be created case by case as special part number

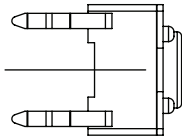
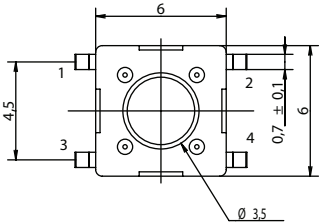
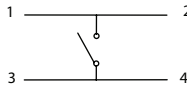


## TERMINATION

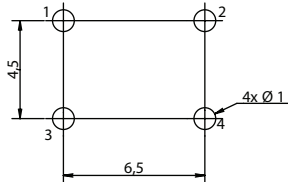
### S STRAIGHT



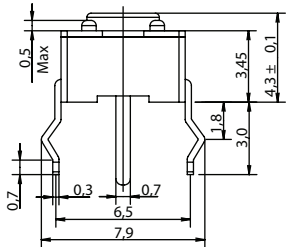
SCHEMATIC



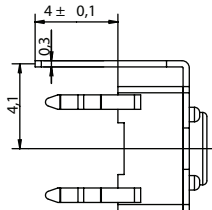
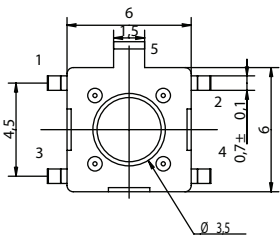
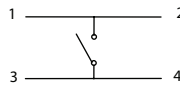
PCB LAYOUT



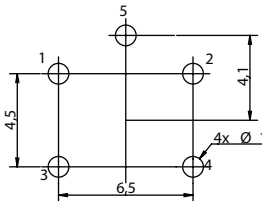
### T STRAIGHT WITH ESD PIN



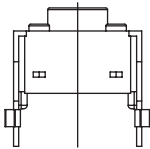
SCHEMATIC



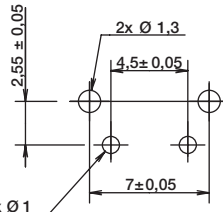
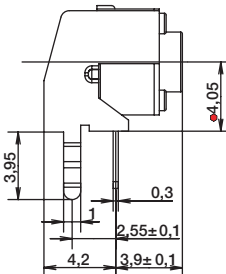
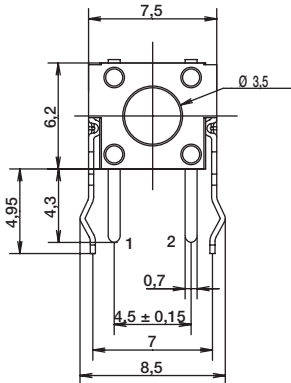
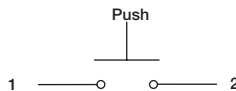
PCB LAYOUT



### V VERTICAL THT



SCHEMATIC



PCB LAYOUT



Dimensions are shown: mm

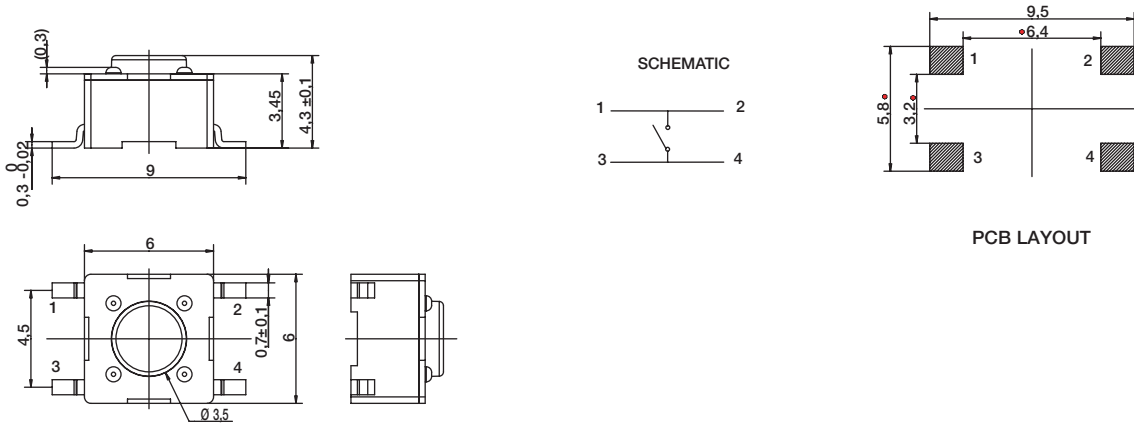
Specifications and dimensions subject to change



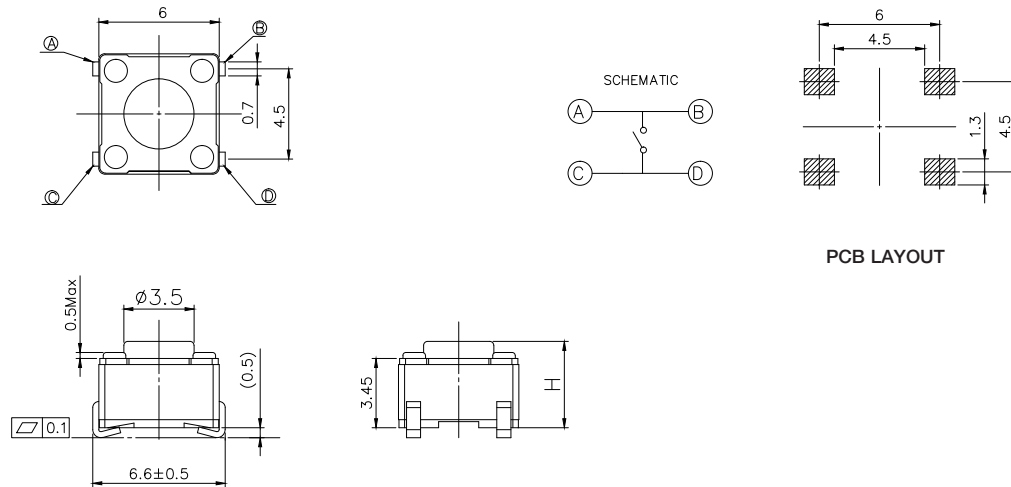
# PTS645 Series 6 mm Tact Switches

## TERMINATION

### SMT G Type



### SMT J Type



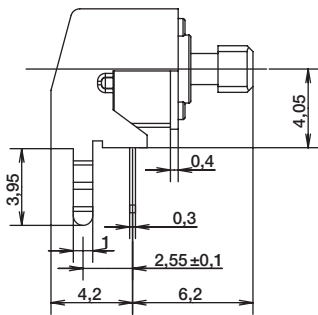
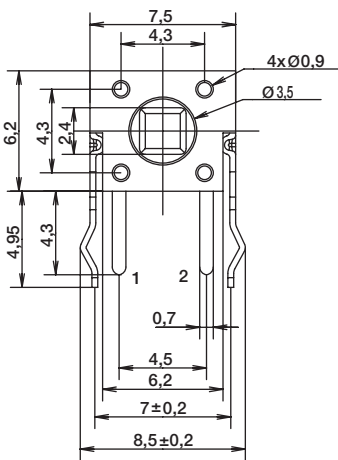
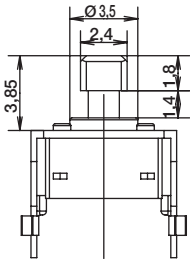
B Tactile Switches



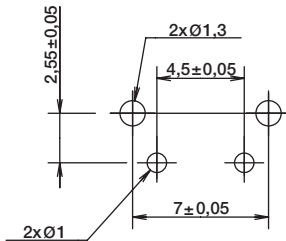
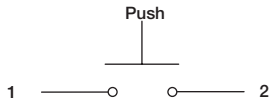
## ACTUATOR SHAPE

### J SQUARE ACTUATOR

VERTICAL THT - FOR 6.15MM LENGTH ONLY

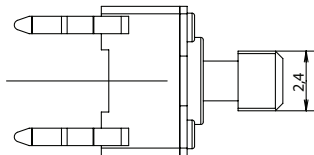
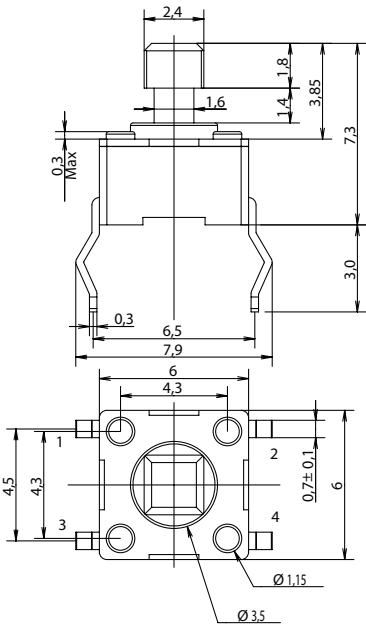


SCHEMATIC

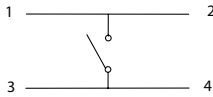


RECOMMENDED PCB LAYOUT

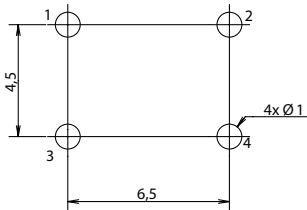
STRAIGHT THT - FOR 7.3MM HEIGHT ONLY



SCHEMATIC



RECOMMENDED PCB LAYOUT



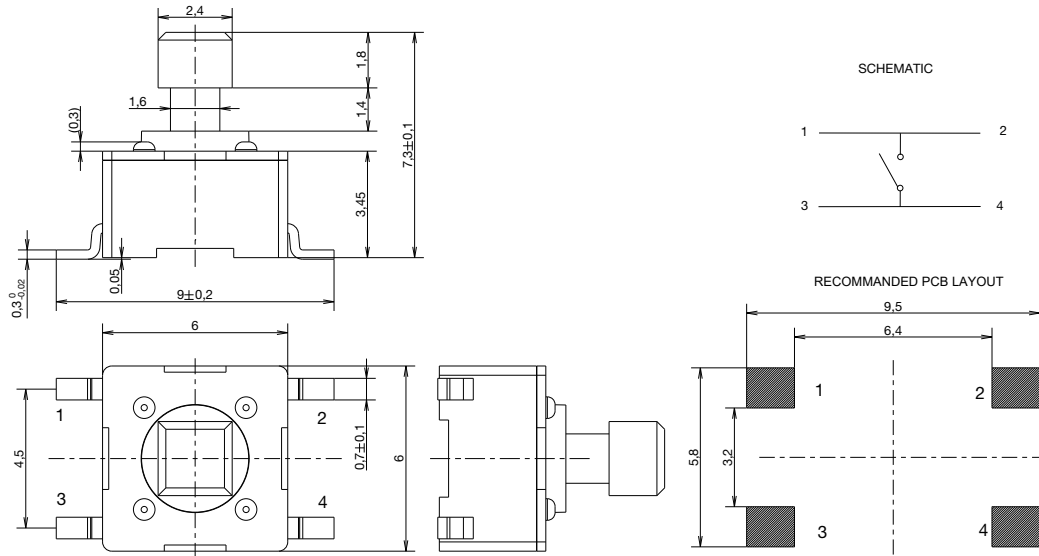
First Angle  
Projection



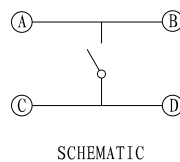
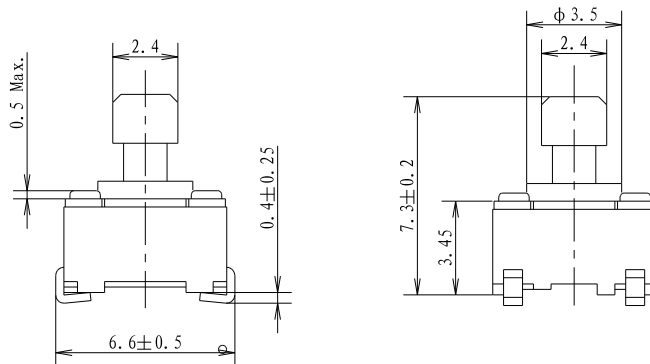
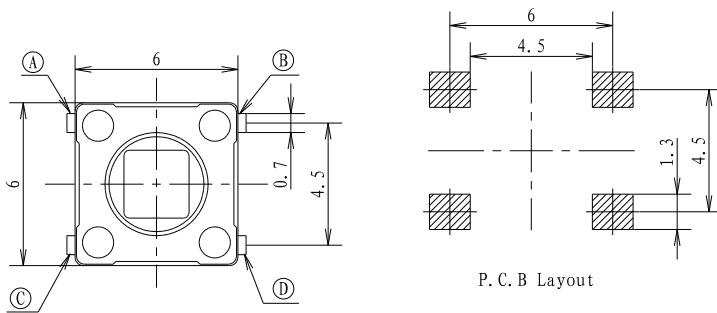
# PTS645 Series 6 mm Tact Switches

## ACTUATOR SHAPE

### STRAIGHT SMT G TYPE - FOR 7.3MM HEIGHT ONLY



### STRAIGHT SMT J TYPE - FOR 7.3MM HEIGHT ONLY

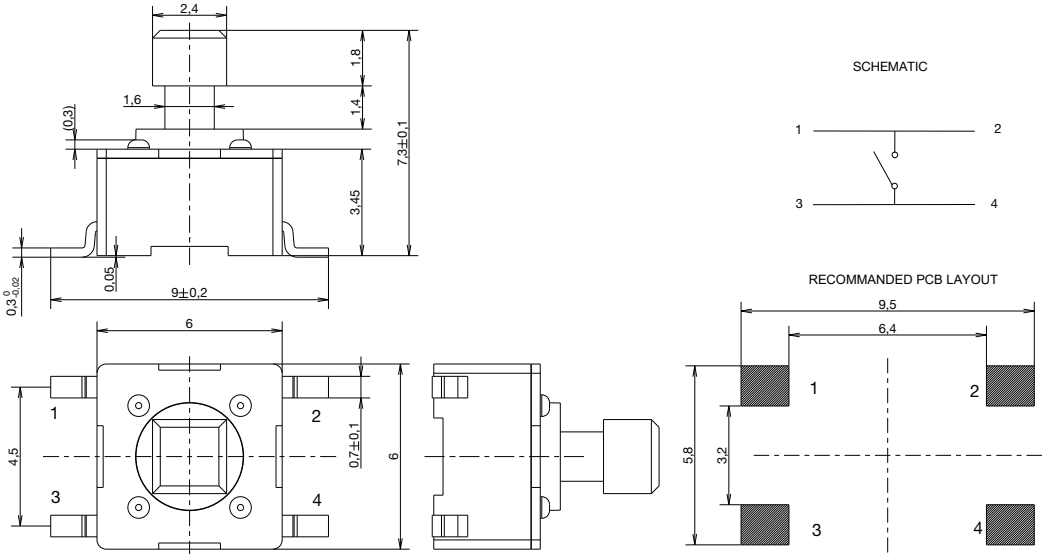


Dimensions are shown: mm  
 Specifications and dimensions subject to change

# PTS645 Series 6 mm Tact Switches

## ACTUATOR SHAPE

STRAIGHT SMT - FOR 7.3MM HEIGHT ONLY



Tactile Switches

B



Dimensions are shown: mm  
Specifications and dimensions subject to change



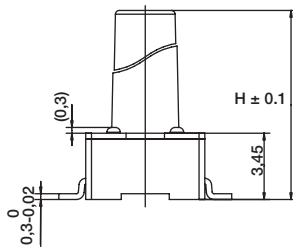
14 Nov 22

# PTS645 Series 6 mm Tact Switches

## ACTUATION FORCE

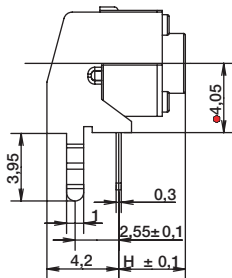
| OPTION CODE | FORCE           |
|-------------|-----------------|
| <b>L</b>    | 130 grams Black |
| <b>M</b>    | 160 grams Blue  |
| <b>H</b>    | 200 grams Gray  |
| <b>K</b>    | 260 grams Red   |

## ACTUATOR HEIGHT



Switch height from PCB for S and T only

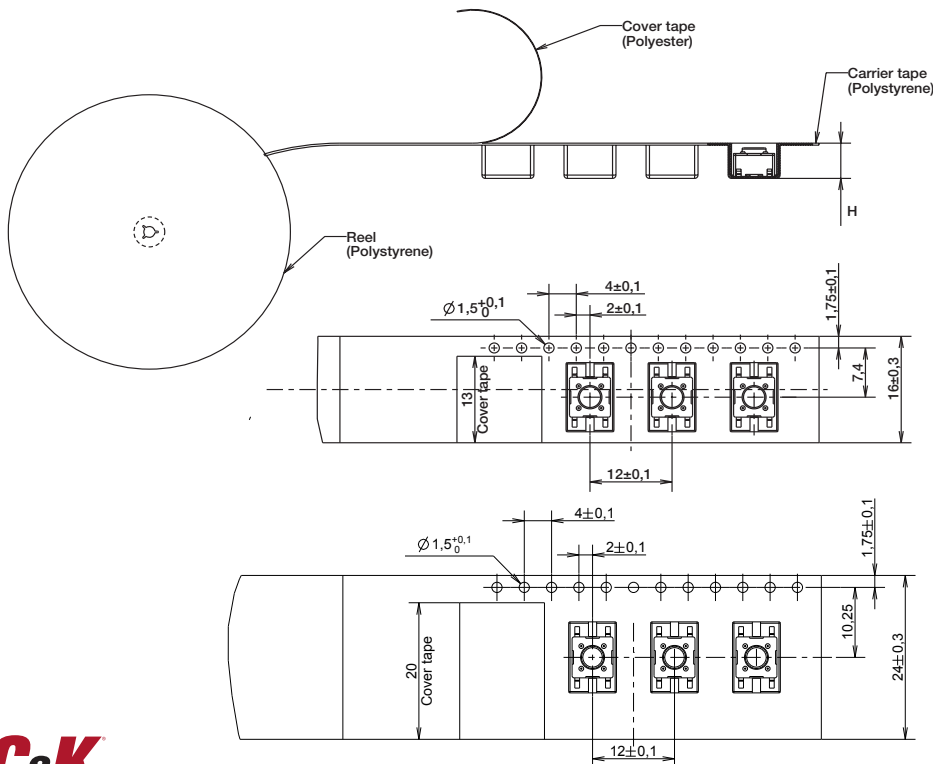
| OPTION CODE | DIMENSION H | TERMINATION       | SCHEMATIC       |              |
|-------------|-------------|-------------------|-----------------|--------------|
|             |             |                   | Without EMC pin | With EMC pin |
| <b>43</b>   | 4,3 (.169)  | Thru-hole and SMT |                 |              |
| <b>50</b>   | 5,0 (.197)  | Thru-hole and SMT |                 |              |
| <b>70</b>   | 7,0 (.275)  | Thru-hole and SMT |                 |              |
| <b>95</b>   | 9,5 (.374)  | Thru-hole and SMT |                 |              |
| <b>13</b>   | 13,0 (.512) | SMT               |                 |              |



Switch length from front leads for V only

| OPTION CODE | DIMENSION H | TERMINATION | SCHEMATIC       |              |
|-------------|-------------|-------------|-----------------|--------------|
|             |             |             | Without EMC pin | With EMC pin |
| <b>31</b>   | 3,15 (.124) | Vertical    |                 |              |
| <b>39</b>   | 3,85 (.151) | Vertical    |                 |              |
| <b>58</b>   | 5,85 (.230) | Vertical    |                 |              |
| <b>83</b>   | 8,35 (.329) | Vertical    |                 |              |

## TAPE & REEL FOR SMT G TYPE VERSIONS



| OPTION CODE | WIDTH TAPE | POCKET HEIGHT |
|-------------|------------|---------------|
| <b>43</b>   | 16 ± 0.3   | 5.3           |
| <b>50</b>   | 16 ± 0.3   | 5.3           |
| <b>70</b>   | 16 ± 0.3   | 7.3           |
| <b>73</b>   | 16 ± 0.3   | 7.6           |
| <b>95</b>   | 24 ± 0.3   | 10.3          |
| <b>13</b>   | 24 ± 0.3   | 13.3          |

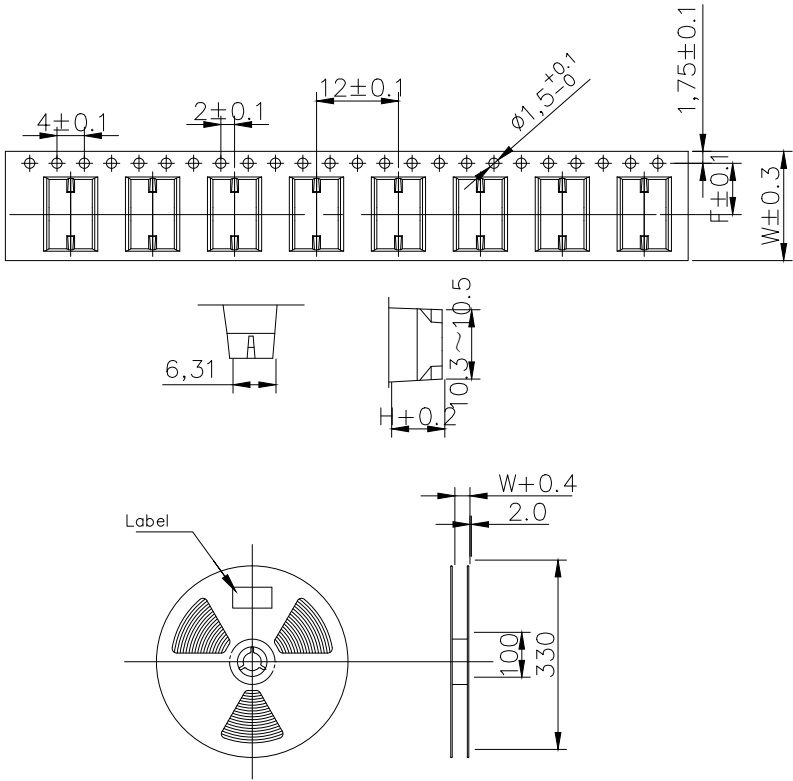


Dimensions are shown: mm  
Specifications and dimensions subject to change

# PTS645 Series 6 mm Tact Switches

## TAPE & REEL FOR SMT J TYPE VERSIONS

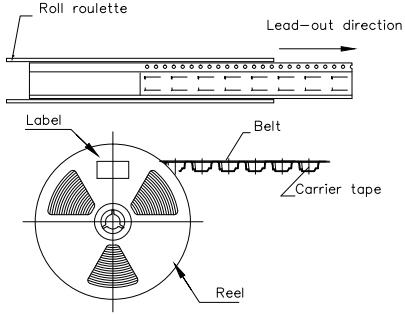
Tactile Switches B



Tape specifications

| Product height (h)mm | Carrier tape width (W)mm | Center distance of carrier tape (F)mm | pcs/reel |
|----------------------|--------------------------|---------------------------------------|----------|
| 4.3                  | 16                       | 7.5                                   | 1000     |
| 5.0                  | 16                       | 7.5                                   | 1000     |
| 7.0                  | 16                       | 7.5                                   | 700      |
| 7.3                  | 16                       | 7.5                                   | 700      |
| 9.5                  | 24                       | 11.5                                  | 500      |
| 11                   | 24                       | 11.5                                  | 500      |
| 13                   | 24                       | 11.5                                  | 500      |

Note: The disc rotates counterclockwise. According to the packing shown in the figure, the braid must not be twisted to prevent product deformation;



14 Nov 22



Dimensions are shown: mm  
Specifications and dimensions subject to change

**NEW**

# PTS645V Series 6 mm SMT Side Actuated Tact Switch

## Features/Benefits

- Full SMT processing
- Strong PCB soldering pads
- Compact 6 x 6 mm design

## Typical Applications

- Consumer Products
- Set Top and Access Boxes
- Instrumentation
- Home and Garden Equipment



## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST, N.O.  
 TERMINALS: G type for SMT  
 TRAVEL: PTS645V: 0.25 +0.2/-0.1 mm  
 PTS645VS: 0.35 +0.2/-0.1mm  
 OPERATING LIFE: 100,000 cycles

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C  
 STORAGE TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

## Mechanical

| Part Number            | Operating Force (gf) | Actuator Color |
|------------------------|----------------------|----------------|
| PTS645VN13SMTR92 LFS   | 100                  | Dark Grey      |
| PTS645VM13SMTR92 LFS   | 160                  | Yellow Green   |
| PTS645VSN19PSMTR92 LFS | 100                  | Grey           |
| PTS645VSM19PSMTR92 LFS | 160                  | Black          |
| PTS645VSK19PSMTR92 LFS | 260                  | Red            |
| PTS645VSP19PSMTR92 LFS | 320                  | Yellow         |

Recommended solder paste thickness is  $\geq 15\mu\text{m}$

## Packaging

In reels of 650 pieces  
 Dimensions of reels according to EIA 481B  
 External diameter 330 mm

### NOTE:

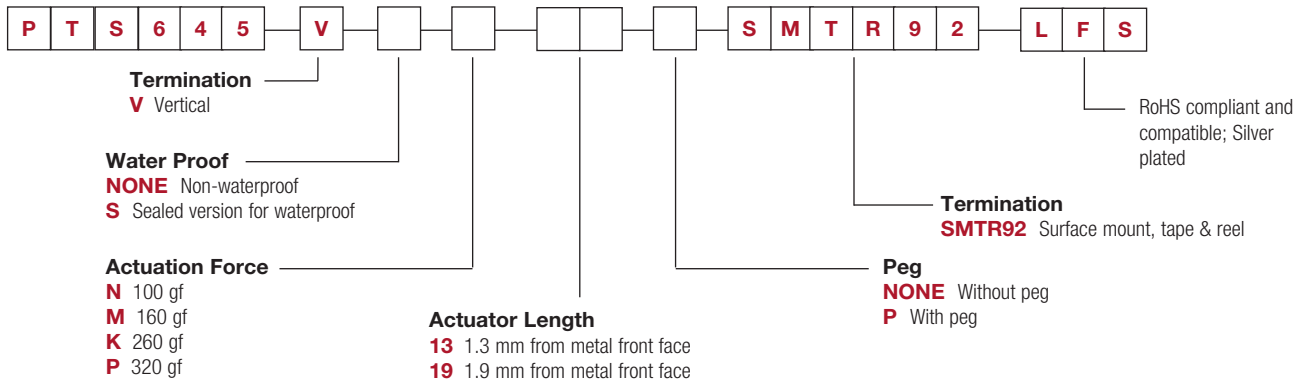
- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

## Electrical

MAXIMUM VOLTAGE: 12 V DC  
 MAXIMUM CURRENT: 50 mA  
 DIELECTRIC STRENGTH: 100 V AC (1mn)  
 CONTACT RESISTANCE:  $\leq 100\text{ m}\Omega$   
 INSULATION RESISTANCE:  $\geq 100\text{ M}\Omega$   
 BOUNCE TIME:  $\leq 10\text{ ms}$

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.



\* Sealed version with IP67 is currently only for 1.9mm actuator length. For other lengths, please contact your local C&K representative.

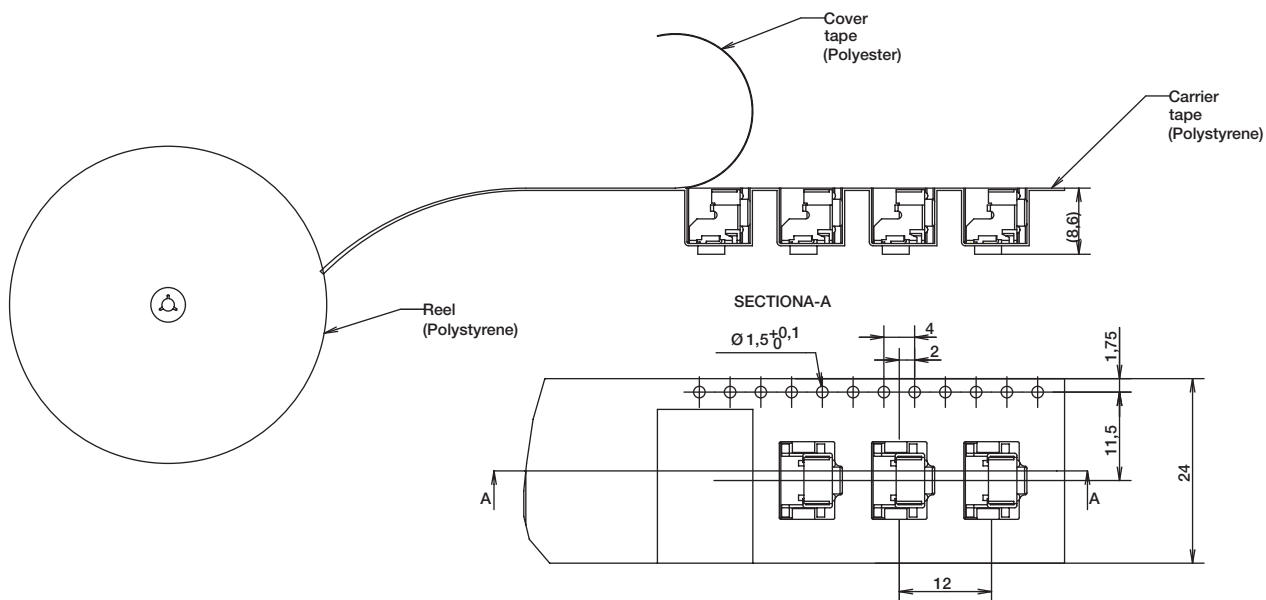
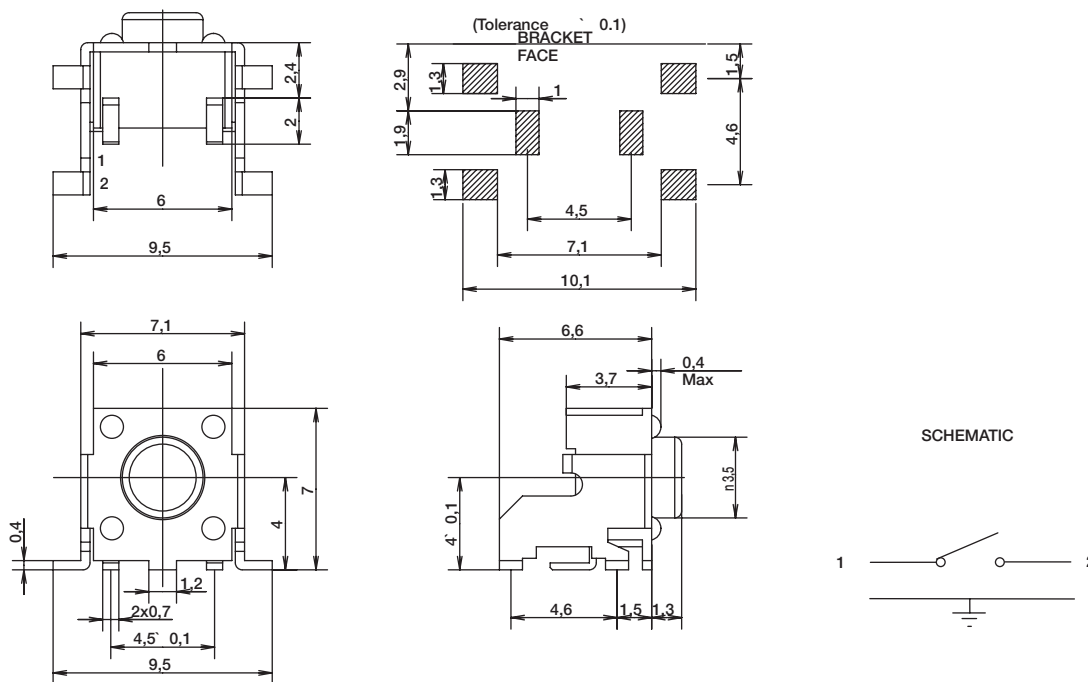


# PTS645V Series 6 mm SMT Side Actuated Tact Switch

**NEW**

STANDARD VERSION WITHOUT PEG

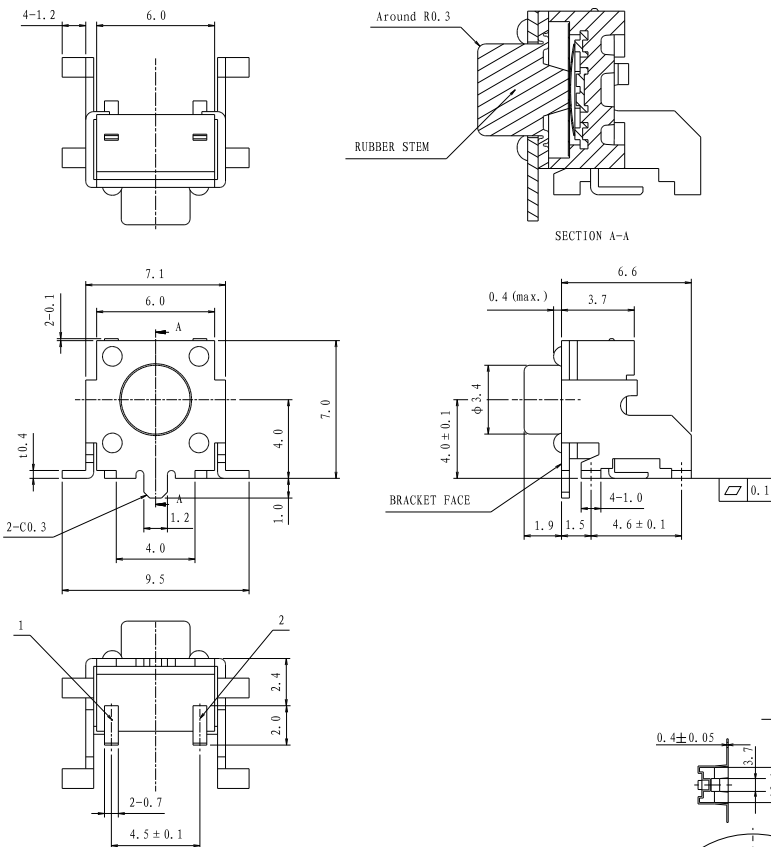
RECOMMENDED PCB LAYOUT



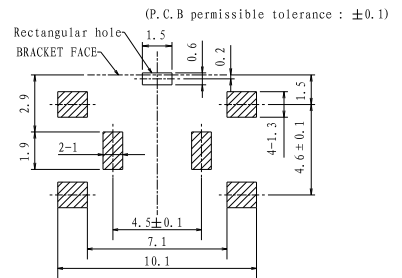
# PTS645V Series 6 mm SMT Side Actuated Tact Switch

**NEW**

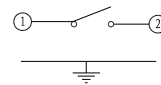
VERSION WITH PEG



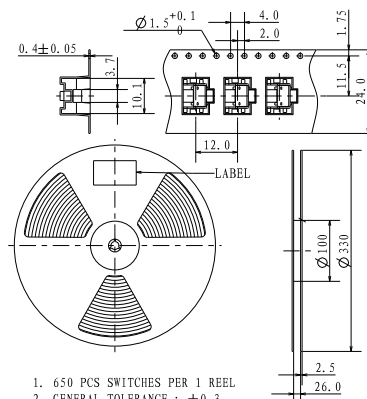
### P. C. B SOLDER LAND DIMENSIONS



### CIRCUIT DIAGRAM



### PACKAGE



1. 650 PCS SWITCHES PER 1 REEL
2. GENERAL TOLERANCE : ±0.3



Tactile Switches



# PTS647 Series 4.5 mm Tact Switch

## Features/Benefits

- Compact size 4.5 x 4.5 mm
- SMT terminals
- Different actuator heights
- Choice of actuation forces
- Tape & reel

## Typical Applications

- Consumer
- Industrial control panels
- Computer products



| Part Number           | Operating Force (gf) | Life    | Height (H) |
|-----------------------|----------------------|---------|------------|
| PTS647 SN38 SMTR2 LFS | 100 +/- 50           | 100,000 | 3.8 mm     |
| PTS647 SM38 SMTR2 LFS | 180 +/- 50           | 100,000 | 3.8 mm     |
| PTS647 SK38 SMTR2 LFS | 250 +/- 50           | 100,000 | 3.8 mm     |
| PTS647 SN50 SMTR2 LFS | 100 +/- 50           | 100,000 | 5.0 mm     |
| PTS647 SM50 SMTR2 LFS | 180 +/- 50           | 100,000 | 5.0 mm     |
| PTS647 SK50 SMTR2 LFS | 250 +/- 50           | 100,000 | 5.0 mm     |
| PTS647 SN70 SMTR2 LFS | 100 +/- 50           | 100,000 | 7.0 mm     |
| PTS647 SM70 SMTR2 LFS | 180 +/- 50           | 100,000 | 7.0 mm     |
| PTS647 SK70 SMTR2 LFS | 250 +/- 50           | 100,000 | 7.0 mm     |

## Mechanical

TRAVEL: 0.25 mm +/- 0.15 mm

## Electrical

CONTACT RATING: 50 mA @ 12 V DC.  
DIELECTRIC STRENGTH: 250 V AC min.  
CONTACT RESISTANCE: 100 mΩ max. initial.  
INSULATION RESISTANCE: 100 MΩ min.

## Environmental

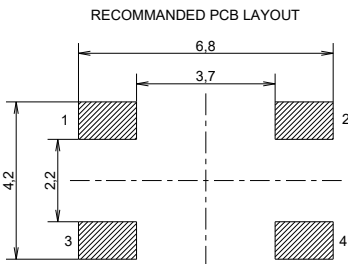
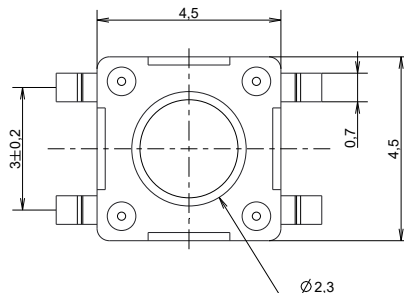
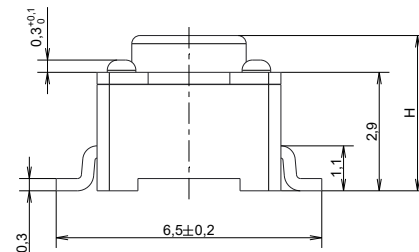
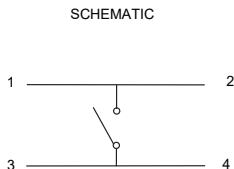
OPERATING TEMPERATURE: -20°C to 70°C

## Packaging

In reels of 1,000 pieces for 7.0 mm height  
In reels of 1,500 pieces for 5.0 mm height  
In reels of 2,000 pieces for 3.8 mm height  
Dimensions of reels according to EIA RS481 or IEC 2863.  
External diameter 330 mm ± 2 mm.

### NOTE:

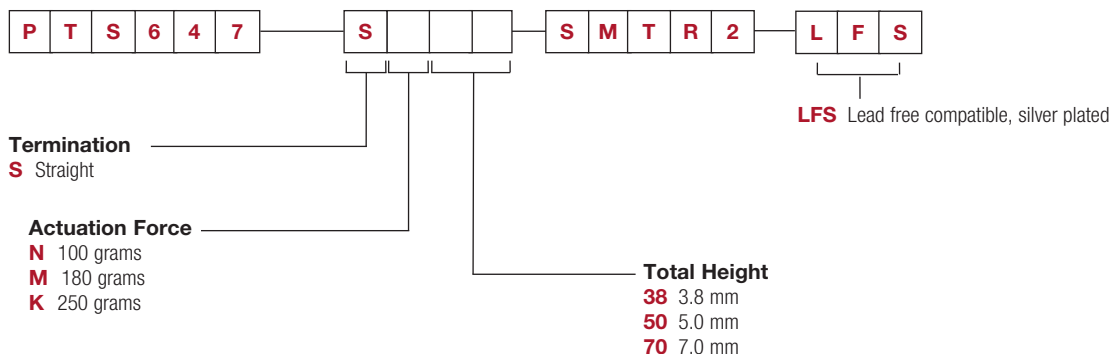
- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- **The PTS series is not certified for using in Automotive application and no PPAP.** However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.



## How To Order

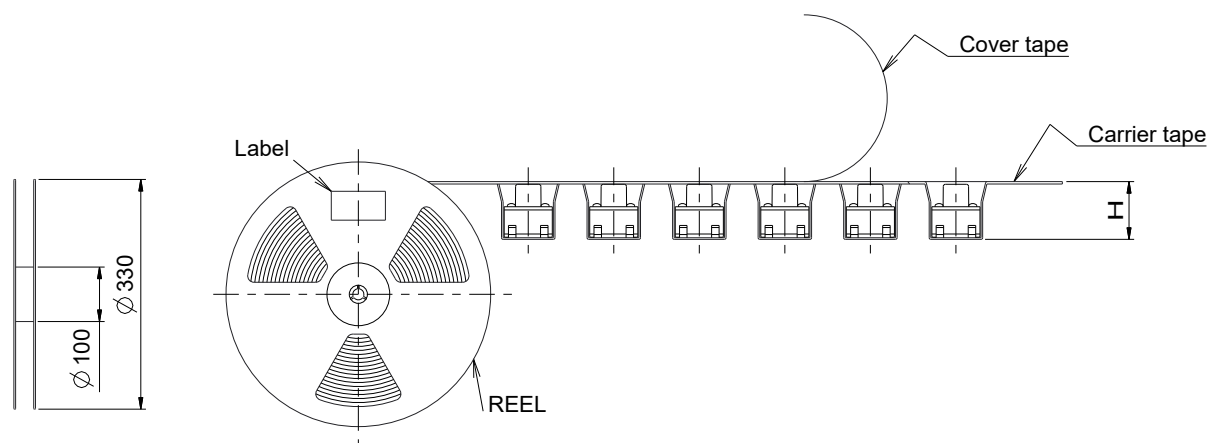
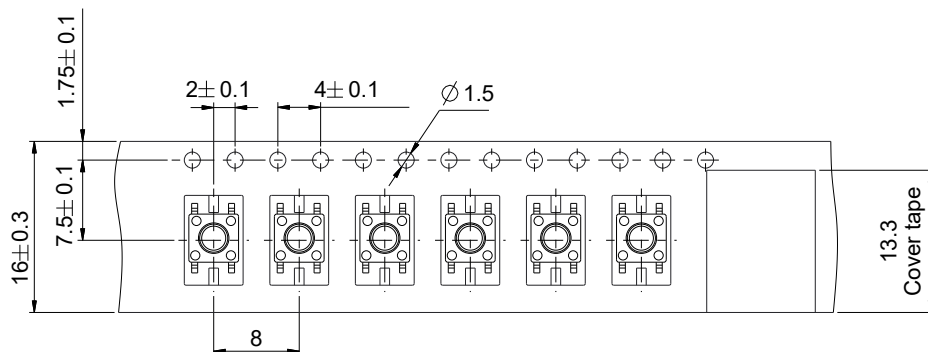
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

**For any part number different from those listed above, please consult your local representative.**



# PTS647 Series 4.5 mm Tact Switch

## TAPE & REEL



| Part Number           | Pocket Height (H) |
|-----------------------|-------------------|
| PTS647 SN38 SMTR2 LFS | 4.2 mm            |
| PTS647 SM38 SMTR2 LFS | 4.2 mm            |
| PTS647 SK38 SMTR2 LFS | 4.2 mm            |
| PTS647 SN50 SMTR2 LFS | 5.4 mm            |
| PTS647 SM50 SMTR2 LFS | 5.4 mm            |
| PTS647 SK50 SMTR2 LFS | 5.4 mm            |
| PTS647 SN70 SMTR2 LFS | 7.2 mm            |
| PTS647 SM70 SMTR2 LFS | 7.2 mm            |
| PTS647 SK70 SMTR2 LFS | 7.2 mm            |

**NEW**

# PTS125 Series 12 mm Tact Switches



### Features/Benefits

- THT and SMT terminations
- Various heights
- Snap fit actuator option

### Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial

Tactile Switches

### Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact SPST, N.O.  
 TERMINALS: PC pins for THT and G type for SMT  
 TRAVEL: 130 gf 0.20 mm  
           180 gf 0.25 mm  
           250 gf 0.30 mm  
           350 gf 0.35 mm

### Mechanical

OPERATING FORCE: 130 gf, 180 gf, 250 gf, 350 gf

### Electrical

MAX VOLTAGE: 12 VDC  
 MAX CURRENT: 50 mA  
 DIELECTRIC STRENGTH: 250 V AC (1mn)  
 CONTACT RESISTANCE: <100 mΩ  
 INSULATION RESISTANCE: >100MΩ  
 BOUNCE TIME: < 5 ms

#### NOTE:

- Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- The PTS series is not certified for using in Automotive application and no PPAP. However, in the case of some automotive accessories and specific applications for 2 and 3 wheeled vehicles the PTS is widely used and very suitable. Please contact your local C&K representative to discuss your application and the best switch solution.

### Environmental

OPERATING TEMPERATURE: -40°C to 85°C

### Process

SOLDERING: This component is suited to the following methods:  
 Infrared reflow soldering in accordance with IEC 61760-1 for SMT version  
 Wave soldering compatible with lead free soldering profile

### Packaging

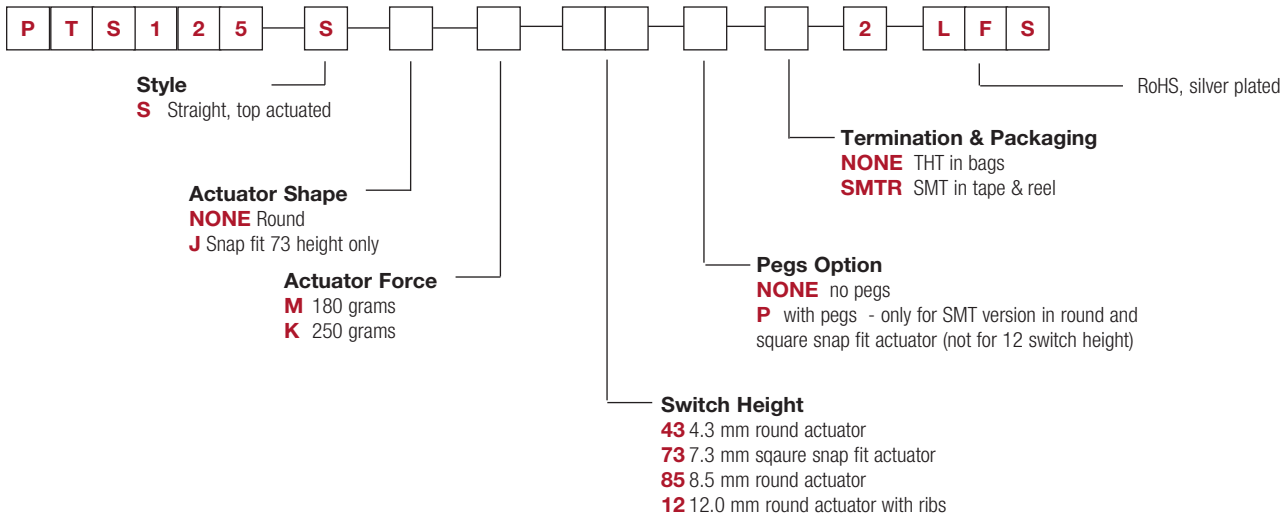
Dimensions of reels according to EIA 481B. External diameter 330 mm.

| Soldering Style | Height           | Packaging   | Parts per Packaging |
|-----------------|------------------|-------------|---------------------|
| THT             | All heights      | Plastic bag | 500                 |
| SMT             | 4.3 mm           | tape & reel | 900                 |
| SMT             | 4.3 mm with pegs | tape & reel | 600                 |
| SMT             | 7.3 mm           | tape & reel | 500                 |
| SMT             | 7.3 mm with pegs | tape & reel | 500                 |
| SMT             | 8.5 mm           | tape & reel | 500                 |
| SMT             | 8.5 mm with pegs | tape & reel | 400                 |
| SMT             | 12 mm            | tape & reel | 250                 |

### How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.

### STANDARD VERSION: 200K LIFE



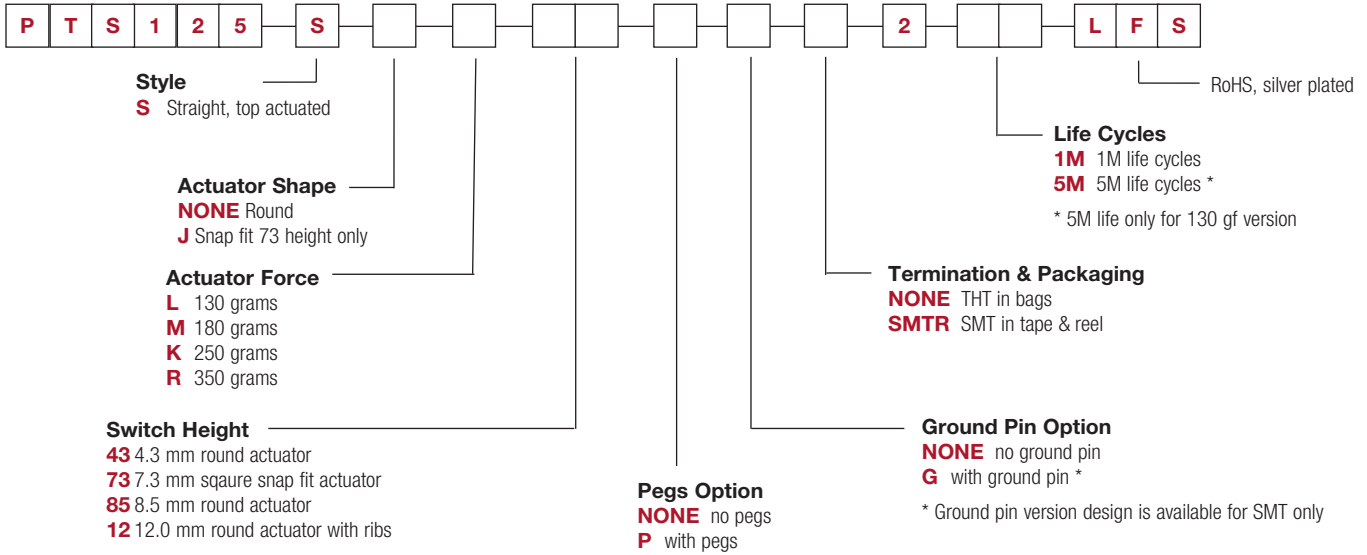
Other heights with the round actuator are available upon request. Different minimum order quantities than the stand may apply.



**NEW**

# PTS125 Series 12 mm Tact Switches

**LONG LIFE VERSION: 1000K TO 5000K LIFE**

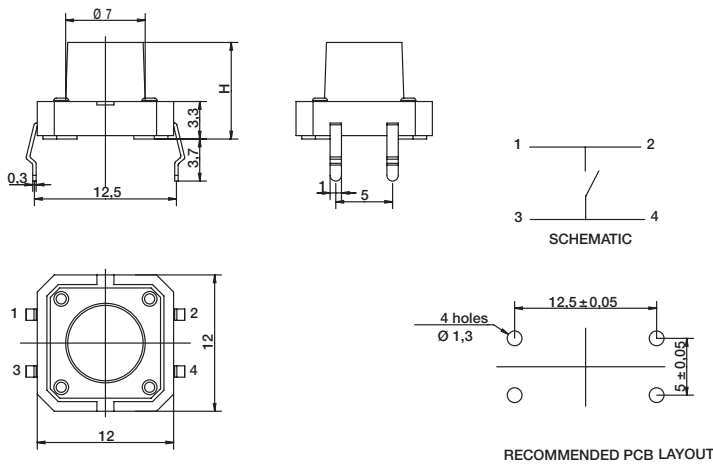


Other heights with the round actuator are available upon request.  
Different minimum order quantities than the stand may apply.

**B**  
Tactile Switches

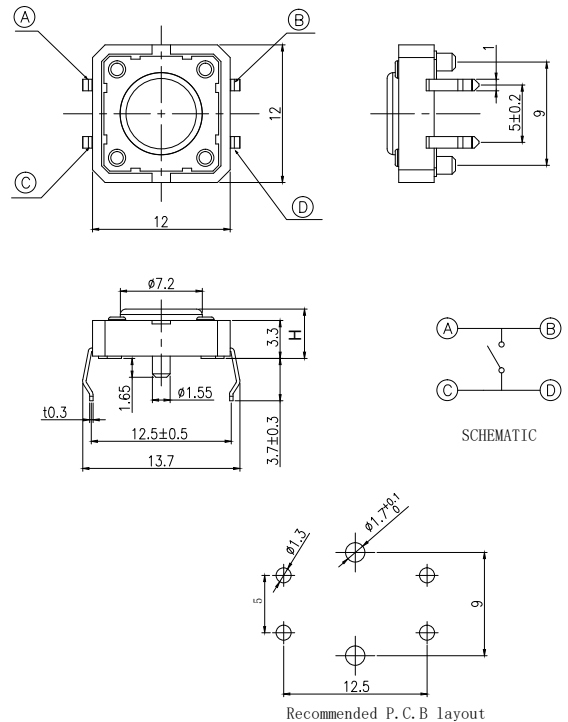
## THT VERSION WITHOUT PEGS WITH ROUND ACTUATOR

H= 4.3, 7.3 & 8.5 MM (other height upon request)



## THT VERSION WITH PEGS WITH ROUND ACTUATOR

H= 4.3, 7.3 & 8.5 MM (other height upon request)

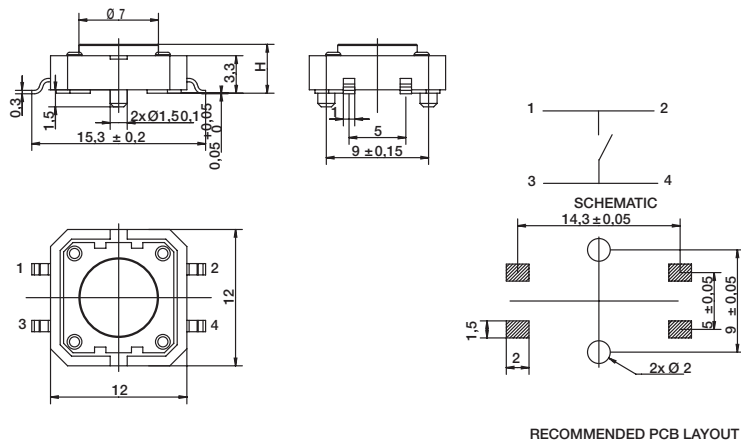


# PTS125 Series 12 mm Tact Switches

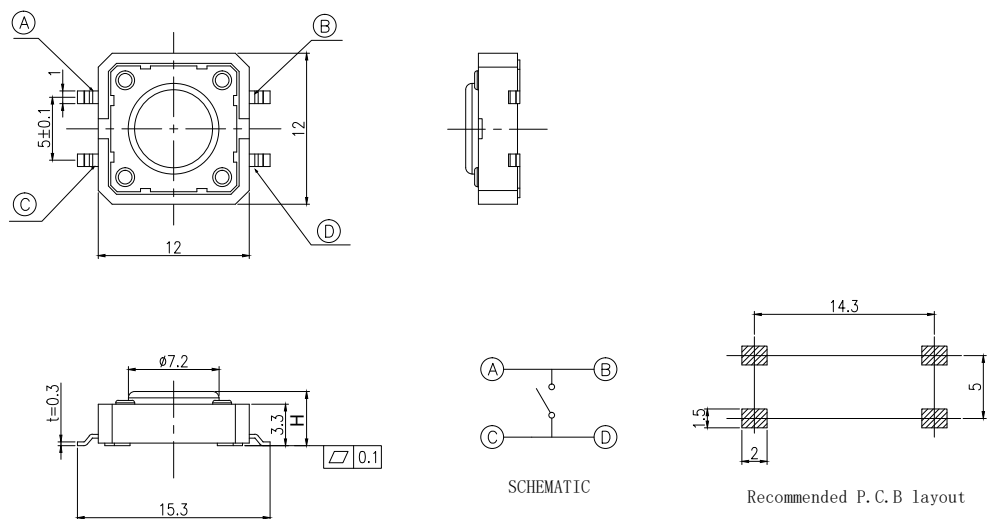
**NEW**

Tactile Switches

**SMT** VERSION WITH PEGS WITH ROUND ACTUATOR AND PEGS H= 4.3, 7.3 & 8.5 MM (other height upon request)



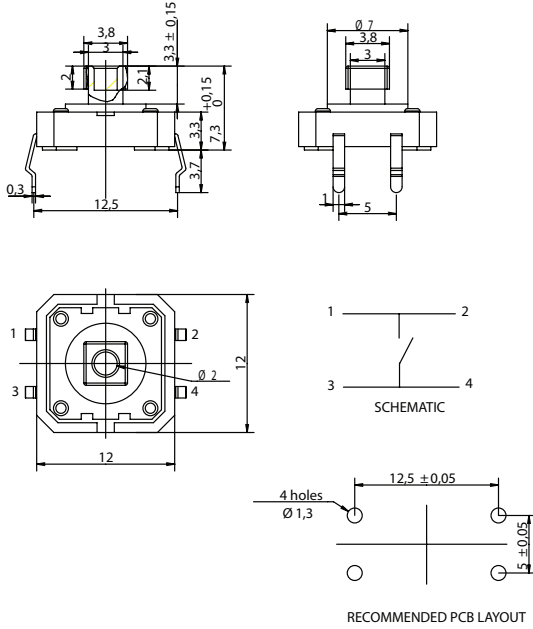
**SMT** VERSION WITHOUT PEGS WITH ROUND ACTUATOR AND PEGS H= 4.3, 7.3 & 8.5 MM (other height upon request)



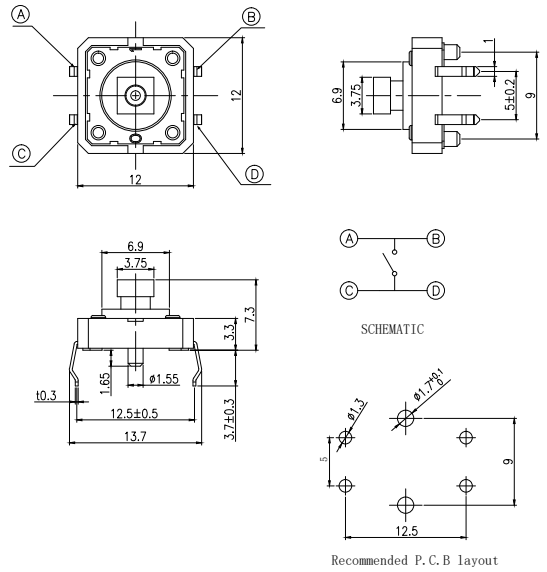
**NEW**

# PTS125 Series 12 mm Tact Switches

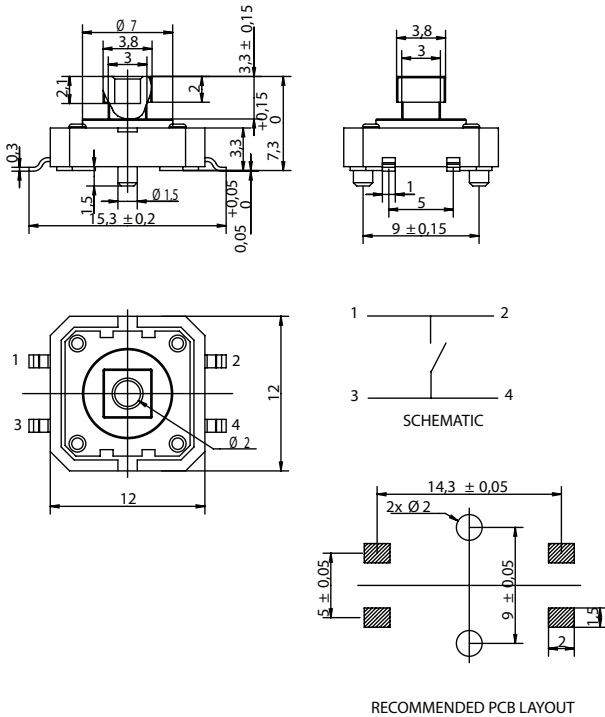
## THT VERSION WITHOUT PEGS WITH SQUARE SNAP FIT ACTUATOR H= 7.3 MM



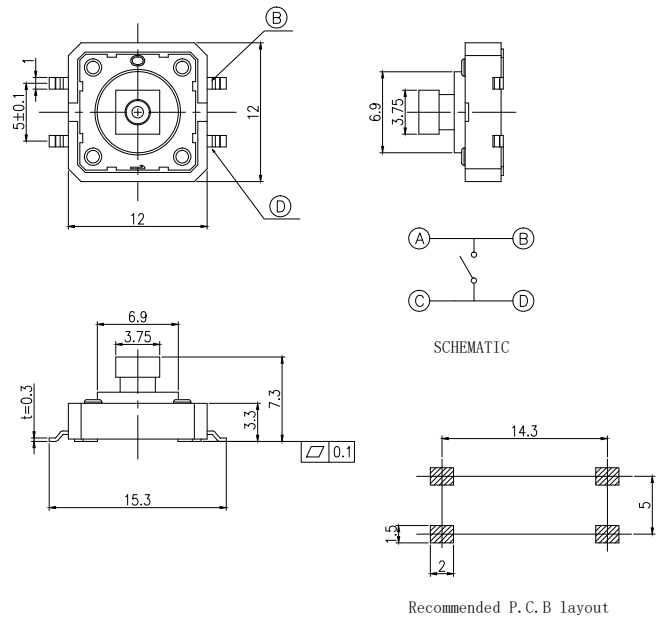
## THT VERSION WITHOUT PEGS WITH SQUARE SNAP FIT ACTUATOR H= 7.3 MM



## SMT VERSION WITH PEGS WITH SQUARE SNAP FIT ACTUATOR AND PEGS H= 7.3 MM



## SMT VERSION WITHOUT PEGS WITH SQUARE SNAP FIT ACTUATOR AND PEGS H= 7.3 MM

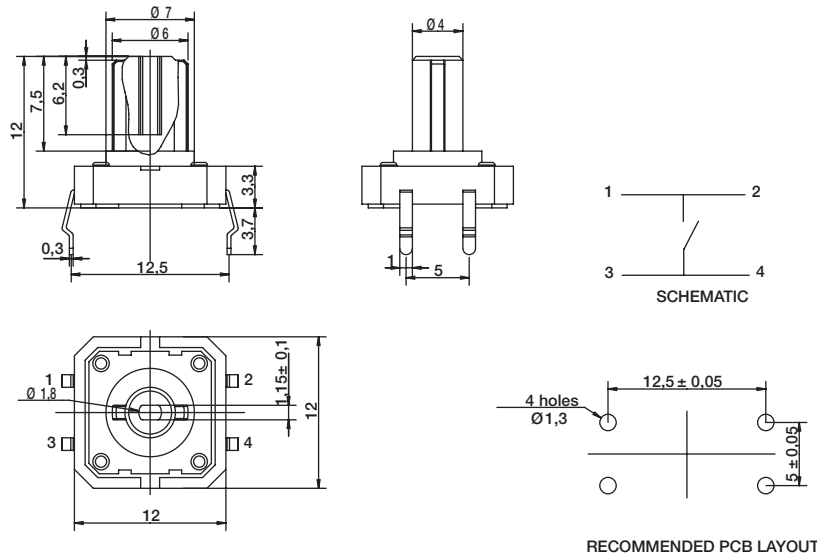


**Tactile Switches**

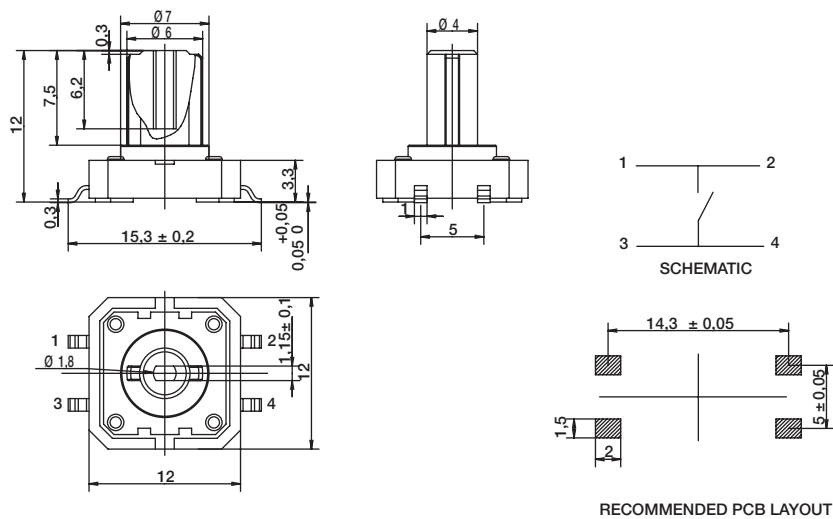
# PTS125 Series 12 mm Tact Switches

**NEW**

**THT** VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



**SMT** VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



Tactile Switches

B



# ITS Series Illuminated Tact Switch

Tactile Switches

## Features/Benefits

- Vertical and right angle SMT models
- Vertical and right angle thru-hole models
- Multiple caps and legends
- Several LED colors and bi-color options
- RoHS compliant /compatible

## Typical Applications

- Consumer electronics
- Server/storage
- Medical devices
- Test/Measurement/Instrumentation
- Audio/Video
- Computers/Peripherals
- Security



## Specification

FUNCTION: N.O. momentary action  
TERMINALS: SMT & Thru-hole

## Mechanical

OPERATING FORCE: 160 ± 50gf for V1; V2; V3; R1; R2 models  
220 ± 50 gf for R3N model  
OPERATING LIFE: 50,000 cycles (250m Ω max)  
RECOMMENDED OPERATING STROKE: 0.25mm ± 0.1mm

## Electrical

RATING: 50mA @ 12VDC  
CONTACT RESISTANCE: <100m Ω (initial)  
DIELECTRIC WITHSTANDING VOLTAGE:  
>250VAC (50-60 Hz) between terminals - 1 min.Ω  
INSULATION RESISTANCE: >100M Ω  
BOUNCE TIME: <10ms

## Packaging

Thru-hole: 200 pieces per tray  
SMT: tape & reel (see V2, V3 or R3N mounting style drawings)

## Environmental

OPERATING TEMPERATURE: -25°C to +70°C  
STORAGE TEMPERATURE: -25°C to +80°C

## Process

SOLDERABILITY: Thru-hole - wave compatible  
SMT - convection or IR reflow compatible

## Materials

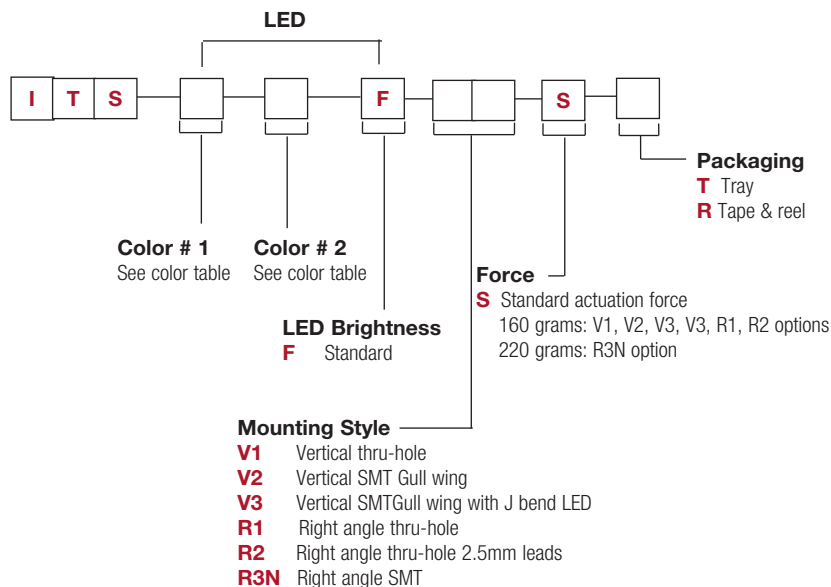
CONTACTS/TERMINALS: Base metal; brass  
Plating; Ag  
DOME: Base metal: Phosphor bronze  
Plating; Ag  
BASE: PA  
ACTUATOR: PA  
COVER: R3N option: Stainless steel  
V2 & V3 options - PPA  
Other options - PA

## Caps

Caps are ordered separately and shipped bulk. Thru-hole versions available with caps assembled under custom part number. Contact customer service for details.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



| LED Color |              |
|-----------|--------------|
| <b>00</b> | No light     |
| <b>10</b> | Red          |
| <b>12</b> | Red/Yellow   |
| <b>13</b> | Red/Green    |
| <b>14</b> | Red/Blue     |
| <b>20</b> | Yellow       |
| <b>21</b> | Yellow/Red   |
| <b>23</b> | Yellow/Green |
| <b>30</b> | Green        |
| <b>31</b> | Green/Red    |
| <b>32</b> | Green/Yellow |
| <b>40</b> | Blue         |
| <b>41</b> | Blue/Red     |
| <b>50</b> | White        |
| <b>60</b> | True green   |

\* Other colors available by request





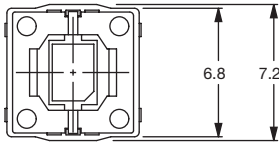
# ITS Series Illuminated Tact Switch

## LED COLOR / BRIGHTNESS

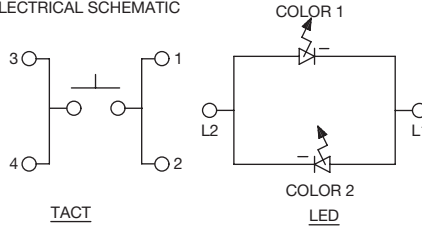
| LED Characteristic                     | units     | Standard LED Color Options |                 |                 |                 |   |                 |
|--|-----------|----------------------------|-----------------|-----------------|-----------------|---|-----------------|
|  |           | Red (1)                    | Yellow (2)      | Green (3)       | Blue (4)        | White (5)   | True Green (6)  |
| Recommended Operating                  | mA @ 5VDC | 20mA                       | 20mA            | 20mA            | 20mA            | 20mA  | 20mA            |
| Forward Current                        | mA        | 30 mA                      | 30 mA           | 30 mA           | 30 mA           | 30 mA   | 30 mA           |
| Peak Pulsing Current (1/8 duty @ 1kHz) | mA        | 125 mA                     | 125 mA          | 125 mA          | 125 mA          | 125 mA  | 125 mA          |
| Power Dissipation                      | mW        | 75 mW                      | 75 mW           | 75 mW           | 108 mW          | 108 mW  | 108 mW          |
| Forward Voltage @ 20mA                 | Volts     | 2.5 Volts Max.             | 2.5 Volts Max.  | 2.5 Volts Max.  | 3.6 Volts Max.  | 3.6 Volts Max.                                      | 3.6 Volts Max.  |
| Dominant Wavelength @ 20mA             | nm        | 637nm (Typical)            | 590nm (Typical) | 570nm (Typical) | 465nm (Typical) | CIE Coordinates<br>X= 0.25 ~ 0.33<br>Y= 0.24 ~ 0.34 | 522nm (Typical) |
| Wavelength at Peak Emission @ 20mA     | nm        | 645nm (Typical)            | 590nm (Typical) | 573nm (Typical) | 460nm (Typical) |   | 515nm (Typical) |
| Spectral Half Bandwidth @ 20mA         | nm        | 20nm (Typical)             | 20nm (Typical)  | 17nm (Typical)  | 25nm (Typical)  |   | 33nm (Typical)  |
| Luminous Intensity @ 20mA              | mcd       | 50mcd Minimum              | 125mcd Minimum  | 40mcd Minimum   | 100mcd Minimum  | 250mcd Minimum                                      | 500mcd Minimum  |
| Viewing Angle at 50% LV (@10mA)        | degrees   | 150° Typical               | 120° Typical    | 120° Typical    | 120° Typical    | 150° Typical  | 120° Typical    |

## MOUNTING STYLES

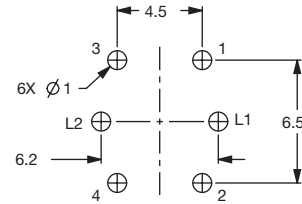
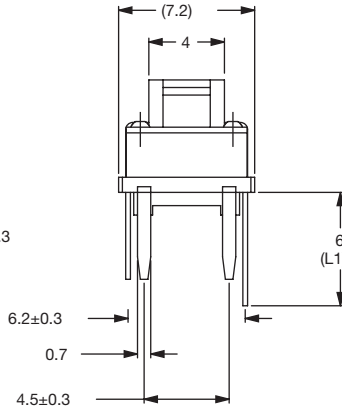
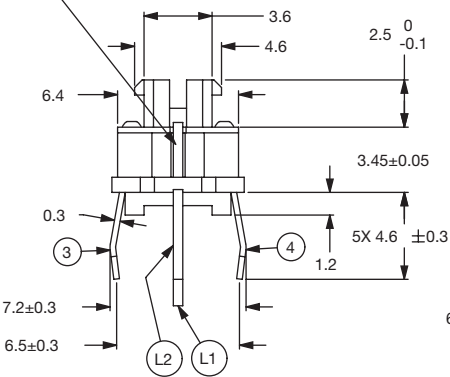
### V1 - Vertical Thru-hole



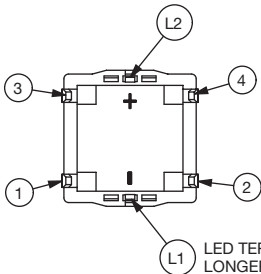
ELECTRICAL SCHEMATIC



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE SEE SCHEMATIC



P.C.B. LAYOUT



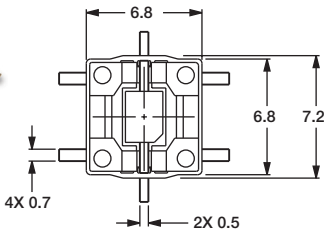
TRAY PACKAGING: 200 PIECES

## MOUNTING STYLES

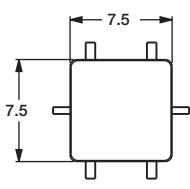
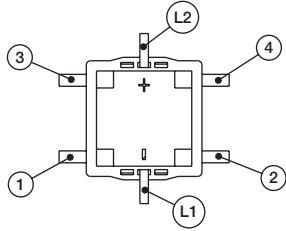
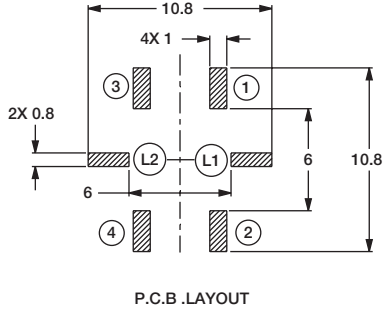
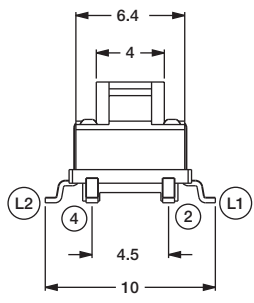
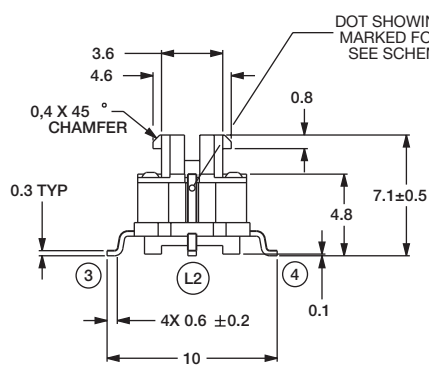
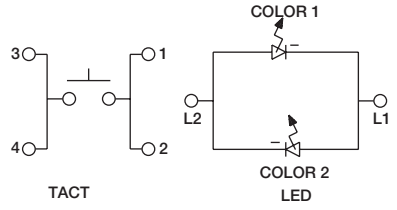
B

Tactile Switches

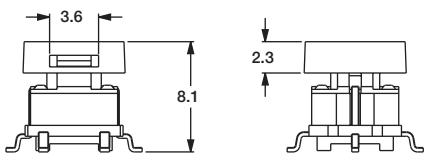
### V2 - Vertical SMT; Gullwing



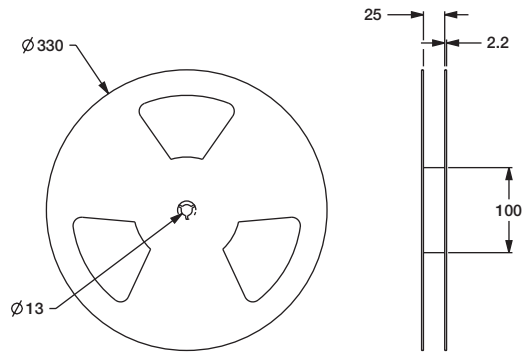
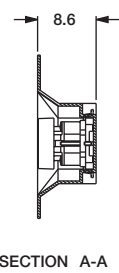
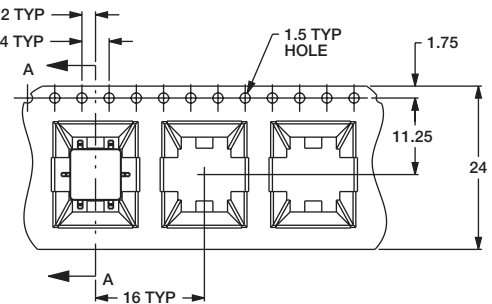
ELECTRICAL SCHEMATIC



TAPE & REEL: 500 PIECES



NOTES:  
1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.

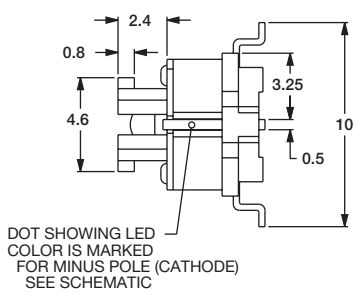
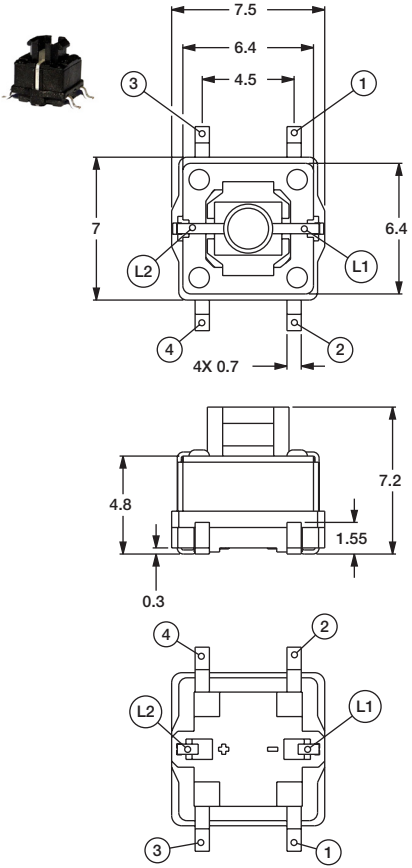


# ITS Series Illuminated Tact Switch

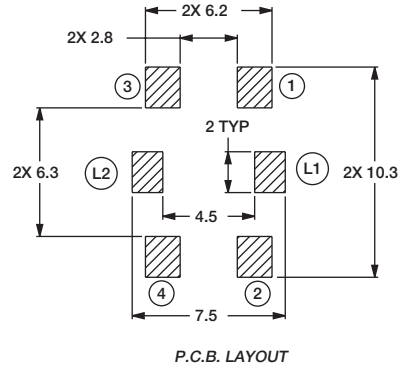
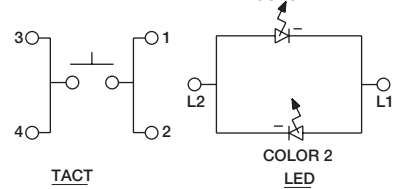
## MOUNTING STYLES

### V3 - Vertical SMT; Gull wing with J bend LED

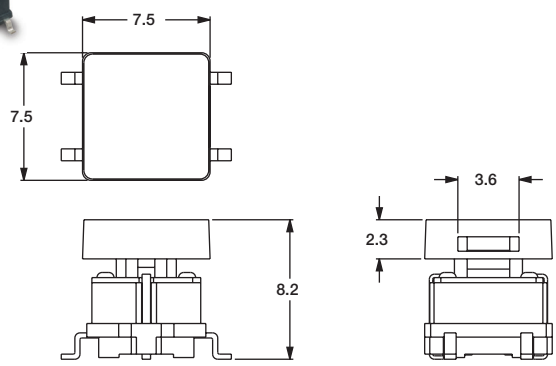
Tactile Switches B



ELECTRICAL SCHEMATIC



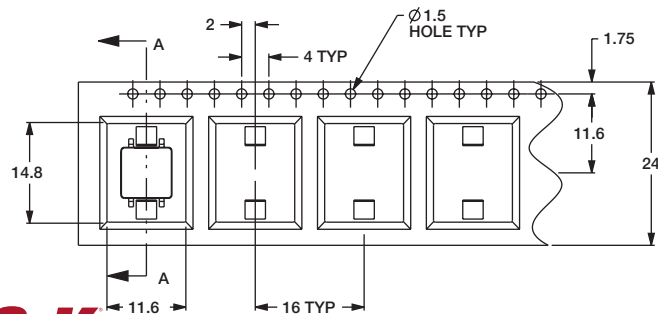
P.C.B. LAYOUT



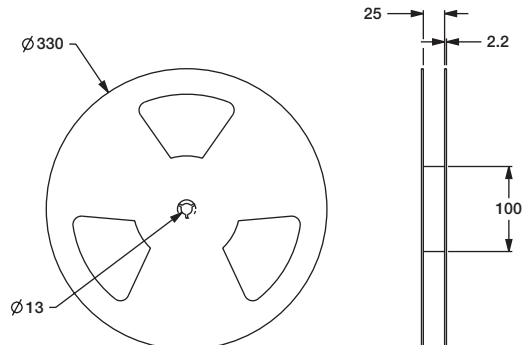
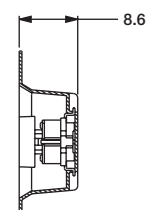
SCALE 3:1

TAPE & REEL: 500 PIECES

NOTES:  
1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.



SECTION A-A

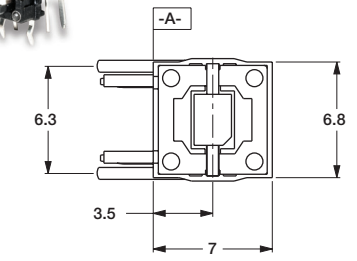


3 Dec 21

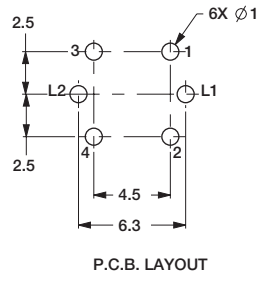
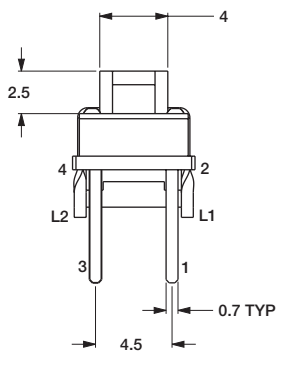
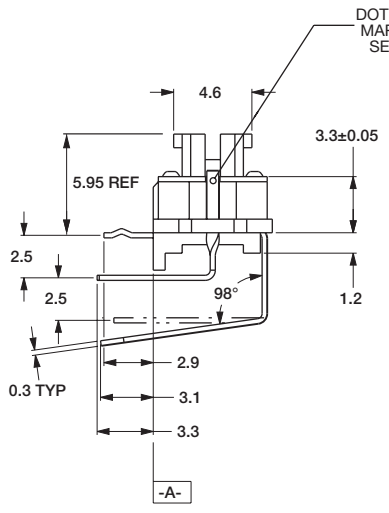
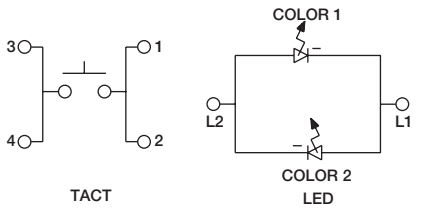
Dimensions are shown: mm  
Specifications and dimensions subject to change

## MOUNTING STYLES

### R1 - Right Angle; Thru-hole

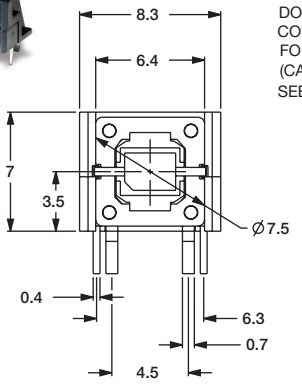


ELECTRICAL SCHEMATIC

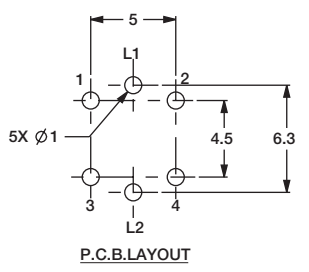
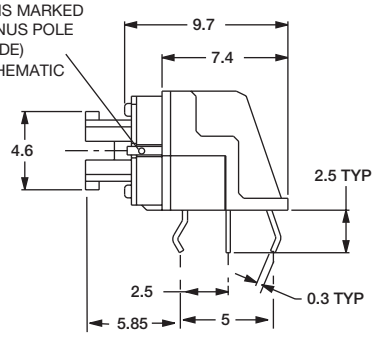


TRAY PACKAGING: 200 PIECES

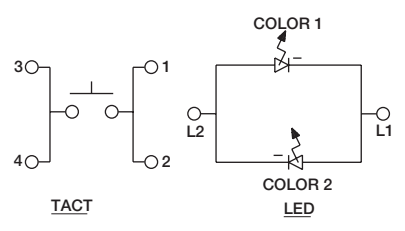
### R2 - Right Angle; Thru-hole 2.5mm leads



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE (CATHODE) SEE SCHEMATIC



ELECTRICAL SCHEMATIC



TRAY PACKAGING: 200 PIECES

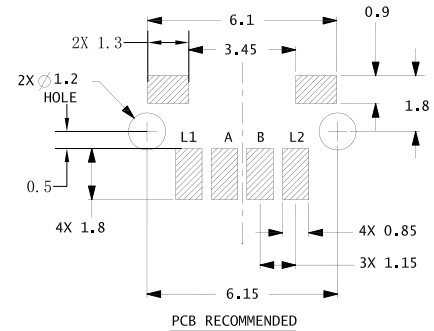
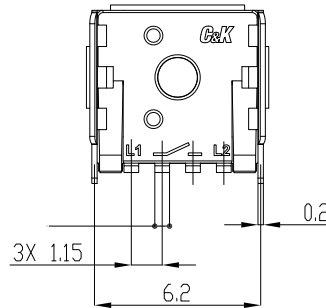
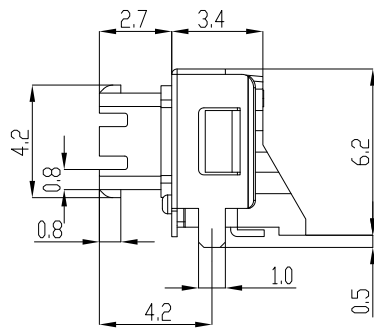
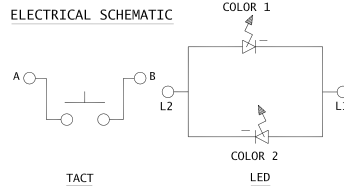
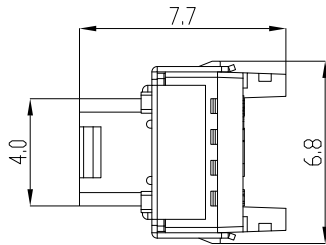
# ITS Series Illuminated Tact Switch

## MOUNTING STYLES

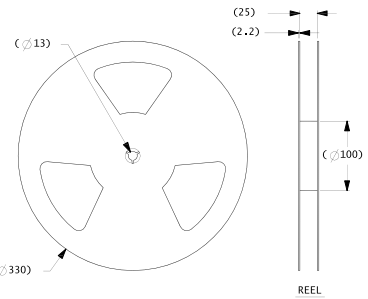
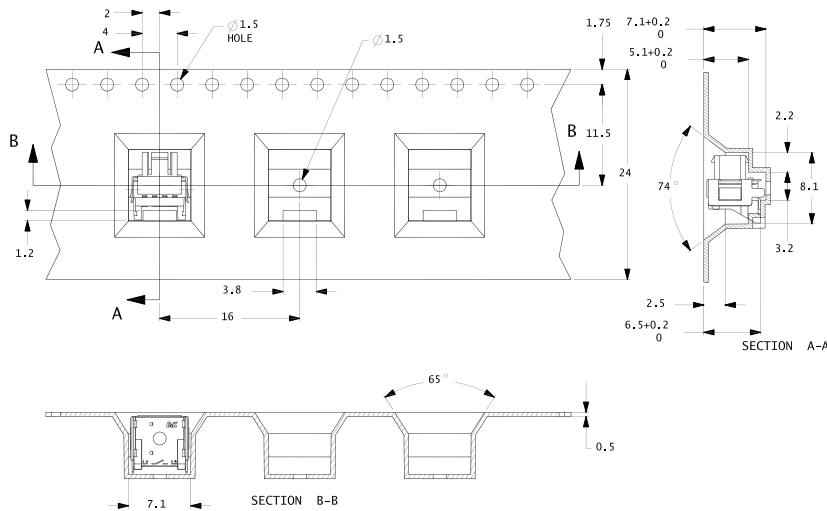
### R3N - Right Angle, SMT



Tactile Switches



TAPE & REEL: 500 PIECES



## FORCE

| OPTION CODE | FORCE  |
|-------------|--|
| <b>S</b>    | Standard<br>160 gf - V1, V2, V3, R1, R2 options<br>220 gf - R3N option |

## CAPS



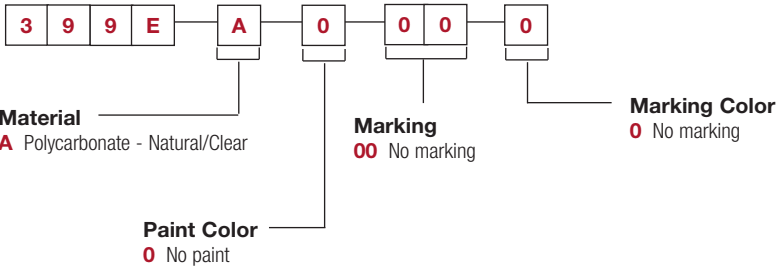
**B**

Tactile Switches

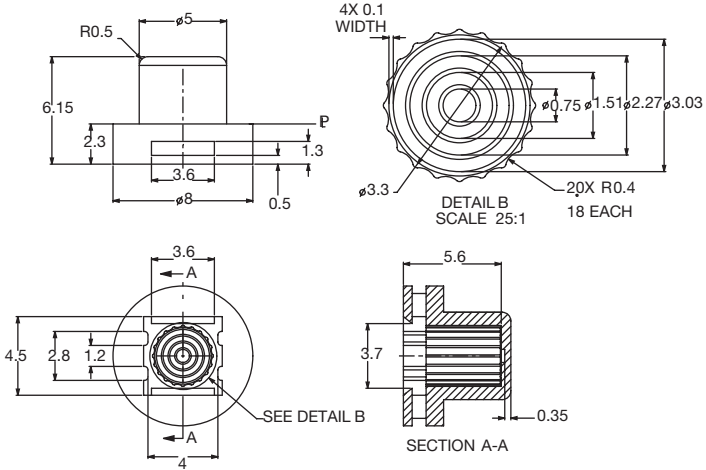
Use the individual ordering code for each cap



**399EA0000\***  
Round cap, clear



\* Not to be used with right angle versions



# ITS Series Illuminated Tact Switch

## CAPS



**400EA0000**

Natural/clear



**400EB0000**

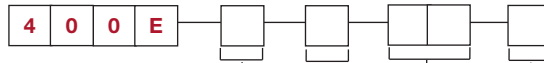
Translucent white, flat edge



**400ECA01E**

Matte silver paint laser etch, flat edge

\* All caps not to be used to R3N



**Material**

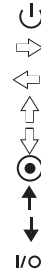
- A** Natural/Clear - polycarbonate\*
- B** Translucent white - polycarbonate\*
- C** Silver paint laser etch - polycarbonate

**Paint Color**

- 0** No paint\*
- A** Matte silver

**Laser Etch Marking**

- 00** No marking
- 01** Power On/Off
- 04** Arrow right
- 05** Arrow left
- 06** Arrow up
- 07** Arrow down
- 09** Power
- 33** Arrow up (fill)
- 34** Arrow down (fill)
- 97** I/O



**Marking Color**

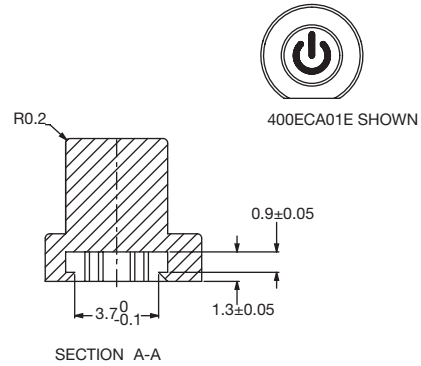
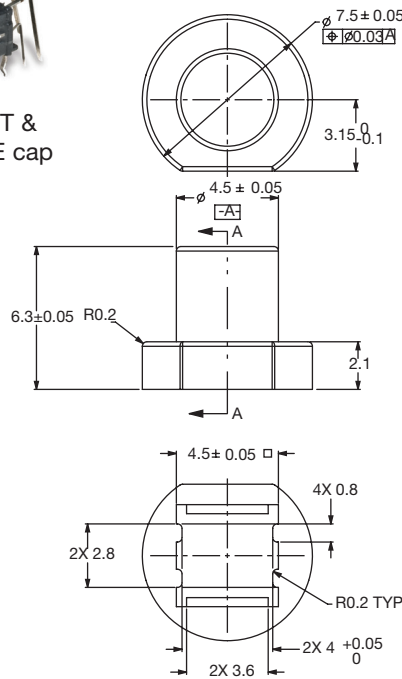
- 0** No marking
- E** Laser etch (painted caps only)

\* Material A has only one part number 400EA0000  
 \* Material B has only one part number 400EB0000  
 \* Paint color option 0 is not available for 400EC

Tactile Switches

B

ITSXXFR1ST &  
400ECA01E cap



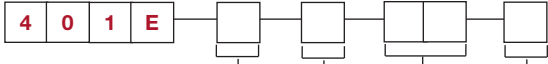
**400E cap dimensions shown are "as molded" (no paint).**

## CAPS



**401ECA06E**

Matte silver paint, laser etch,  
tall oval



**Material**

- A** Natural/clear - polycarbonate\*
- B** Translucent white - polycarbonate\*
- C** Paint laser etch - polycarbonate

**Paint Color**

- 0** No paint\*
- A** Matte silver

**Laser Etch Marking**

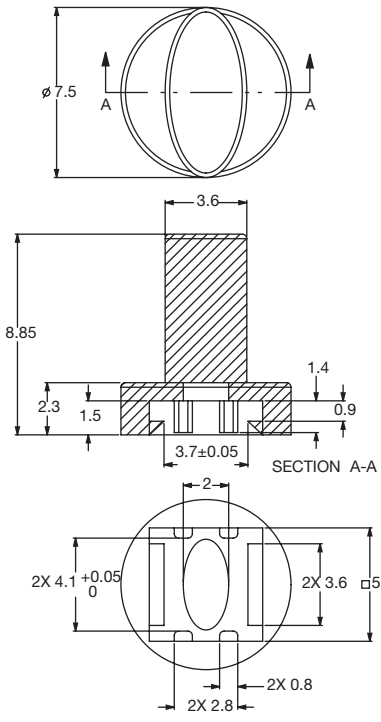
- 00** No marking
- 06** Arrow up
- 07** Arrow down
- 33** Arrow up (fill)
- 34** Arrow down (fill)

**Marking Color**

- 0** No marking
- E** Laser etch (painted caps only)



\* Material A has only one part number 400EA0000  
 \* Material B has only one part number 400EB0000  
 \* Paint color option 0 is not available for 400EC



**401E cap dimensions shown are "as molded" (no paint).**



# ILS Series Integrated LED Tact Switch

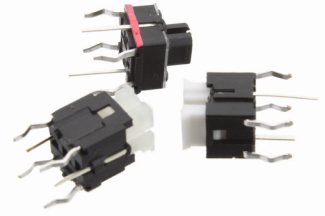
**NEW**

## Features/Benefits

- Compact Size
- THT versions
- Different height
- Several LED colors
- High life cycles

## Typical Applications

- Consumer electronics
- Health monitoring device
- Test & measurement
- Audio/Video control board



## Specification

TRAVEL: 0.25 mm ± 0.1 mm

## Mechanical

OPERATING LIFE: 100,000 cycles

## Electrical

RATING: 100mA max. @ 30VDC  
10µA min. @ 1VDC

INSULATION RESISTANCE: 100M Ω min.

DIELECTRIC WITHSTANDING VOLTAGE:

250VAC (50-60 Hz 2mA) for 1 min

BOUNCE TIME: ON/OFF 5ms max.

INITIAL CONTACT RESISTANCE: 100m Ω max.

## Environmental

OPERATING TEMPERATURE: -40°C to +85°C

STORAGE TEMPERATURE: -40°C to +85°C

## Packaging

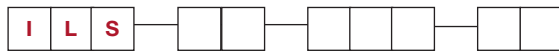
Bulk packing in bag of 500 pieces  
2 bags per carton box

\* All caps are not recommended to soldering process

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



### Style & Height

**TA** 7.20 mm height

**TB** 9.00 mm height

**TC** 7.00 mm height

### Actuation Force

**180** 180gf

**250** 250gf

### LED Color

**10** Red

**30** Yellow green

**40** Blue

**50** White

**60** Green

**NEW**

# ILS Series Integrated LED Tact Switch

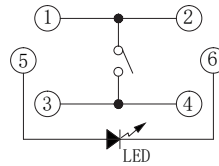
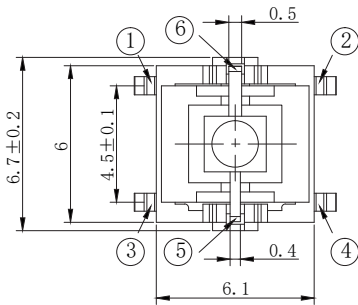
## LED CHARACTERISTICS

| STANDARD LED COLOR OPTIONS |        |           |       |               |                    |               |               |               |
|----------------------------|--------|-----------|-------|---------------|--------------------|---------------|---------------|---------------|
| LED Parameter              | Symbol | Condition | UNITS | RED<br>10     | YELLOW/GREEN<br>30 | BLUE<br>40    | WHITE<br>50   | GREEN<br>60   |
| Power Dissipation          | Pd     | -         | mW    | 52            | 60                 | 120           | 18            | 120           |
| Forward Current            | IF     | -         | mA    | 20            | 20                 | 30            | 5             | 30            |
| Peak Forward Current *1    | IFP    | -         | mA    | 100           | 100                | 100           | 100           | 100           |
| Reverse Voltage            | VR     | -         | V     | 5             | 5                  | 5             | 5             | 5             |
| Operating Temperature      | Topr   | -         | -     | -40°C to 85°C | -40°C to 85°C      | -40°C to 85°C | -40°C to 85°C | -40°C to 85°C |
| Storage Temperature        | Tstg   | -         | -     | -40°C to 85°C | -40°C to 85°C      | -40°C to 85°C | -40°C to 85°C | -40°C to 85°C |
| Forward Voltage            | Vf     | F=5mA     | V     | 2.6 max.      | 2.3 max.           | 3.2 max.      | 3.6 max.      | 3.4 max.      |
| Luminous Intensity         | Iv     | F=5mA     | mcd   | 140 min.      | 100 min.           | 63 min.       | 94 min.       | 1000 min.     |
| Reverse Current            | IR     | F=5mA     | μA    | 100 max.      | -                  | -             | 1 max.        | -             |
| Peak Wave Length           | λp     | F=5mA     | nm    | 644           | 570                | 460           | -             | 521.5         |
| Dominant Wave Length       | λd     | F=5mA     | nm    | 620 min.      | 567-573            | 465-470       | -             | 515-525       |
| Spectral Line Half-width   | Δλ     | F=5mA     | nm    | 20            | 30                 | 30            | -             | 30            |
| Viewing Angle              | 2θ1/2  | F=5mA     | deg   | 35            | 35                 | 35            | 35            | 35            |

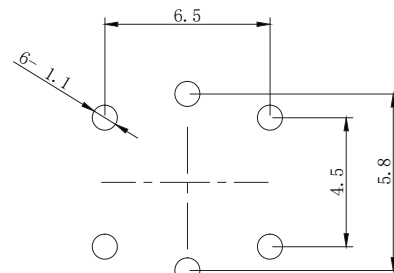
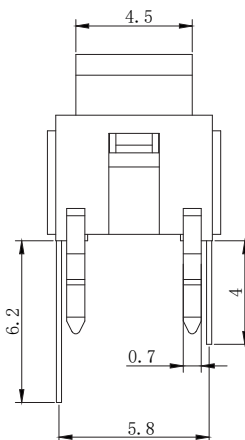
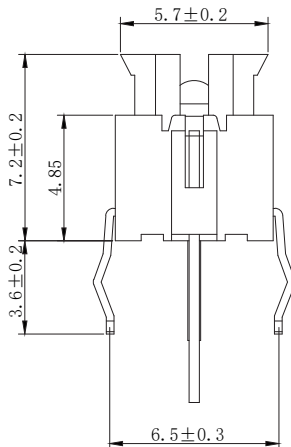
Tactile Switches

## STYLES

**TA**



CIRCUIT DIAGRAM



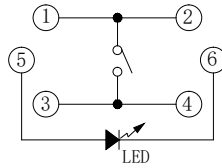
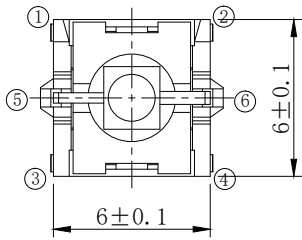
P.C.B LAND DIMENSION

# ILS Series Integrated LED Tact Switch

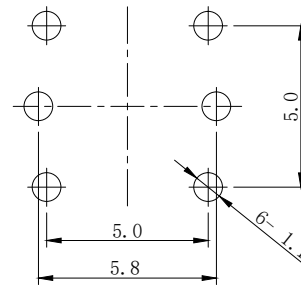
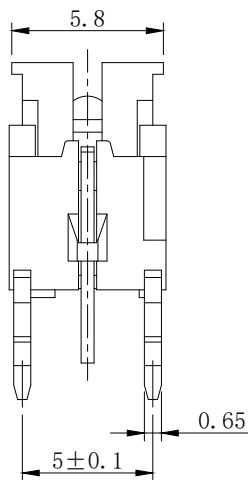
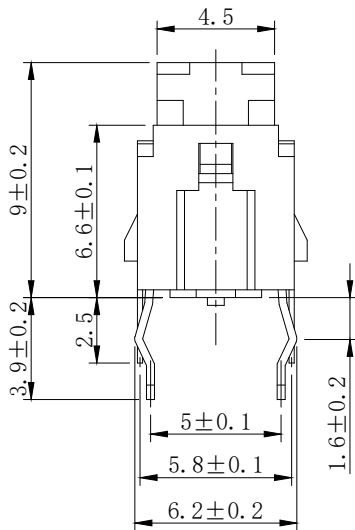
**NEW**

## STYLES

**TB**

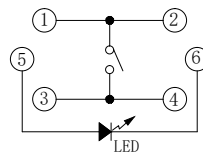
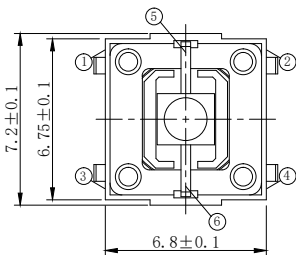


CIRCUIT DIAGRAM

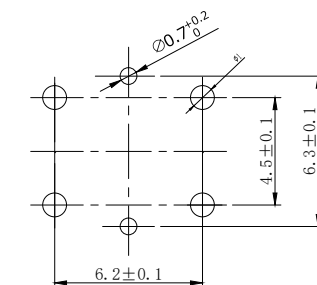
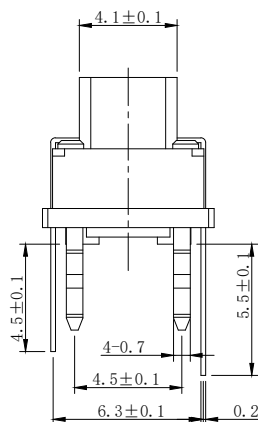
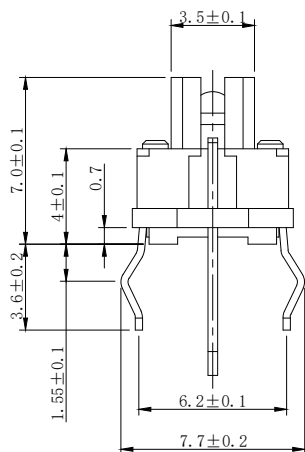


P.C.B LAND DIMENSION

**TC**



CIRCUIT DIAGRAM



P.C.B LAND DIMENSION



Tactile Switches

B



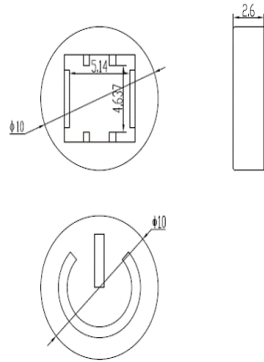
**NEW**

# ILS Series Integrated LED Tact Switch

## CAPS

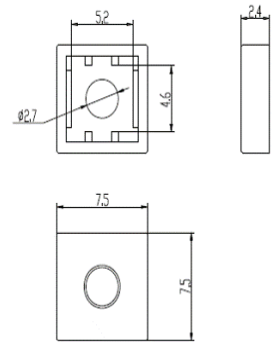
### ILSCAPR0690-10

Round cap, grey with power logo



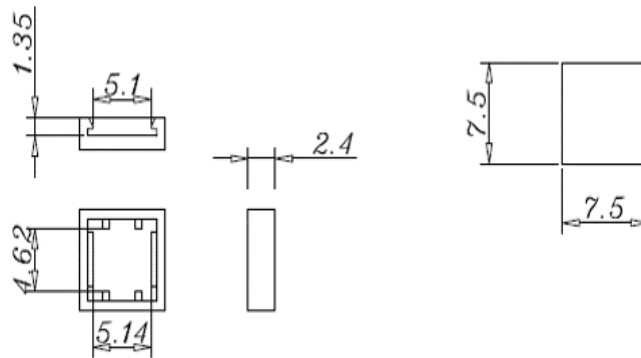
### ILSCAPS757501

Square cap with hole



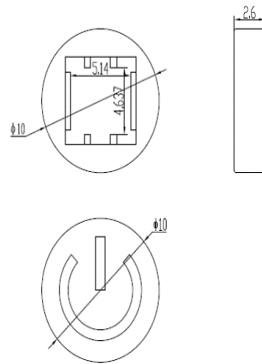
### ILSCAPS757502 (Nature) ILSCAPS757503 (Grey)

Square cap without hole



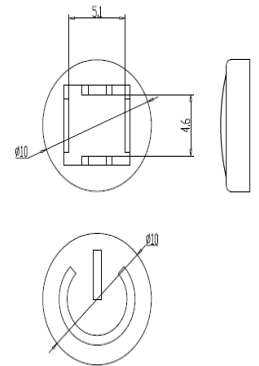
### ILSCAPR0690-10B

Round cap, black with power logo



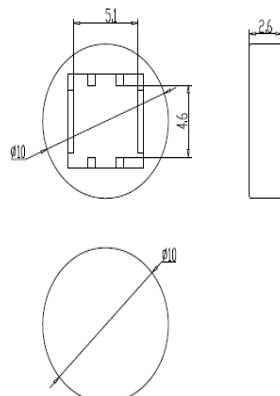
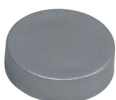
### ILSCAPR0690

Round cap, grey with power logo



### ILSCAPR0691

Round cap, without power logo



Tactile Switches

# TLS Series Soft Sound Tact Switch

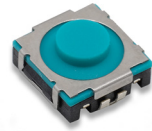
**NEW**

## Features/Benefits

- New soft sound
- Soft actuator
- IP54
- Long life
- J terminations
- Tape & reel

## Typical Applications

- Automotive interior controls
- Automatic gear shift paddle
- Steering wheel
- Window lifter
- Seat adjustment module



Tactile Switches

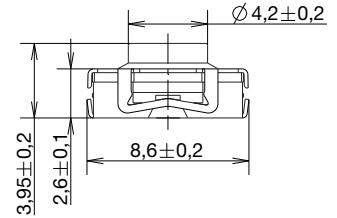
| Type              | Force (N)    | Tactile Feeling (%) | Travel (mm) | Life (cycles) |
|-------------------|--------------|---------------------|-------------|---------------|
| TLS A 040J LFS    | 4 ± 0.8      | 50 ± 15             | 0.9 ± 0.3   | 1,000,000     |
| TLS A 070J LFS    | 7 ± 1.5      |                     |             | 500,000       |
| TLS A 100J LFS    | 10 ± 2       |                     |             | 300,000       |
| TLS A 040 T3J LFS | 4 ± 0.8      | 30 ± 15             | 0.9 ± 0.3   | 1,000,000     |
| TLS A 070 T3J LFS | 7 ± 1.5      |                     |             | 500,000       |
| TLS A 100 T3J LFS | 10 ± 2       |                     |             | 300,000       |
| TLS B 040J LFS    | 4 +1.0/-0.5  | 50 ± 15             | 0.75 ± 0.2  | 1,000,000     |
| TLS B 060J LFS    | 6 +1.5/-0.75 |                     |             | 500,000       |

POWER: 10µ VA min. / 0.8 VA max.

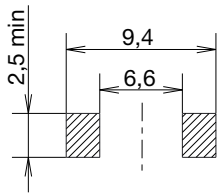
VOLTAGE: DC 1V min. / 16 V max.

CURRENT: 10µA min. / 50 mA max.

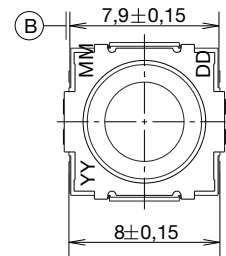
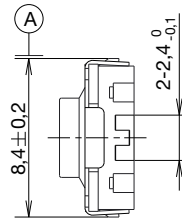
OPERATING TEMPERATURE: -40°C / +90°C



### PCB LAYOUT



### CIRCUIT DIAGRAM



## Packaging

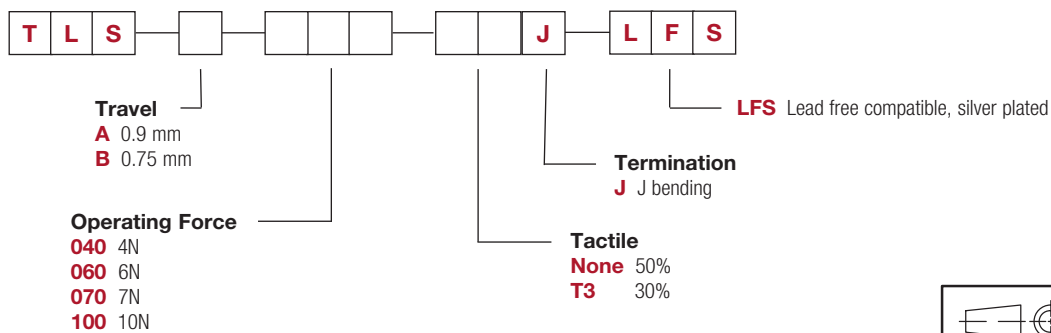
Switches in reels of 900 pieces.

Dimensions of reels according to EIA 481B. External diameter 330 mm.

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm  
Specifications and dimensions subject to change



29 Jun 21

**NEW**

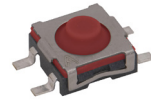
# TLSM Series 6 mm Compact Top Mount Endurance SMT Tact Switch

## Features/Benefits

- 6.0 x 6.1 mm dimension
- Height 3.45 mm
- Soft actuator
- Long life - 3M cycles
- IP54

## Typical Applications

- Elevator button & alarm
- Robotic vaccum
- Door handle
- Mower



## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: SPDT, NC  
 TERMINALS: SMT termination  
 TRAVEL: 0.3 ± 0.2 mm

## Mechanical

OPERATING LIFE: 2,000,000 cycles

## Electrical

VOLTAGE: DC 1V to 16V  
 CURRENT: 10µA to 50mA  
 CONTACT RESISTANCE: 200mΩ max.  
   500mΩ max. after testing  
 INSULATION RESISTANCE: 100 MΩ min.  
 DIELECTRIC VOLTAGE: AC 250V

## Environmental

OPERATING TEMPERATURE: -40°C to 90°C  
 STORAGE TEMPERATURE: -40°C to 90°C

## Process

SOLDERING: This component is suited to the following  
 methods: Infrared Reflow Soldering in accordance with  
 IEC61760-1

## Packaging

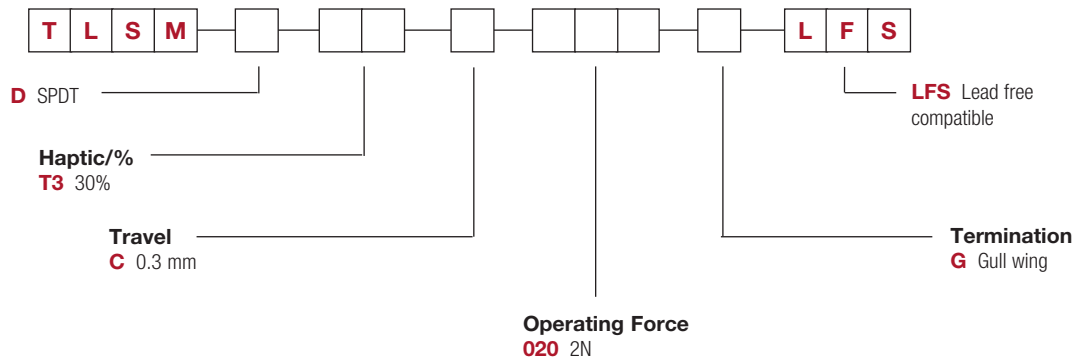
1100 pieces per reel

**B**  
Tactile Switches

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.

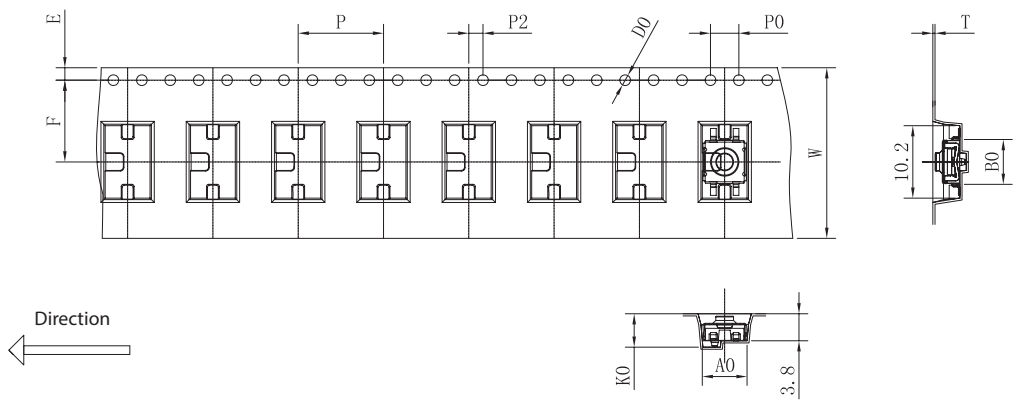
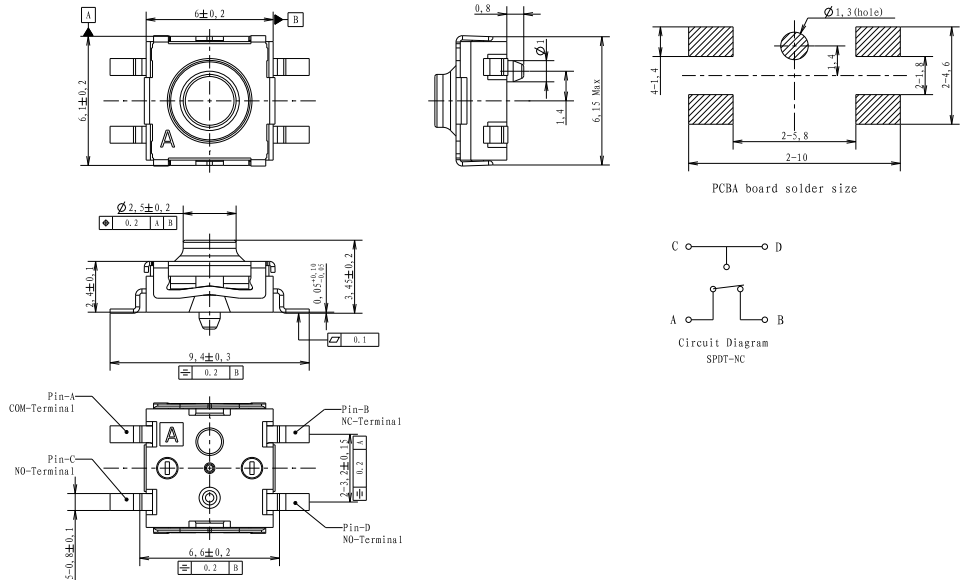


# TLSM Series 6 mm Compact Top Mount Endurance SMT Tact Switch

**NEW**

Tactile Switches

B



Dimensions are shown: mm  
Specifications and dimensions subject to change



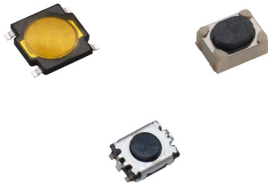
5 Aug 22

B-176

www.ckswitches.com

# RK Series Microminiature SMT Top Actuated Tact Switch

**NEW**



## Features/Benefits

- Low profile & microminiature package
- SMT termination
- Hard actuator
- Different actuation forces
- Life cycles up to 500K

## Typical Applications

- Keyfob
- Navigation
- Health & medical devices

## Specifications

FUNCTION: momentary action  
CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
TERMINALS: SMT termination  
TRAVEL:

|      |               |
|------|---------------|
| RKA2 | 0.20 ± 0.1 mm |
| RKB2 | 0.20 ± 0.1 mm |
| RKC  | 0.15 ± 0.1 mm |

## Mechanical

| Product Description  | Operating Force | Life Cycles |
|----------------------|-----------------|-------------|
| RKB2SJM250SMTR LFS   | 180 gf          | 100,000     |
| RKB2SJK250SMTR LFS   | 250 gf          | 100,000     |
| RKB2SJG250SMTR LFS   | 400 gf          | 100,000     |
| RKA2SGN055SMTR LFS   | 100 gf          | 1,000,000   |
| RKA2SGM055SMTR LFS   | 160 gf          | 1,000,000   |
| RKA2SGK055SMTR LFS   | 250 gf          | 200,000     |
| RKA2SGG055SMTR LFS   | 400 gf          | 200,000     |
| RKA2SGS055SMTR LFS   | 540 gf          | 150,000     |
| RKC GG140 SMTR LFS   | 450 gf          | 200,000     |
| RKC GG140 G SMTR LFS | 450 gf          | 200,000     |

## Electrical

|      | Max. Voltage | Max. Current | Contact Resistance | Insulation Resistance |
|------|--------------|--------------|--------------------|-----------------------|
| RKA2 | DC 15V       | 20 mA max.   | 500mΩ max.         | 50MΩ min.             |
| RKB2 | DC 12V       | 50 mA max.   | 200mΩ max.         | 100MΩ min.            |
| RKC  | DC 12V       | 50 mA max.   | 2Ω max.            | 100MΩ min.            |

DIELECTRIC STRENGTH: 250 VA C (1 minute)  
BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE:

|      |               |
|------|---------------|
| RKA2 | -40°C to 85°C |
| RKB2 | -40°C to 90°C |
| RKC  | -40°C to 85°C |

## Process

SOLDERING: This component is suited to the following methods:  
Infrared Reflow Soldering in accordance with IEC61760-1

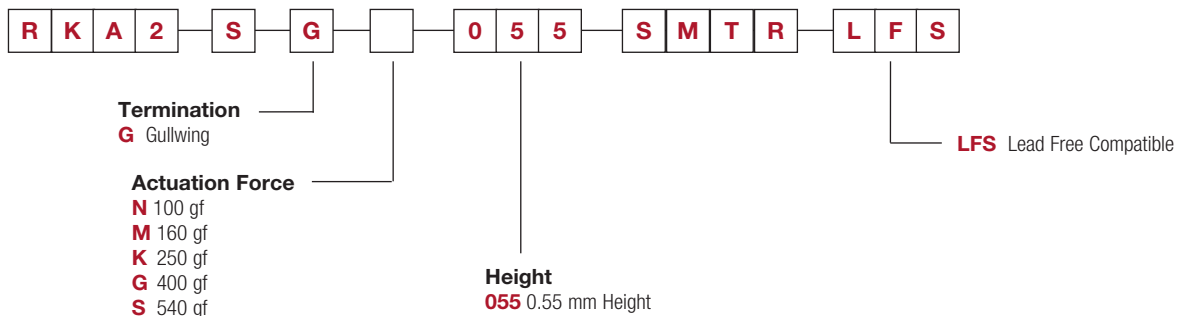
## Packaging

|      |                       |
|------|-----------------------|
| RKA2 | 5,000 pieces per reel |
| RKB2 | 3,000 pieces per reel |
| RKC  | 9,500 pieces per reel |

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed below, please consult your local representative.

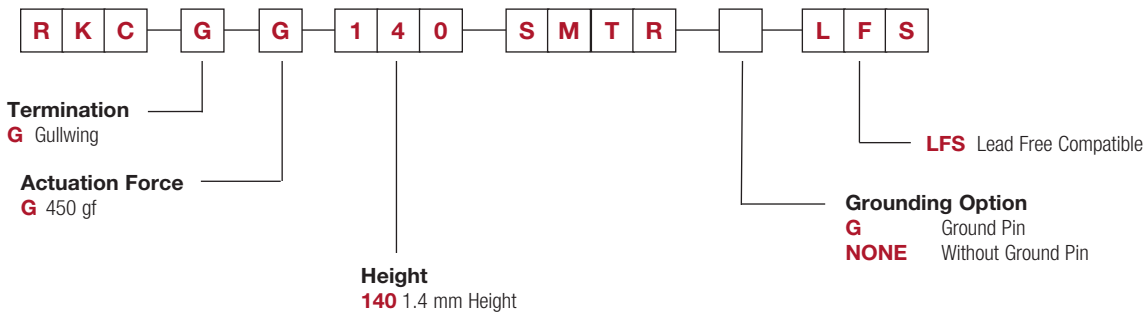
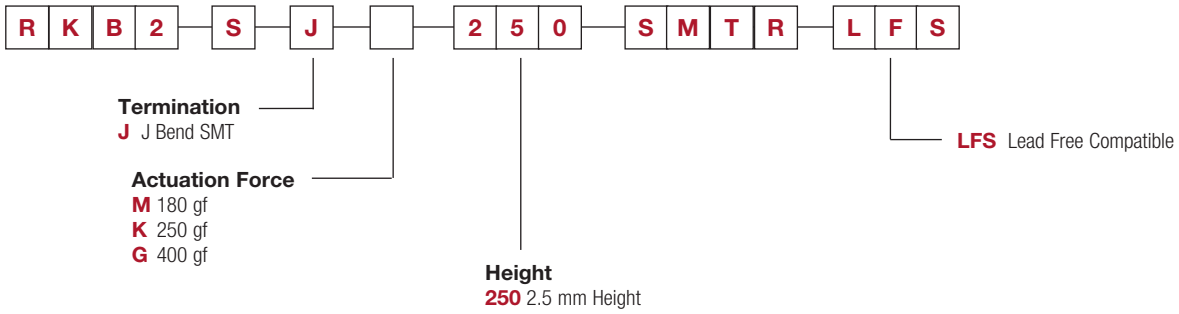




**NEW**

# RK Series Microminiature SMT Top Actuated Tact Switch

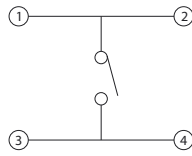
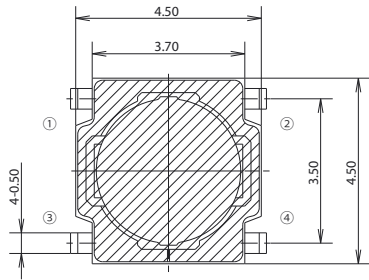
Tactile Switches  
**B**



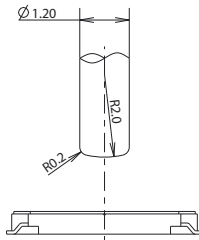
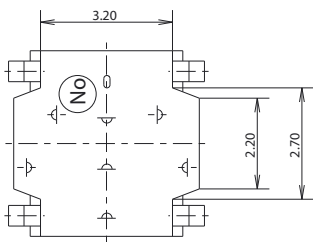
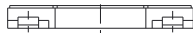
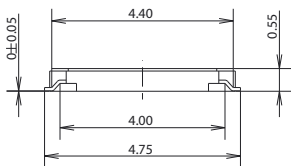
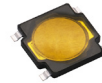
# RK Series Microminiature SMT Top Actuated Tact Switch

**NEW**

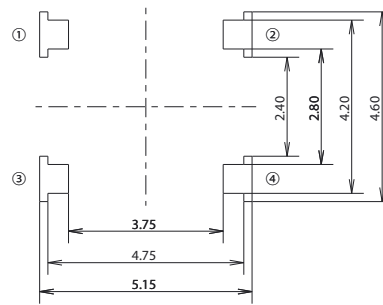
**RKA2** 4.5 X 4.5 X 0.55 MM



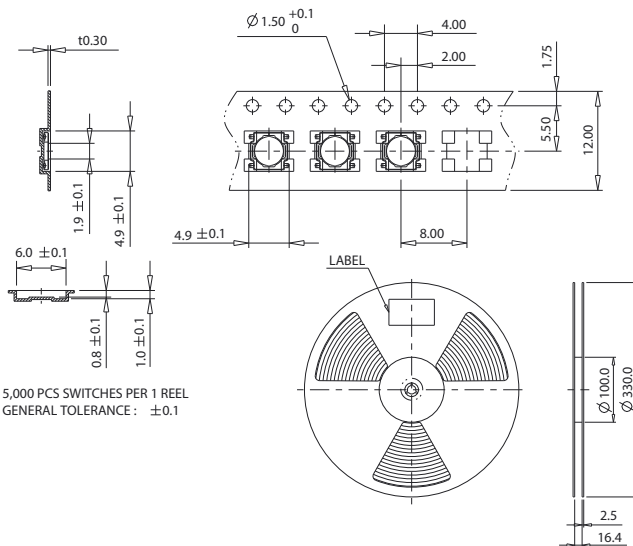
CIRCUIT DIAGRAM



SET MAKER KNOB SIZE



P.C.B MOUNTING SOLDER LAND DIMENSION



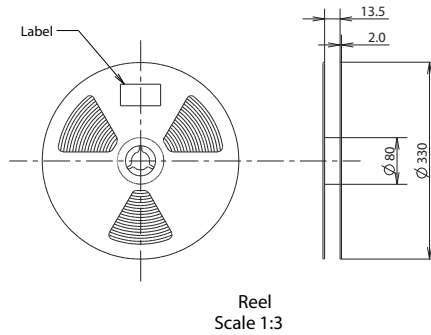
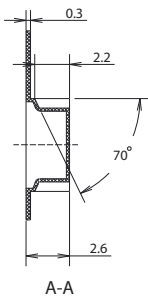
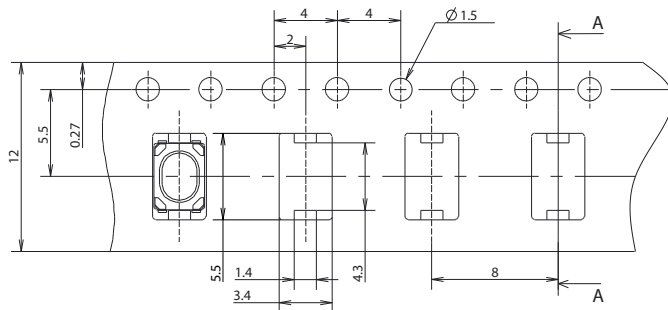
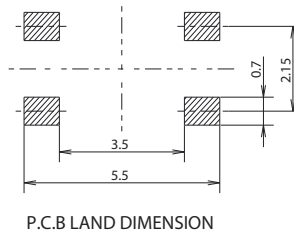
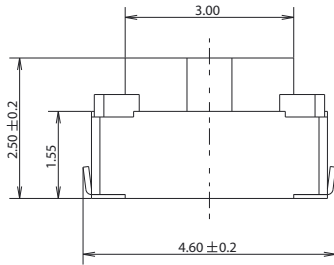
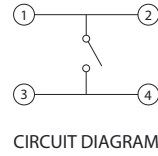
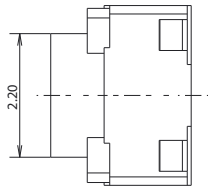
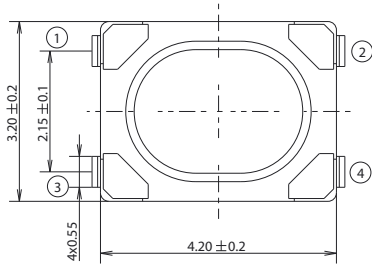
- 1. 5,000 PCS SWITCHES PER 1 REEL
- 2. GENERAL TOLERANCE : ±0.1

**B** Tactile Switches

**NEW**

# RK Series Microminiature SMT Top Actuated Tact Switch

**RKB2** 4.2 X 3.2 X 2.5 MM



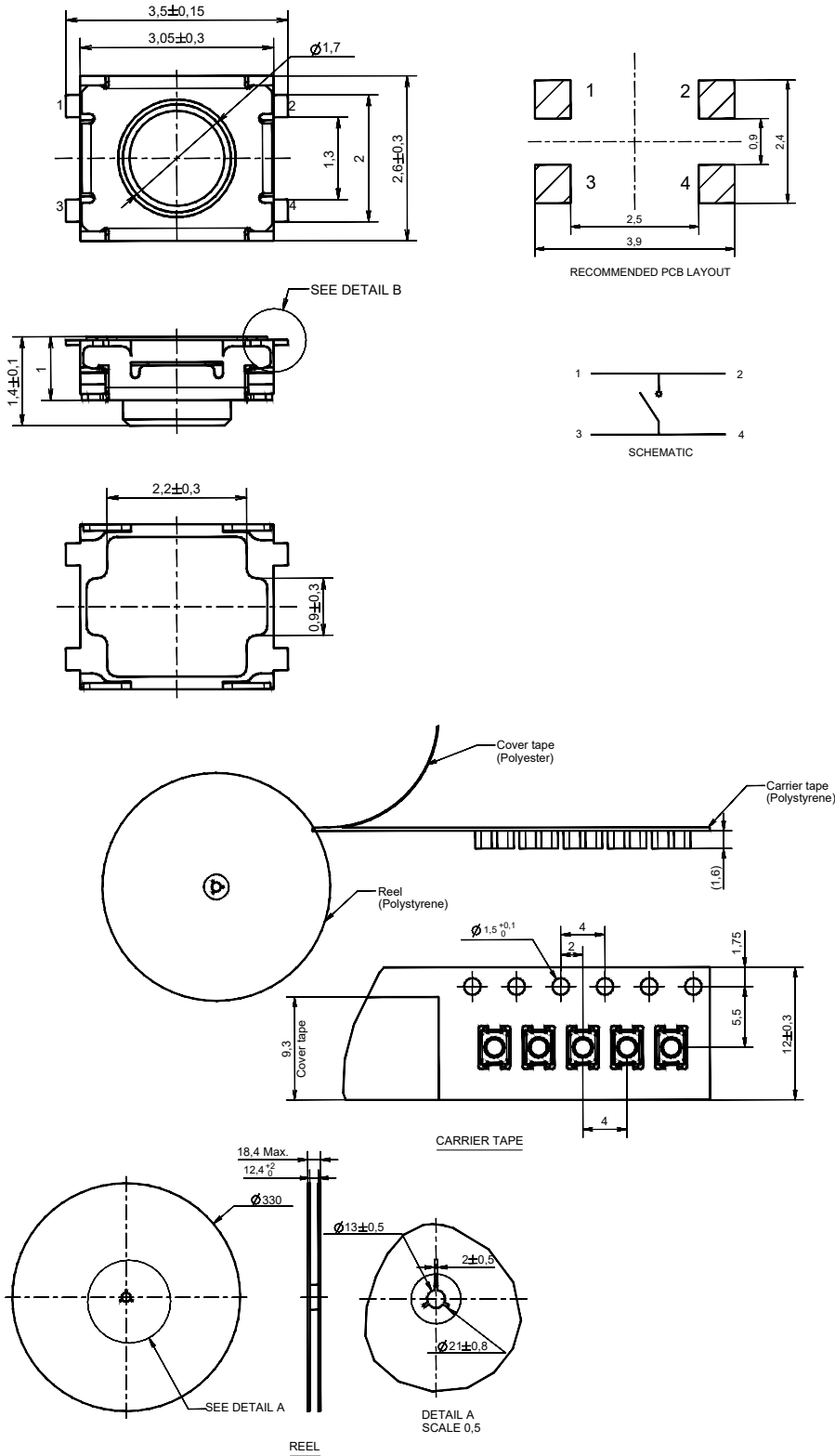
Note:  
1. 3K pcs Switches per reel.  
2. General tolerance: 0.3mm.

Tactile Switches

# RK Series Microminiature SMT Top Actuated Tact Switch

**NEW**

**RKC** 3.5 X 2.6 X 1.4 MM



**B**  
Tactile Switches

# RKC2 Series Microminiature SMT Top Actuated Tact Switch

**NEW**



## Features/Benefits

- 1.7 mm height, 3.5 x 2.7 mm size
- SMT termination
- Hard actuator
- 180, 250, 350 & 500 gf actuation forces
- 100k to 200k cycles

## Typical Applications

- Automotive keyfob
- High-end consumer
- Health & medical devices

Tactile Switches

## Specifications

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST N.O.  
 TERMINALS: SMT termination  
 TRAVEL: 0.15 ± 0.1 mm

## Mechanical

| Product Description | Life Cycles |
|---------------------|-------------|
| RKC2SJM170SMTR LFS  | 200,000     |
| RKC2SJK170SMTR LFS  | 200,000     |
| RKC2SJR170SMTR LFS  | 200,000     |
| RKC2SJF170SMTR LFS  | 100,000     |
| RKC2SJFG170SMTR LFS | 200,000     |

## Electrical

MAXIMUM VOLTAGE: 12 VDC  
 MAXIMUM CURRENT DC: 20 mA  
 CONTACT RESISTANCE: 100 mΩ  
 INSULATION RESISTANCE: 100 MΩ min.  
 DIELECTRIC STRENGTH: 250 VA C (1 minute)  
 BOUNCE TIME: ≤ 10 ms

## Environmental

OPERATING TEMPERATURE: -40°C to 85°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

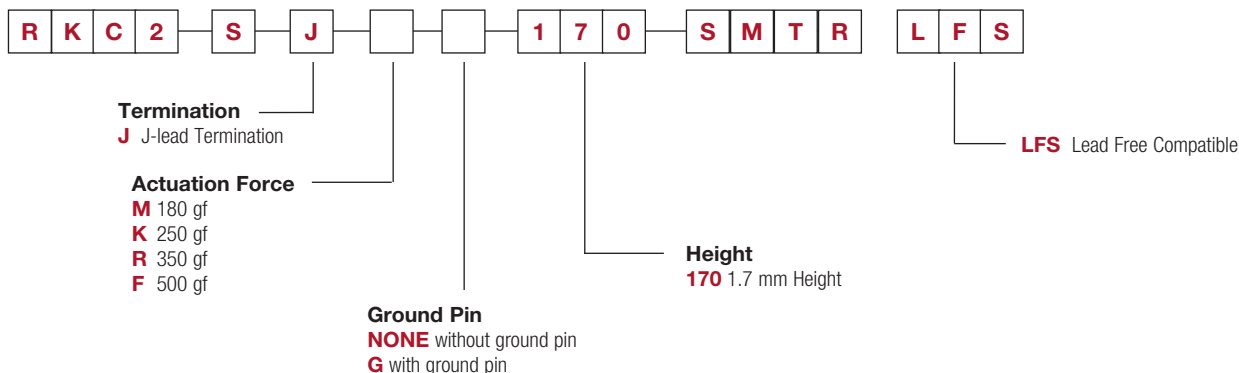
## Packaging

4,000 pieces per reel

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

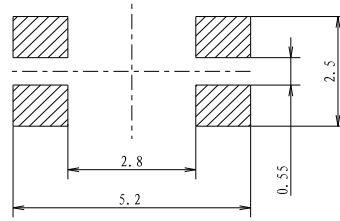
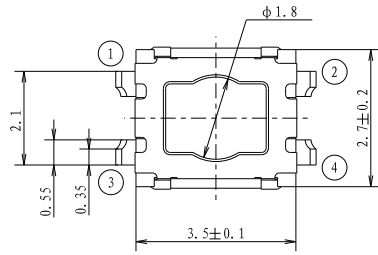
For any part number different from those listed below, please consult your local representative.



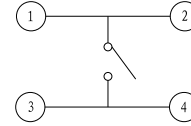
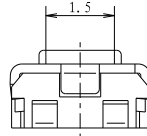
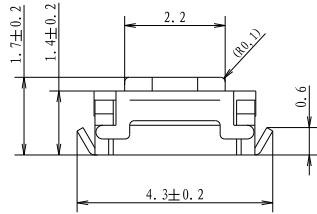
**NEW**

# RKC2 Series Microminiature SMT Top Actuated Tact Switch

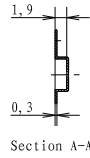
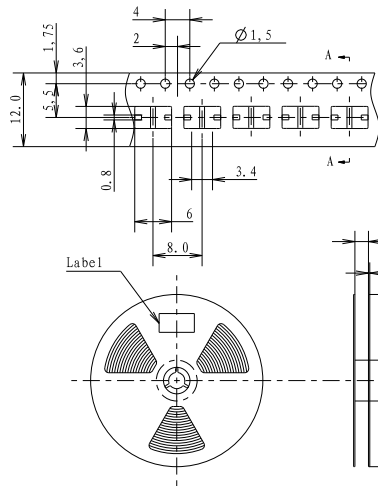
## Standard Version without Ground Pin



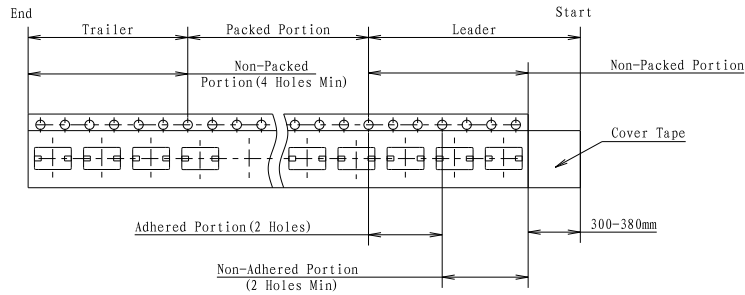
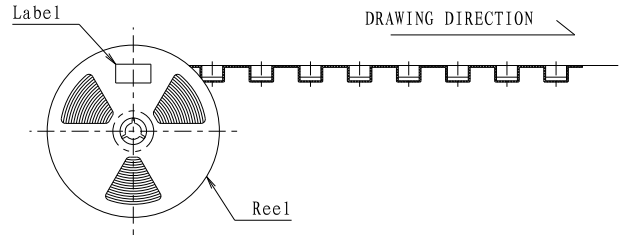
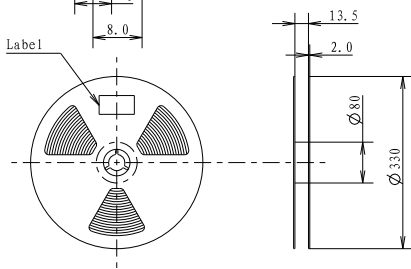
P. C. B LAND DIMENSION



CIRCUIT DIAGRAM



Section A-A

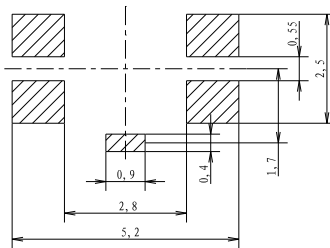
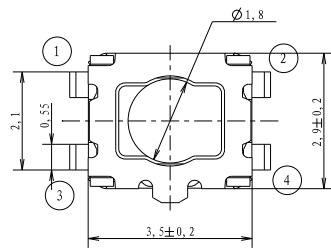


- NOTE
1. 4K pcs SWITCHES PER 1 REEL
  2. GENERAL TOLERANCE : 0.3mm

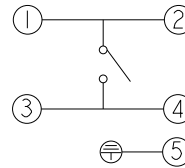
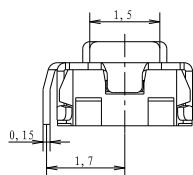
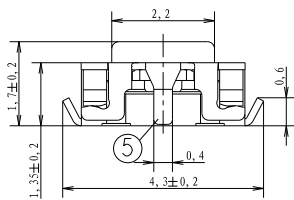
# RKC2 Series Microminiature SMT Top Actuated Tact Switch

**NEW**

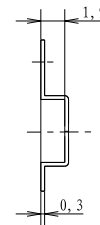
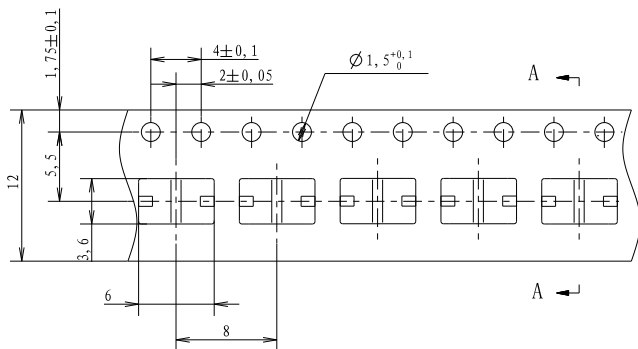
## Version with Ground Pin



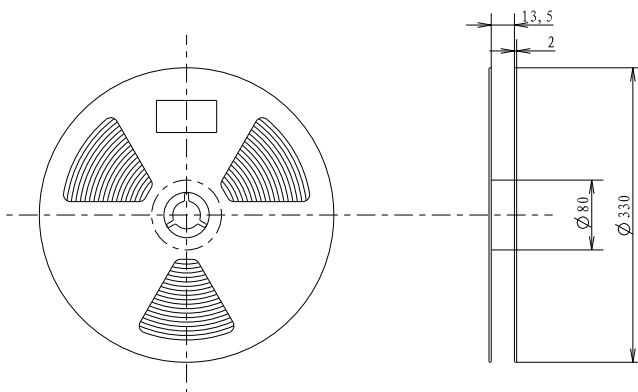
PCB LAYOUT



CIRCUIT DIAGRAM



Section A-A



**NOTE**

1. 4K pcs SWITCHES PER 1 REEL
2. GENERAL TOLERANCE : ± 0.3mm

Tactile Switches

B

**NEW**

# SFS Series Mid-Travel, Soft Sound Tact Switch



## Features/Benefits

- Construction with standard dimension 12x12 mm overall size
- Gold plating contacts
- SMT termination design
- Unique click & a sealed contact system
- 360 gf, 680 gf & 970 gf versions

## Typical Applications

- Measurement-control-regulation
- Monitoring system
- Automotive (steering wheel, mid-console, window lifter)
- Navigation
- Disposable medical devices
- Patient monitoring
- Scan system

## Specification

FUNCTION: Momentary action  
 CONTACT ARRANGEMENT: 1 make contact = SPST NO  
 TERMINALS: Gold plating, G type for SMT and THT for manual soldering  
 TRAVEL:

| OPERATING FORCE | TRAVEL       |
|-----------------|--------------|
| 360 ± 70 gf     | 0.6 ± 0.2 mm |
| 680 ± 160 gf    | 0.7 ± 0.2 mm |
| 970 ± 250 gf    | 0.8 ± 0.2 mm |

## Mechanical

|                             |                  |
|-----------------------------|------------------|
| Operating life with load    | 300,000 cycles   |
| Operating life without load | 1,000,000 cycles |

## Electrical

MAXIMUM VOLTAGE: 35 VDC  
 MAXIMUM CURRENT DC: 100 mA  
 MAXIMUM POWER DC: 1W  
 CONTACT RESISTANCE: 100 mΩ  
 INSULATION RESISTANCE: 1000 MΩ min.  
 DIELECTRIC VOLTAGE: < 0.5 mA

## Environmental

OPERATING TEMPERATURE: -40°C to +90°C  
 STORAGE TEMPERATURE: -40°C to +80°C

## Process

SOLDERING: This component is suited to the following methods:  
 Infrared Reflow Soldering in accordance with IEC61760-1

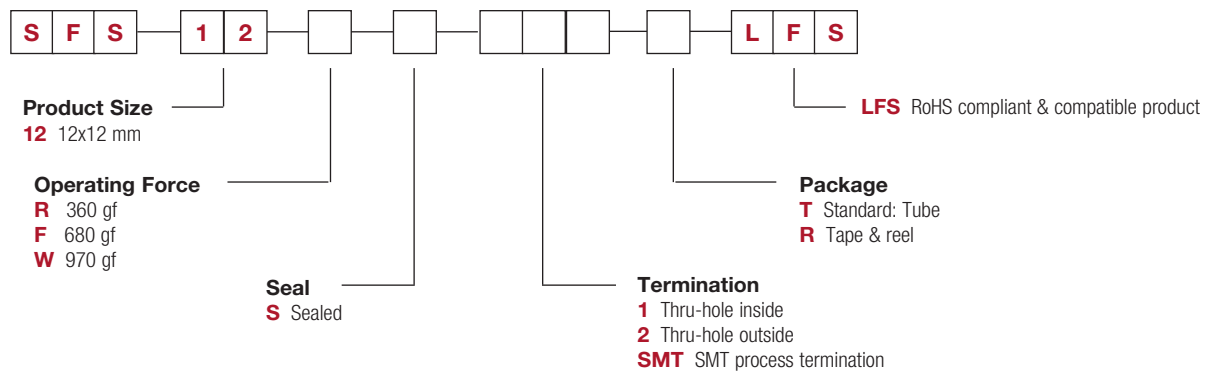
## Packaging

700 pieces per reel  
 58 pieces per tube

## How To Order

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

For any part number different from those listed above, please consult your local representative.



Dimensions are shown: mm  
 Specifications and dimensions subject to change





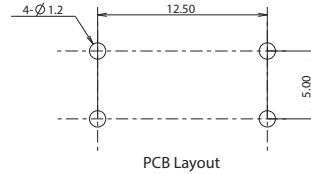
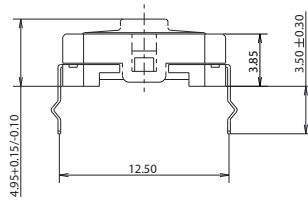
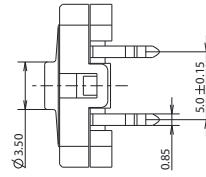
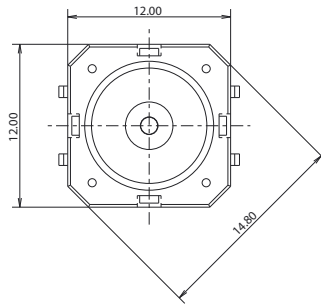
# SFS Series Mid-Travel, Soft Sound Tact Switch

**NEW**

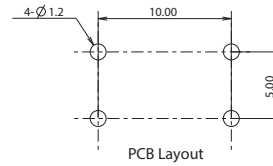
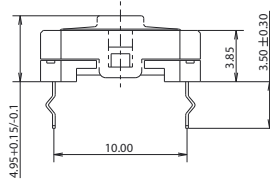
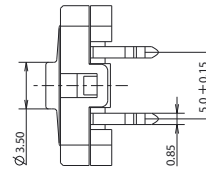
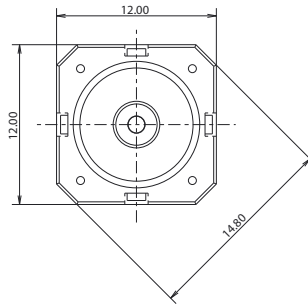
Tactile Switches

B

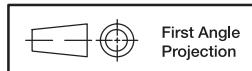
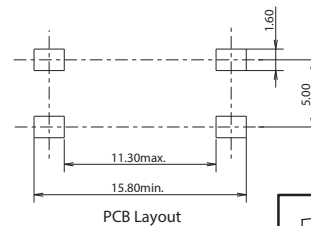
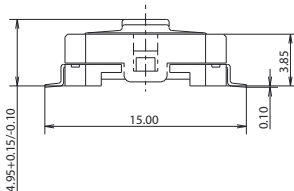
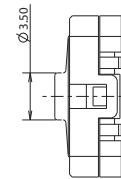
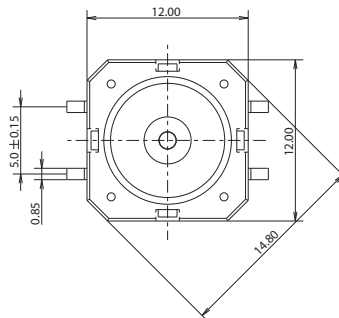
## SFS12XS2T LFS



## SFS12XS1T LFS

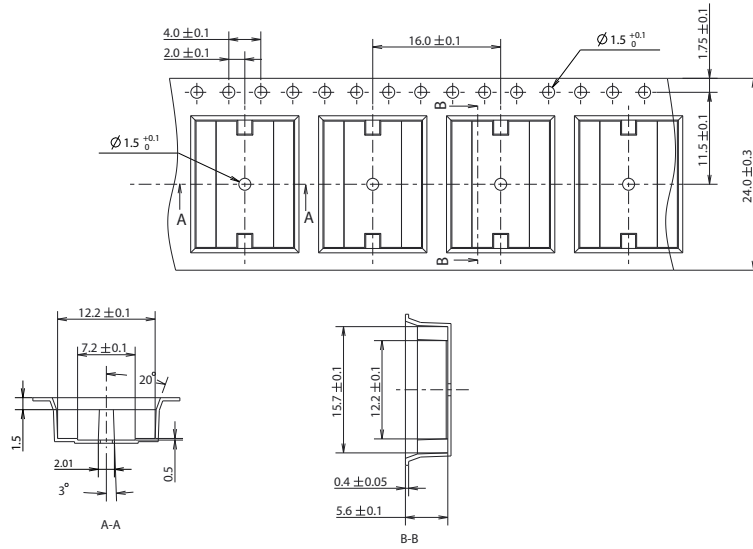


## SFS12XSSMTX LFS



# SFS Series Mid-Travel, Soft Sound Tact Switch

**NEW**



**B**

**Tactile Switches**