

# Tactile Switches

## Product Selection Guide





Tactile Switches

<b>Surface Mount</b>										
<b>Series</b>	<b>KMX</b>	<b>KMR 2-4</b>	<b>KMS</b>	<b>PTS525</b>	<b>KSR</b>	<b>KSS</b>	<b>KST</b>			
<b>Size on PCB L x W (mm)</b>	4,1 x 4,1	4,6 x 2,8	4,6 x 2,8	6,4 x 5,25	7,15x3,8 7,3x3,8	7 x 3,5	J 6,8x6,2 G 10x6,2			
<b>Total Height (mm)</b>	0,5 0,58	1,9 2,5	1,42	0,8 1,5	2,5	1,7	5			
<b>Travel (mm)</b>	0,2	0,2 to 0,35	0.25 to 0.3	0,3	0,3 to 0,5	0,3	1,33			
<b>Actuation Force (N)</b>	1.6 2.2	1.2 2 3 4	2 3	1.6 2.6	1.2 2 3 4.5	2 2.5 4	2.0 3.5			
<b>Contact Type</b>	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold			
<b>Max. Voltage (V)</b>	32 32	32 32	32 32	32 32	32 32	32 32	30 30			
<b>Max. Switching Power (VA)</b>	0.5	1 0.2	1 0.2	1 0.2	1 0.2	1 0.2	.50 0.2			
<b>Life Cycles</b>	250,000 250,000	100,000 300,000	100,000	100,000	100,000 200,000	100,000	100,000			
<b>Sealing</b>	Dust and flux tight	Dust and flux tight	Dust and flux tight	Dust and flux tight	Dust and flux tight	Dust and flux tight	Flux tight			
<b>Page Number</b>	B-7	B-9	B-13	B-15	B-17	B-21	B-39			
<b>Surface Mount</b>										
<b>Series</b>	<b>KSC1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>KSC4 V</b>	<b>KSC5</b>	<b>KSC6V</b>	<b>KT</b>	<b>K5AT</b>
<b>Size on PCB L x W (mm)</b>	J 6,8x6,2	G 10x6,2				7,4 x 3,8	J 6,8x6,2 G 10x6,2	8,2x3,67	SA 7,5x5 SA2 7,5x7	G 8,4x10,8
<b>Total Height (mm)</b>	2,6	3,5	3,5	5,2	7,7	6,9	5,6	6,9	6,6 7,11 with tab	6,1
<b>Travel (mm)</b>			0,20 to 0,75			0,375 to 0,5	axial: 0,25 lateral: 0,5	0,5	0,3 to 0,5	0,5
<b>Actuation Force (N)</b>			1,1 to 5,5			1.7 3.2	2.0 3.0	1,5	3	4
<b>Contact Type</b>	Silver		Gold			Silver Gold	Silver Gold	Silver Gold	Silver Gold	Gold
<b>Max. Voltage (V)</b>	32		32			32 32	32 32	32 32	50 50	32
<b>Max. Switching Power (VA)</b>	1		0.2			1 0.2	1 0.2	1 0.2	1 0.2	1
<b>Life Cycles</b>			100,000 to 1,000,000			300,000	10,000 100,000	100,000	100,000	25,000
<b>Sealing</b>			IP67			IP40	IP50	IP40	IP57	IP40
<b>Page Number</b>			B-23			B-23	B-30	B-23	B-35	B-41






Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# Tactile Switches Product Selection Guide

Thru-hole Sealed High Performance							
Series	K5V SMT	K5V THT	K5V PM	KSB	KSF	KSA	KSA MKII
<b>Footprint</b>	8 x 9 x 17	8 x 9 x 17	9 x 13	7,62 x 5,08	7,62 x 5,08	7,62 x 5,08	7,62 x 5,08
<b>Total Height (mm)</b>	9	9	13	2,01	2,6	4,7 button option	4,7
<b>Travel (mm)</b>	1,2	1,2	1,2	0,2	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5
<b>Actuation Force (N)</b>	4,0	4,0	4,0	1.6 3.0	1.3 1.6 3.0 5.0	1.3 3.0 5.0	1.3 3.0 5.0
<b>Contact Type</b>	Gold	Gold	Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold
<b>Max. Voltage (V)</b>	32	32	32	32 32	32 32	32 32	32 32
<b>Max. Switching Power (VA)</b>	1	1	1	1 0.2	1 0.2	1 0.2	1 0.2
<b>Life Cycles</b>	25,000	25,000	25,000	100,000	100,000	100,000	100,000 1,000,000
<b>Sealing</b>	Dust protected	Dust protected	Dust protected	IP40	IP60	IP60	IP67
<b>Page Number</b>	B-43	B-45	B-47	B-49	B-49	B-51	B-56



Tactile Switches

Thru-hole Sealed High Performance							
Series	KSA-V	KSI	KSI-V	KSL	KSL-V	KSJ	KSJ-V
<b>Footprint</b>	7,62 x 2,54	7,62 x 5,08	7,62 x 2,54	7,62 x 5,08	7,62 x 2,54	7,62 x 5,08	7,62 x 2,54
<b>Total Height (mm)</b>	8	5,4	8	9,9	8	6,65	8
<b>Travel (mm)</b>	0,3 to 0,5	0,4 to 1,1	0,4 to 1,1	0,3 to 0,5	0,3 to 0,5	0,55 to 0,7	0,55 to 0,7
<b>Actuation Force (N)</b>	1.3 3.0 5.0	1.1 3.0	1.1 3.0	1.3 3.0	1.3 3.0	2.0 3.0	2.0 3.0
<b>Contact Type</b>	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold
<b>Max. Voltage (V)</b>	32 32	32 32	32 32	32 32	32 32	32 32	32 32
<b>Max. Switching Power (VA)</b>	1 0.2	1 0.2	1 0.2	1 0.2	1 0.2	1 0.2	1 0.2
<b>Life Cycles</b>	100,000	100,000	100,000	100,000	100,000	100,000 30,000	100,000 30,000
<b>Sealing</b>	IP60	IP60	IP60	IP60	IP60	IP60	IP60
<b>Page Number</b>	B-51	B-58	B-58	B-51	B-51	B-60	B-60

See next page for additional products.



*Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change*

# Tactile Switches

## Product Selection Guide

Tactile Switches

Thru-hole Flux Tight Only							
Series	PTS635	PTS635-V	PTS645	PTS645-V		PTS125	PTS125-V
Footprint	6,5	7,0 x 2,5	6,5 x 4,5	7,0 x 2,5		12,5 x 5,0	3,20 x 11,53
Total Height (mm)	4,3 5,0	4,3	4,3 5,0 7,0 7,3 Sq. 9,5 13,0 17,0	7,1		4,3 7,3 Sq. 8,5 12,0	14,90
Travel (mm)	0,25	0,25	0,25	0,25		0,30	0,30
Actuation Force (N)	1.3 2.0	1.3 2.0	1.3 1.6 2.0	1.3 1.6 2.0		1.6 2.6	1.6 2.6
Contact Type	Silver	Silver	Silver	Silver		Silver	Silver
Max. Voltage (V)	12	12	12	12		12	12
Max. Current (mA)	50	50	50	50		50	50
Life Cycles	20,000	20,000	100,000	100,000		200,000	200,000
Sealing	Flux tight	Flux tight	Flux tight	Flux tight		Flux tight	Flux tight
Page Number	B-62	B-62	B-65	B-65		B-68	B-68

# KMT 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**

## 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%	0.13 ± 0.06
KMT 221 HF LFS	1.6 (160) ± 0.40	150,000	≥ 30%	0.13 ± 0.06

## Electrical

	Silver
MAXIMUM POWER:	0.5 VA
MAXIMUM VOLTAGE:	32 VDC
MINIMUM VOLTAGE:	20mV
MAXIMUM CURRENT DC:	50 mA
MINIMUM CURRENT DC:	1 mA
DIELECTRIC STRENGTH:	≥ 250 Vrms (1mn)
CONTACT RESISTANCE:	≤ 300 mΩ
INSULATION RESISTANCE:	≥ 50 MΩ
BOUNCE TIME:	≤ 6 ms

## Environmental

	Silver
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:  
– Infrared Reflow Soldering in accordance with IEC61760-1

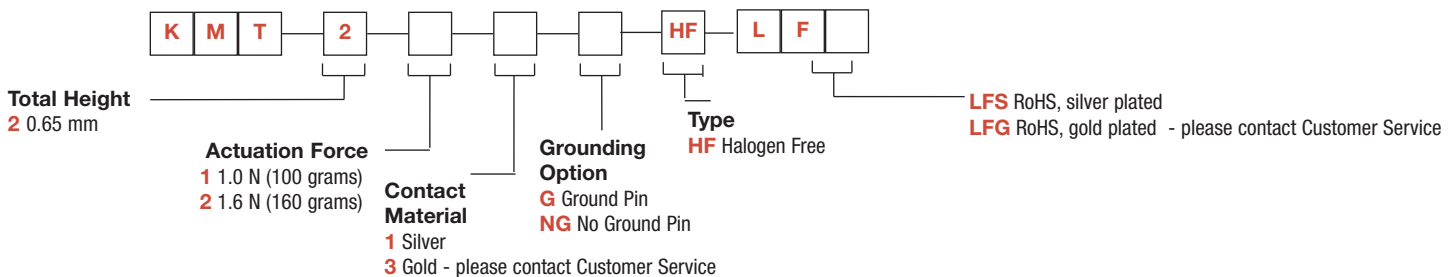
## Packaging

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.



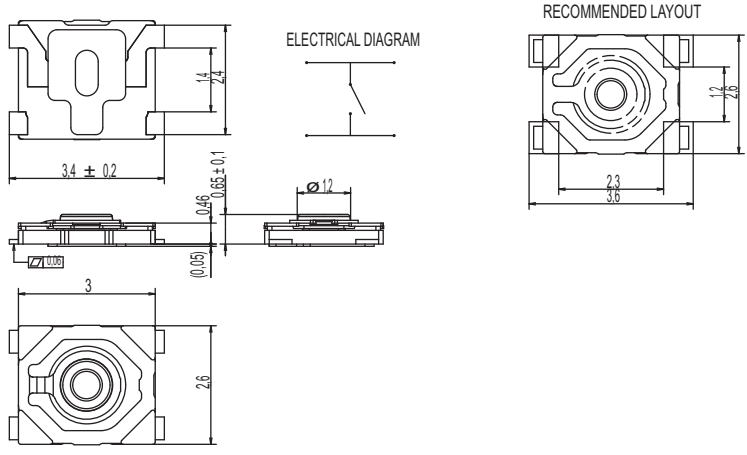
B

Tactile Switches

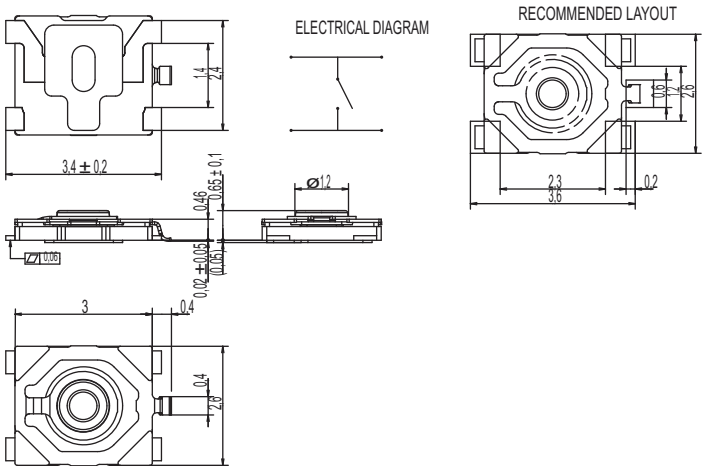
# KMT Series Nano-Miniature SMT Top Actuated

Tactile Switches

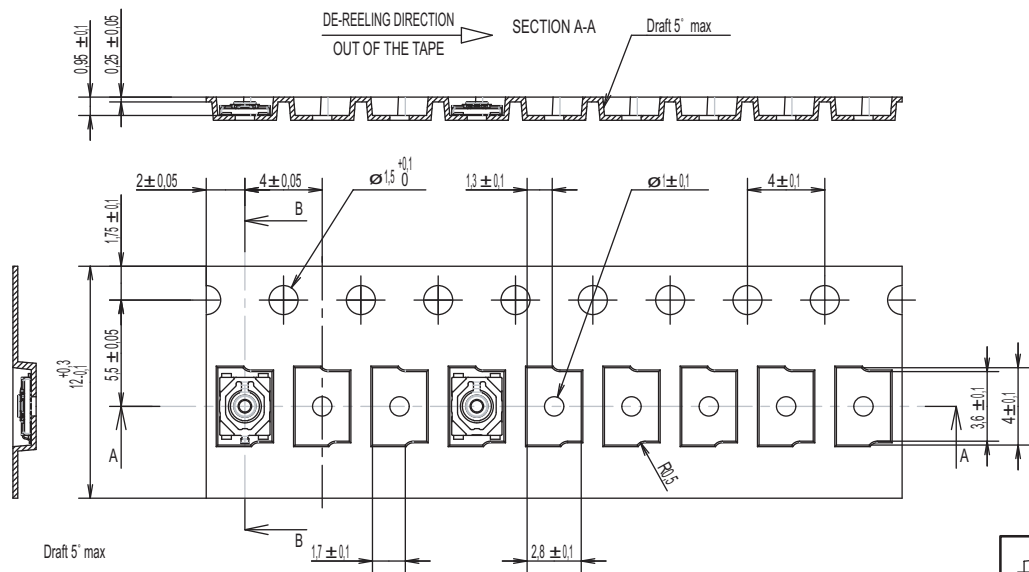
## KMT Series – No Ground Pin



## KMT Series – With Ground



## TAPE & REEL



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# KMX Series Low Profile SMT Top Actuated



B

Tactile Switches



## Features

- Ultra low profile 0.58mm
- Compact switch body; 4.1x4.1mm
- 1.6 and 2.2N sharp tactile feel
- 250k cycles
- $\varnothing$  1.4mm actuator grounded
- RoHS compliant and compatible

## Typical Applications

- Allows higher board density with compact SMT switch for ultra low profile environment: cell phones keypads, key fob, white goods, medical and military

## Specification

FUNCTION: Snap action push-on type SPST/shielded  
CONTACT TYPE: Normally open  
TERMINALS: Gullwing type for SMT

## Mechanical

OVERLOAD: 50N  
TACTILE FEELING: 30% min.  
ACTUATION CONDITION LIMITS:  
- inclination: 4° max.  
- de-centering:  
\* series 100: 0.15 mm max.  
\* series 200: 0.30 mm max.  
- actuator diameter: 1 mm max. with 0.1 mm radius.

Type	Operating force Newtons (grams)	Operating life (operations)	Travel
KMX211G/213G	1.6 (160) $\pm$ 30%	250,000	0,20 $\pm$ 0,10
KMX221G/223G	2.2 (220) $\pm$ 30%	250,000	0,20 $\pm$ 0,10

## Packaging

Tape and reels in reels of 10,000 pieces.  
External diameter 380mm  $\pm$  2mm.

## Electrical

	Silver	Gold
MAXIMUM POWER:	0.5 VA	0.5 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MAXIMUM CURRENT DC:	50 mA	20 mA
MINIMUM CURRENT DC:	1 mA	1 mA
CONTACT RESISTANCE:	$\leq$ 100 m $\Omega$	
INSULATION RESISTANCE:	$\geq$ 50 M $\Omega$	
BOUNCE TIME:	$\leq$ 6 ms	

## Environmental

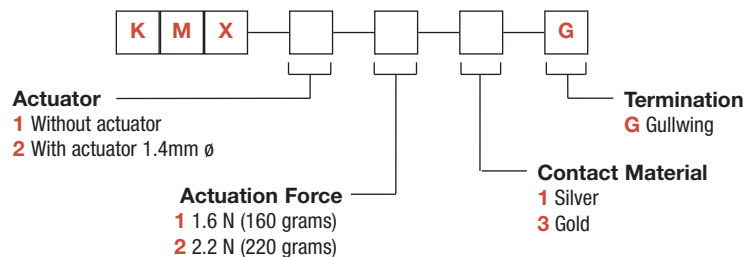
	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 85°C	-40°C to 125°C
STORAGE TEMPERATURE:	-55°C to 85°C	-55°C to 125°C
RELATIVE HUMIDITY	90 to 96%	

## Process

Infrared reflow soldering 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.



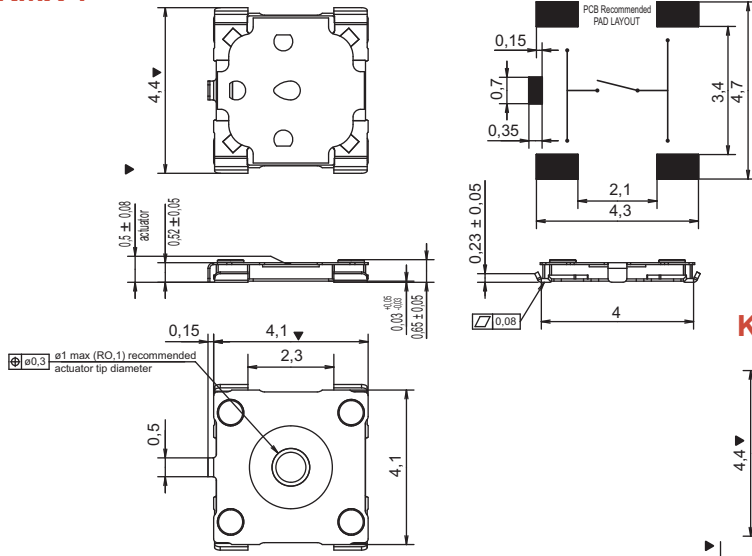
# KMX Series Low Profile SMT Top Actuated



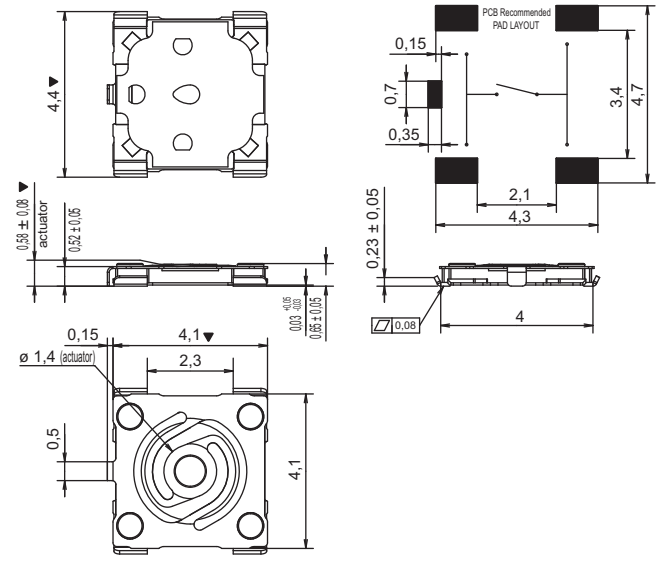
B

Tactile Switches

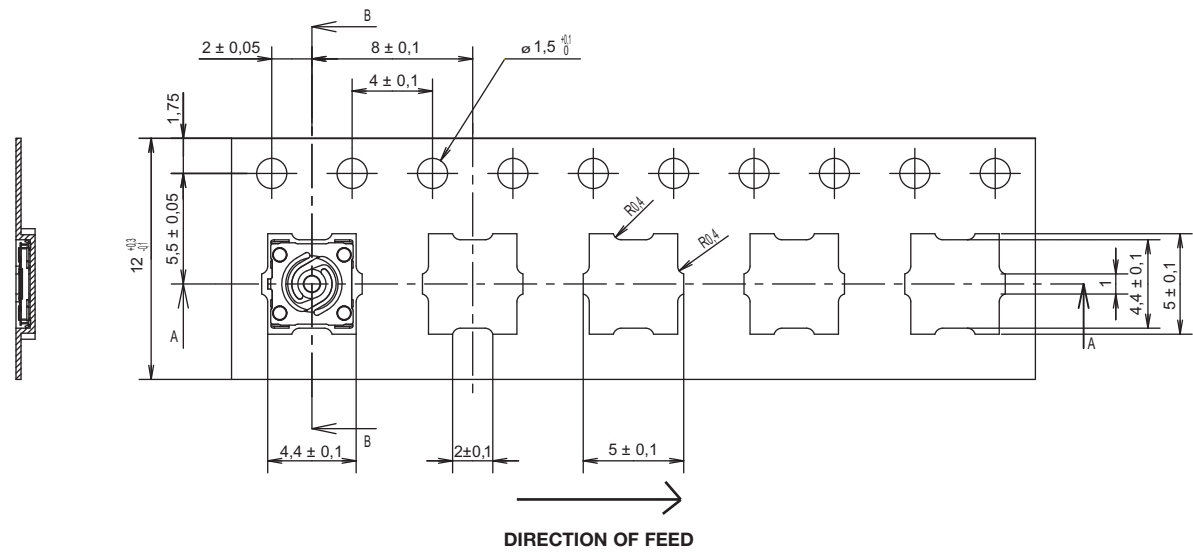
## KMX 1



## KMX 2



## TAPE & REEL



First Angle  
Projection

Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



# KMR 2 Series Microminiature SMT Top Actuated



## Features/Benefits

- Long Life version
- 4 actuation forces
- Optional ground pin
- Ultra low current capabilities
- Excellent tactile feel

## Typical Applications

- Automotive
- Cellular phones
- 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 (except gold version G only) See description below	Operating force N (grs)	Operating life (cycles)	Travel (mm)
KMR211 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
KMR221 LFS	2.0 (200) ± 0.50	200 000	0.25 mm ± 0.1
KMR223G 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
KMR233G LFG	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
KMR241 LFS	4.0 (400) ± 1.00	100 000	0.30 mm ± 0.1
KMR243G LFG	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

## 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

Infrared Reflow Soldering in accordance with IEC61760-1

## Packaging

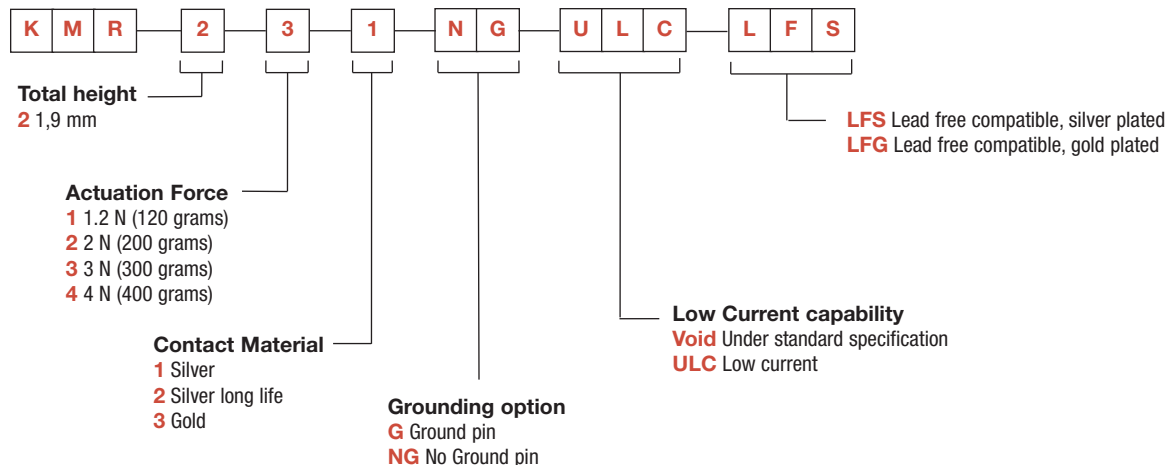
In reels of 7,000 pieces for KMR 2  
External diameter 330 mm ± 2 mm

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

TACTILE FEELING: for KMR 2 series: ≥ 30% (1.2N at 20%)

## Part Number Description

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



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



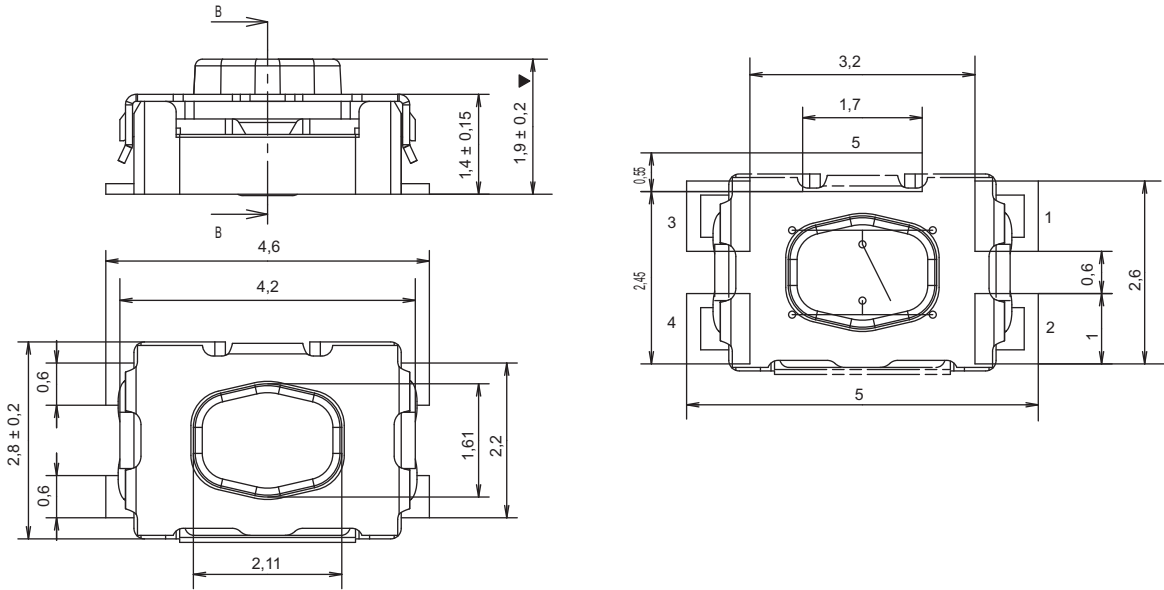
# KMR 2 Series Microminiature Tact Switch for SMT

KMR 2 Series - 1.9 mm height

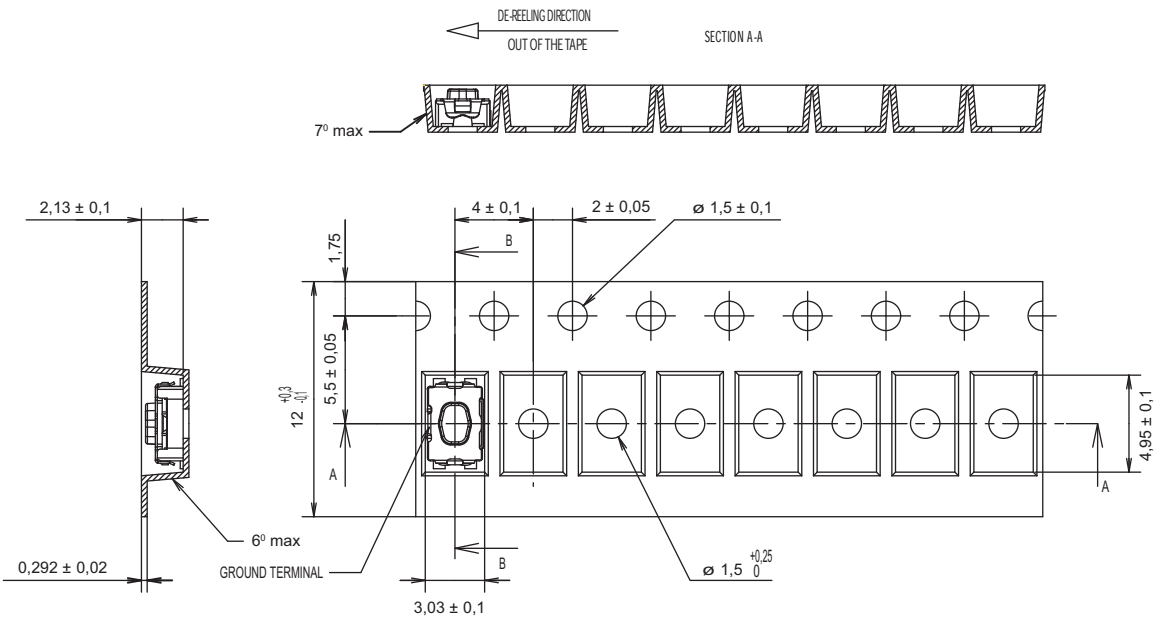
PCB layout shown with ground pin option

Tactile Switches

B



## TAPE & REEL



DIRECTION OF FEED

First Angle Projection

Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

[www.ck-components.com](http://www.ck-components.com)



# KMR 4 Series Microminiature SMT Top Actuated



## Features/Benefits

- Long Life version
- 4 actuation forces
- Optional ground pin
- Ultra low current capabilities
- Excellent tactile feel

## Typical Applications

- Automotive
- Cellular phones
- 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 (except gold version G only) See description below	Operating force N (grs)	Operating life (cycles)	Travel (mm)
KMR421 LFS	2.0 (200) ± 0.50	200 000	0.25 mm ± 0.1
KMR431 LFS	3.0 (300) ± 0.75	150 000	0.30 mm ± 0.1
KMR431 ULC LFS	3.0 (300) ± 0.75	150 000	0.30 mm ± 0.1
KMR432 LFS	3.0 (300) ± 0.75	300 000	0.30 mm ± 0.1
KMR432 ULC LFS	3.0 (300) ± 0.75	300 000	0.30 mm ± 0.1
KMR441 LFS	4.0 (400) ± 1.00	100 000	0.35 mm ± 0.1
KMR441 ULC LFS	4.0 (400) ± 1.00	100 000	0.35 mm ± 0.1
KMR442 LFS	4.0 (400) ± 1.00	200 000	0.35 mm ± 0.1
KMR442 ULC LFS	4.0 (400) ± 1.00	200 000	0.35 mm ± 0.1

TACTILE FEELING: for KMR 4 series: ≥ 25%

## 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

Infrared Reflow Soldering in accordance with IEC61760-1

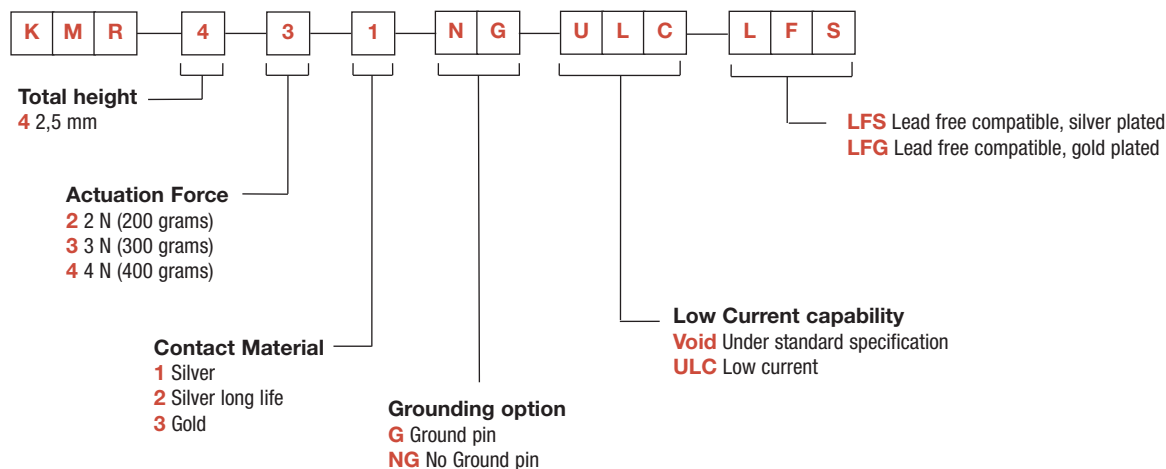
## Packaging

In reels of 6,000 pieces for KMR 4  
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.

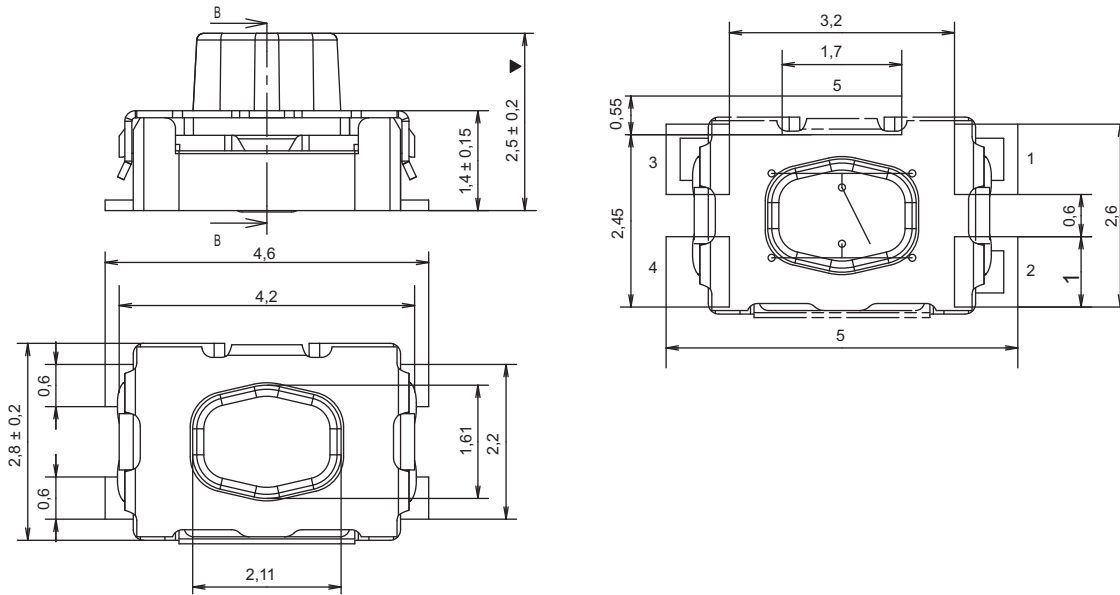


Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

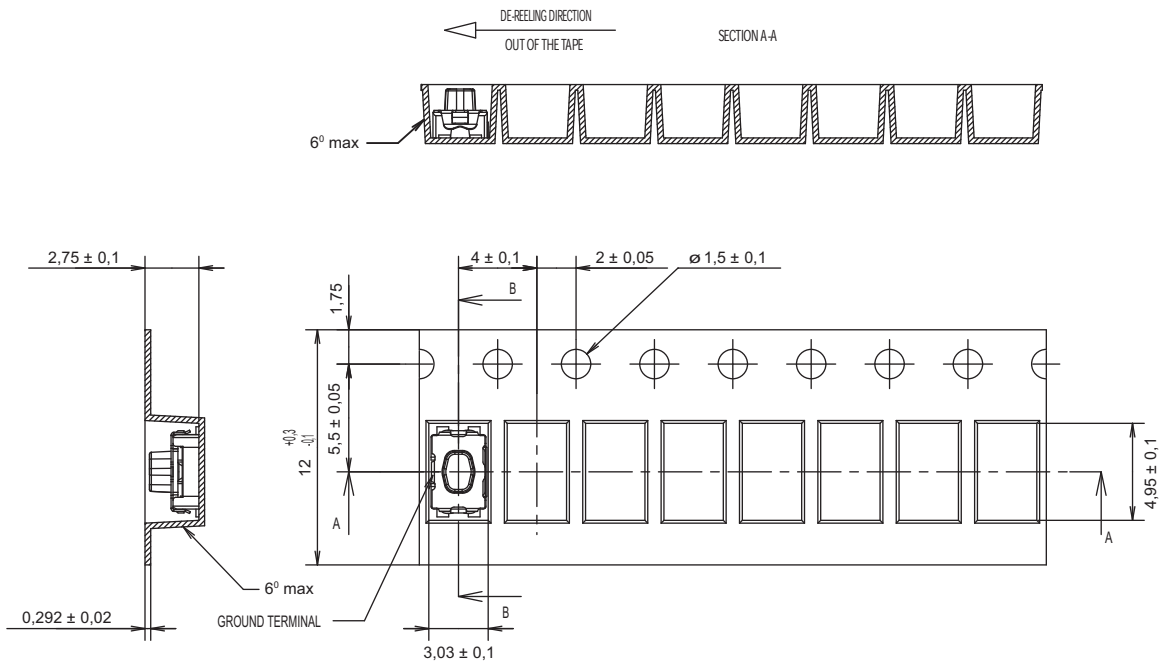
# KMR 4 Series Microminiature Tact Switch for SMT

KMR 4 Series - 2.5 mm height

PCB layout shown with ground pin option



## TAPE & REEL



# KMS Series Microminiature SMT Side Actuated



## Features/Benefits

- Compact size
- Excellent tactile feel
- ESD protection
- Positioning pegs for stability
- IP 40 sealing
- RoHS compliant and compatible

## Typical Applications

- Mobile phones, pagers
- PDAs
- Medical handheld monitors
- Consumer electronics
- Telecommunication networks

B

Tactile Switches

## 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 Newtons (grams)	Operating life (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° Ω	
BOUNCE TIME:	≤ 3 ms	

## Environmental

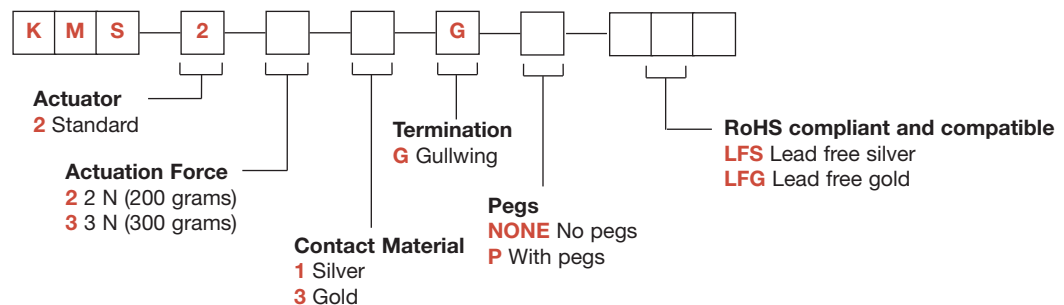
	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 85°C	-40°C to 125°C
STORAGE TEMPERATURE:	-55°C to 85°C	-55°C to 125°C

## Process

Infrared reflow soldering in accordance with IEC 61760-1

## How To Order

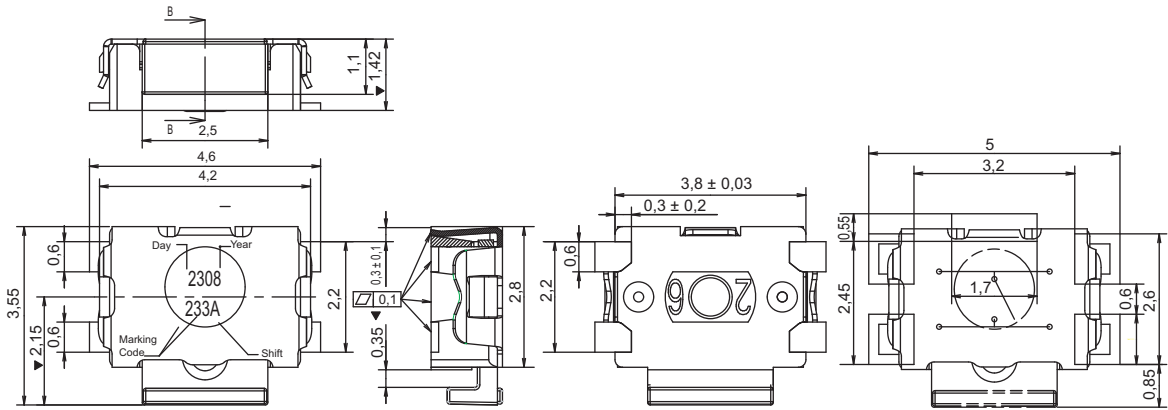
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



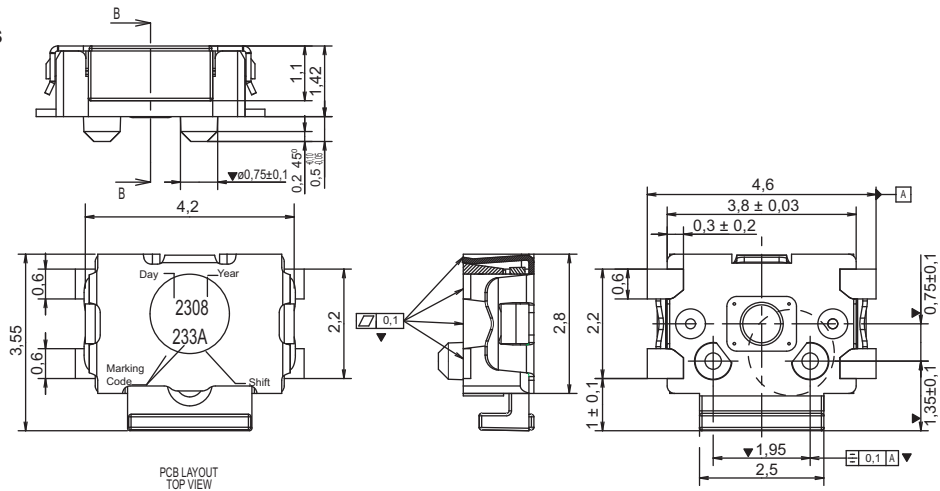
# KMS Series Microminiature SMT Side Actuated

Tactile Switches

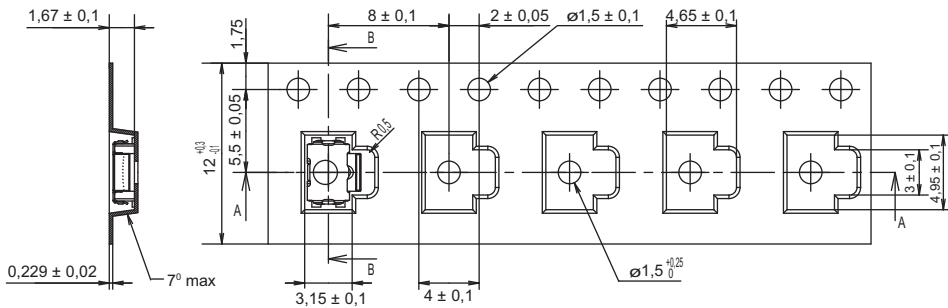
## KMS



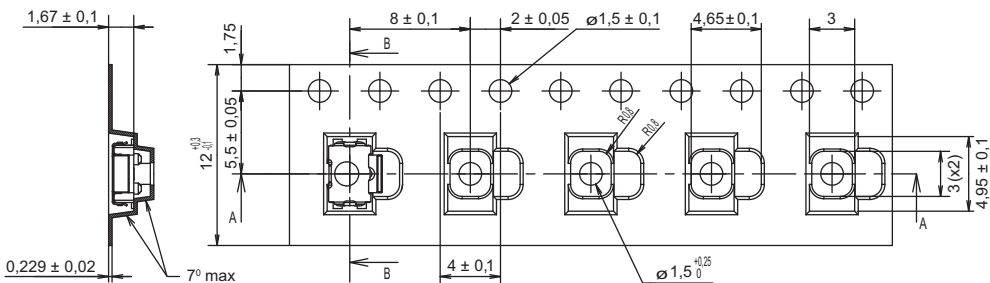
## KMS WITH PEGS



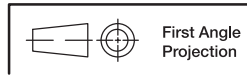
## TAPE & REEL



## WITH PEGS



DIRECTION OF FEED



First Angle  
Projection



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# PTS 525 Series Microminiature Tact Switch for SMT



## Features/Benefits

- Ultra low profile, 0.8 & 1.5 mm actuator height
- Long life
- Compact package of 5.25 x 5.25 mm saves PCB space
- RoHS compliant and compatible

## Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Hand-held devices

B

Tactile Switches

## Specification

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

## Mechanical

ACTUATION FORCE: PTS525 models: 160 grams, 260 grams  
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.  
ELECTRICAL TRAVEL: 0,30 ± 0,15 mm

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

## Environmental

OPERATING TEMPERATURE: -40°C to 60°C

## Process

SMT capable of IR solder process. Lead free soldering process compatible. Do not clean switch with solvents.

## Materials

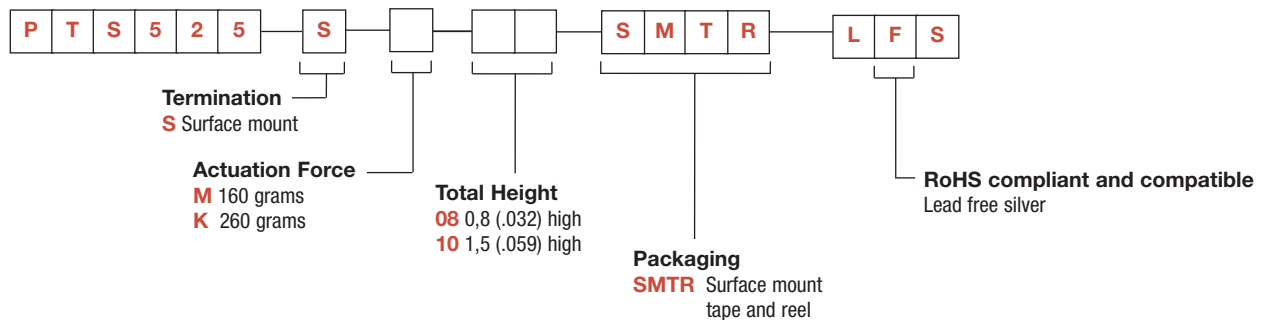
BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0).  
ACTUATOR: 6/6 nylon or polyacetal (UL 94HB).  
DOME CONTACTS: Phosphor bronze, silver clad.  
STATIONARY CONTACTS: Brass, silver plated.  
TERMINALS: Brass, silver plated. Insert molded.

## Packaging

3000 pieces per Tape and 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.



First Angle  
Projection

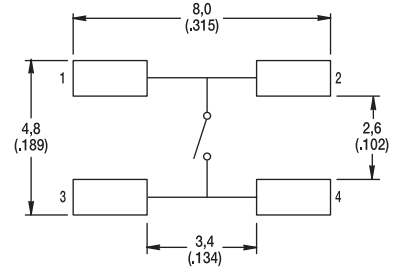
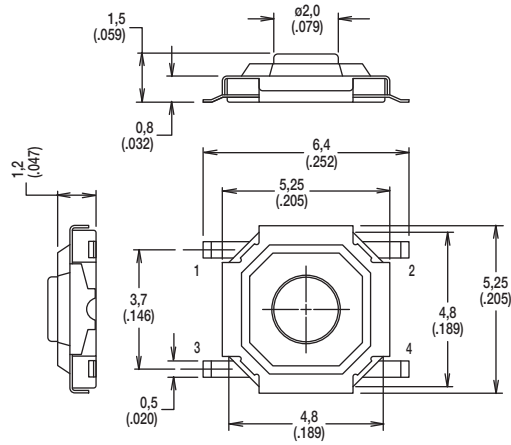
Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# PTS 525 Series Microminiature Tact Switch for SMT

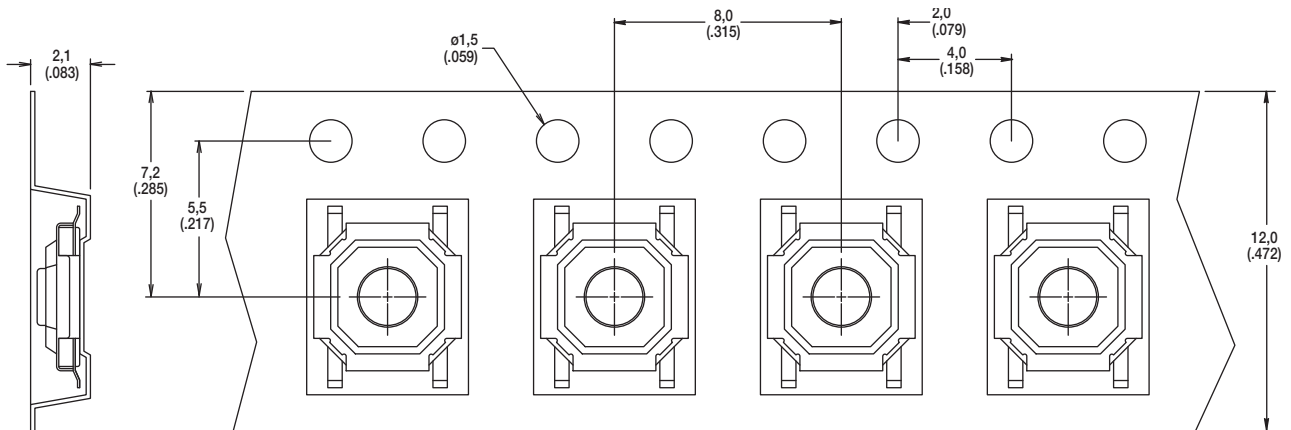
PTS525



PTS525SM10SMTR



## TAPE & REEL



→  
DIRECTION OF FEED



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com



# KSR Series Subminiature Tact Switch for SMT

## Features/Benefits

- Saves PCB space
- Range of 4 actuation forces
- G terminations
- N.O.
- Detect type available
- Rubber actuator
- IP 50 sealed
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Cellular phones & accessories
- Industrial electronics
- Computers & network equipment



B

Tactile Switches

## Specification

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

## Mechanical

Type	Operating force Newtons (grams)	Operating life (operations)	Travel
KSR211/213	1.8 (180) ± 20%	100,000	0,25 ± 0,15
KSR221/223	2.3 (200) ± 25%	200,000	0,3 ± 0,15
KSR231/233	3.0 (300) ± 25%	200,000	0,35 ± 0,15
KSR251/253	4.5 (450) ± 25%	100,000	0,5 ± 0,15
KSR223GNC	2 (200) ± 25%	100,000	0,3 ± 0,15

A detect switch version is available KSR2D3G.  
Please see Detect chapter, page F-6.

## 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): 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: Compatible with the lead free soldering profile.

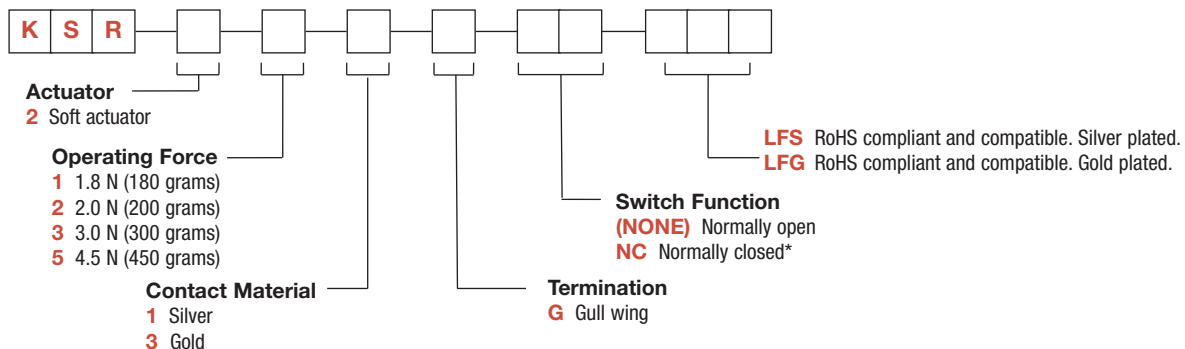
**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## 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.**

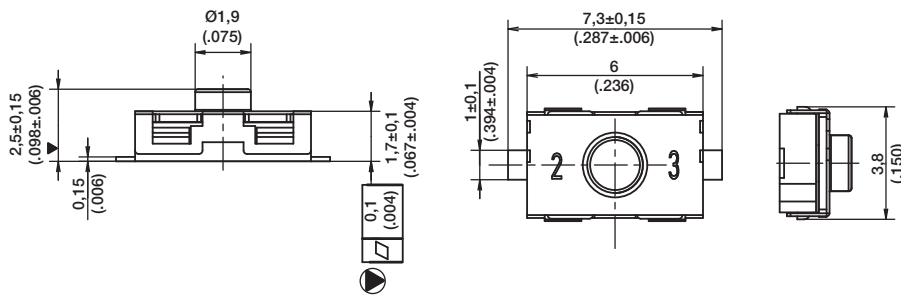


\*Available on KSR223GNC only.



# KSR Series Subminiature Tact Switch for SMT

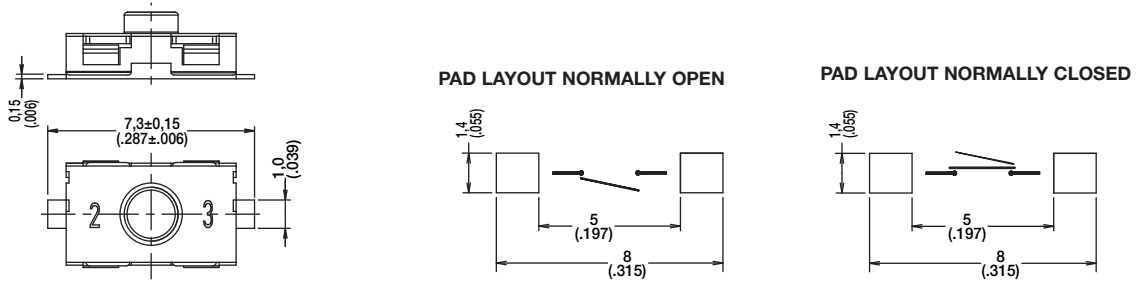
**KSR**



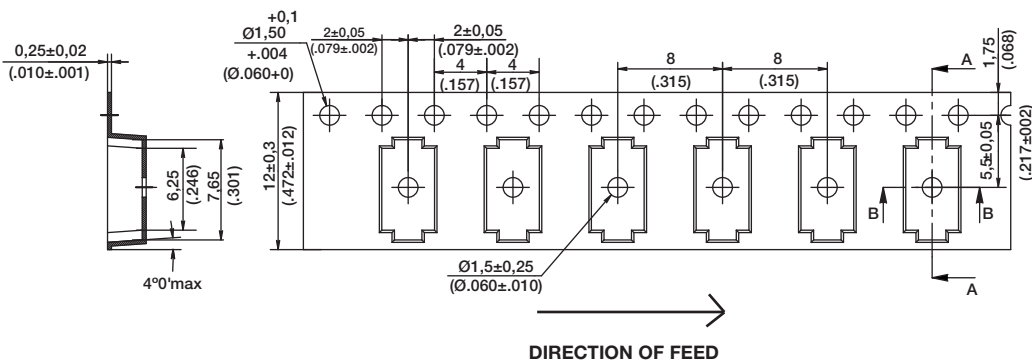
Tactile Switches

**B**

**G GULLWING**



## TAPE & REEL



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

## Features/Benefits

- Saves PCB space
- Range of 4 actuation forces
- G terminations
- N.O.
- Detect type available
- Rubber actuator
- IP 50 sealed
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Cellular phones & accessories
- Industrial electronics
- Computers & network equipment



B

Tactile Switches

## Specification

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

## Mechanical

Type	Operating force(Fa) Newtons (grams)	Operating life (operations)	Travel
<b>Silver versions</b>			
KSR212G LFS	1.5 < Fa < 2.2	200,000	0,25 ± 0,15
KSR222G LFS	1.9 < Fa < 2.6	200,000	0,3 ± 0,15
KSR232G LFS	2.25 < Fa < 3.75	200,000	0,35 ± 0,15
KSR252G LFS	3.37 < Fa < 5.6	200,000	0,5 ± 0,15
<b>Gold versions</b>			
KSR214G LFS	1.5 < Fa < 2.2	200,000	0,25 ± 0,15
KSR224G LFS	1.9 < Fa < 2.6	200,000	0,3 ± 0,15
KSR234G LFS	2.25 < Fa < 3.75	200,000	0,35 ± 0,15
KSR254G LFS	3.37 < Fa < 5.6	200,000	0,5 ± 0,15

## 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  
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 the 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.

## Mechanical

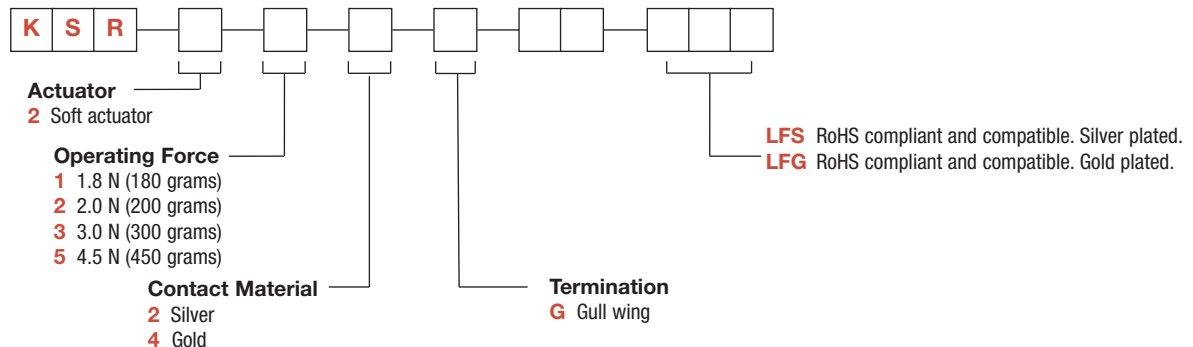
OVERLOAD: 20 Newtons

## 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.

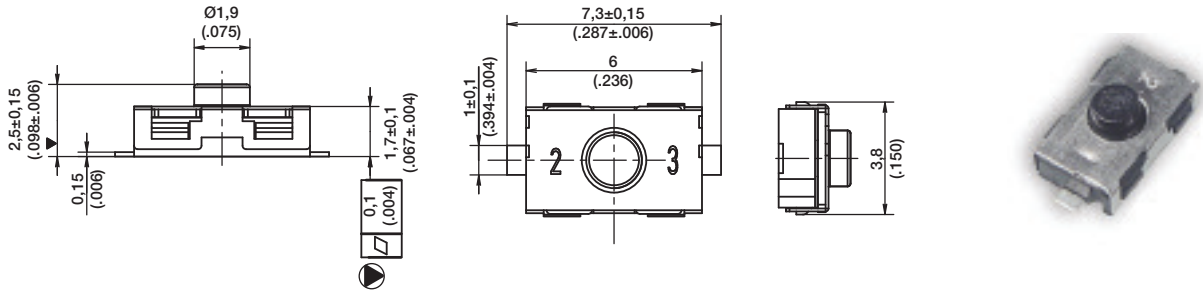


Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

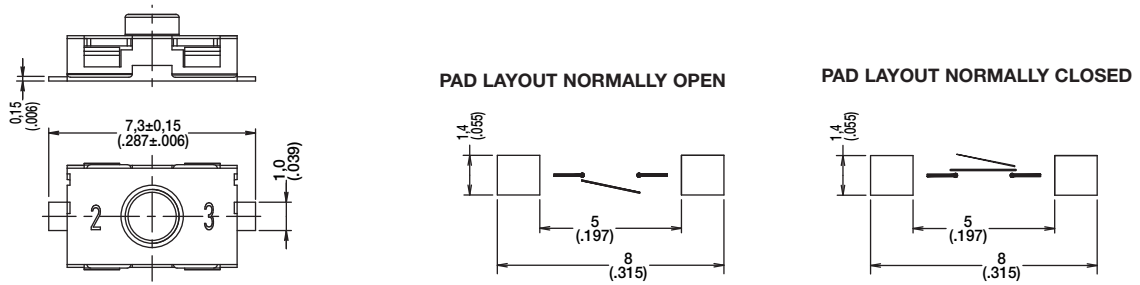
# KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

Tactile Switches

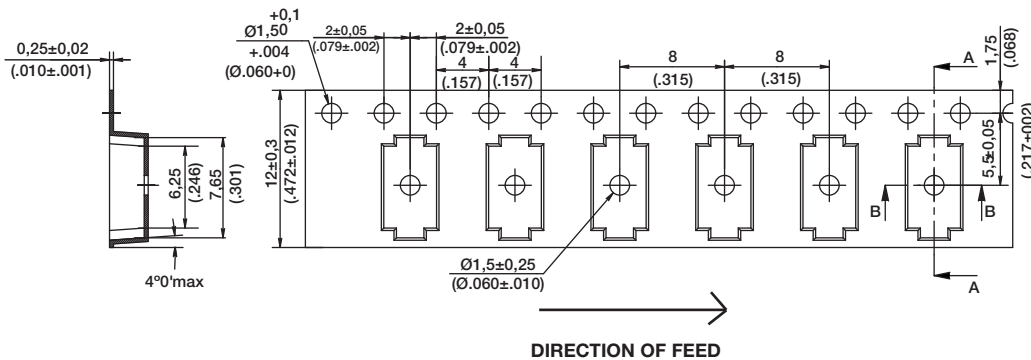
**KSR**



**G GULLWING**



## TAPE & REEL



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# KSS Series Subminiature SMT Side Actuated



## Features/Benefits

- Low profile of 1.6 mm
- Excellent tactile feel
- High shear force
- Range of actuation forces
- Large flat top
- Redundant contacts option
- IP 40 sealed
- RoHS compliant and compatible

## Typical Applications

- Cellular phone
- PDA, pagers
- Industrial electronics
- Health diagnostic electronics

B

Tactile Switches

## Specification

FUNCTION: momentary action  
CONTACT ARRANGEMENT: N.O.  
TERMINALS: Gullwing / 3-Way type for SMT  
IP40 sealed

## Mechanical

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

Type	Operating force Newtons (grams)	Operating life (operations)	Travel
KSS221G	2.0 (200) ± 0.5	100,000	0,3 ± 0,15
KSS231G	2.5 (250) ± 0.5	100,000	0,3 ± 0,10
KSS233W	2.5 (250) ± 0.6	100,000	0,3 ± 0,15
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

Infrared reflow soldering in accordance with IEC 61760-1

## Packaging

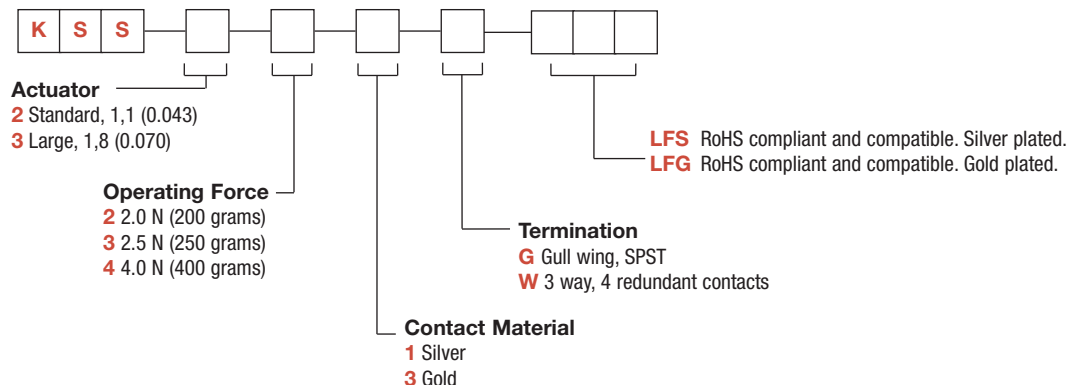
Tape and reels in reels of 3,000 pieces.  
External diameter 330mm ± 2mm.

## 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.**

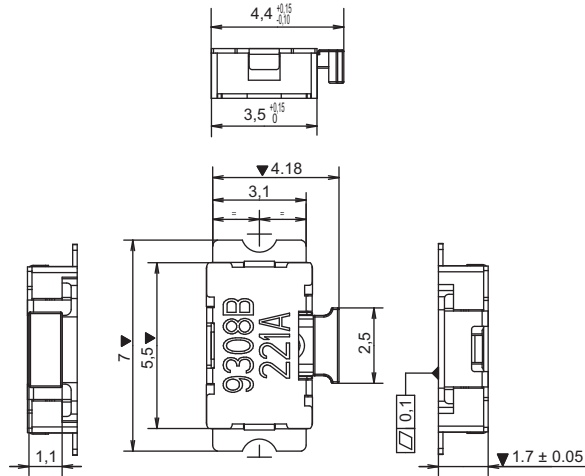


# KSS Series Subminiature SMT Side Actuated

KSS

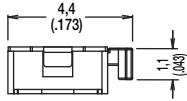
B

Tactile Switches

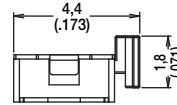


## ACTUATOR

2 STANDARD, 1,1 (0.043)

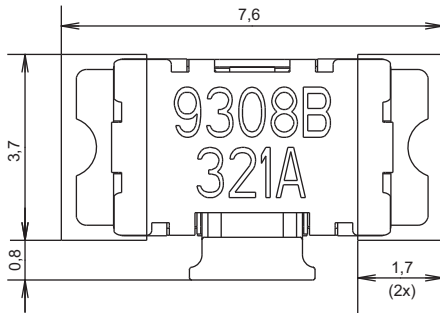


3 LARGE, 1,8 (0.070)

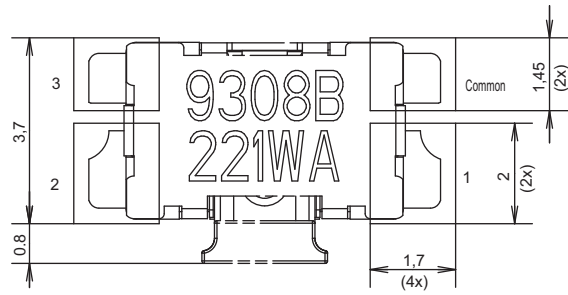


## TERMINATION

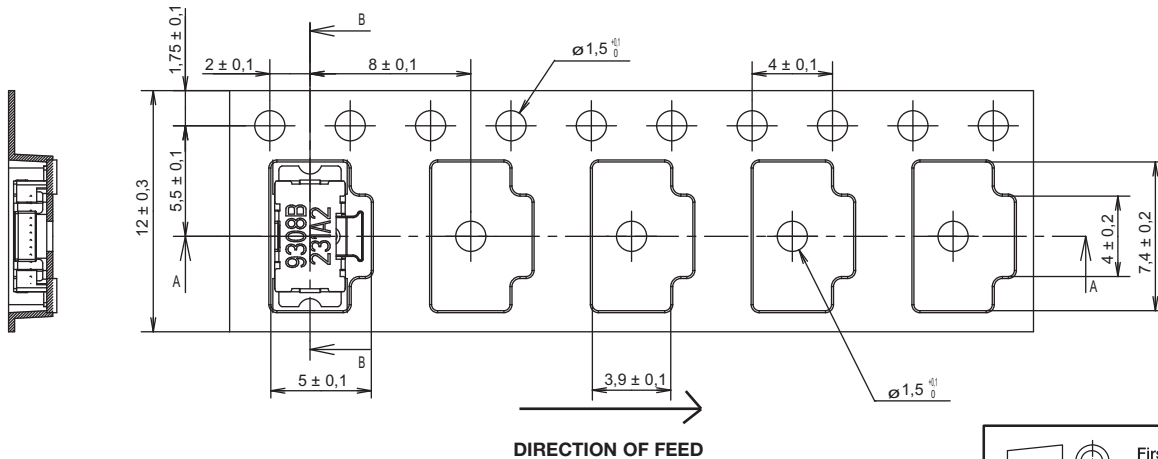
G GULLWING



W 3 WAY, 4 REDUNDANT CONTACTS



## TAPE & REEL



DIRECTION OF FEED



First Angle  
Projection

Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



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# KSC Series Sealed Tact Switch for SMT

## Features/Benefits

- Positive tactile feeling
- Range of 6 actuation forces
- J or G terminations
- Tape & reel
- IP 67

## Typical Applications

- Automotive
- Cellular phones
- Industrial electronics
- Network infrastructure and IT



## 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) Min/Max	Operating life (operations)	Travel (mm)
KSC121J	1.2 / 2.5	200,000	0.3 ± 0.15
KSC141J	2.25 / 3.75	200,000	0.3 ± 0.15
KSC151J	4.3 / 7.3	100,000	0.3 ± 0.15
KSC201J	0.9 / 2N	300,000	0.3 +0.2 /-0.15
KSC221J	1.5 / 2.5	500,000	0.35 +0.3 /-0.1
KSC222J	1.5 / 2.5	1,000,000	0.35 +0.3 /-0.1
KSC241J	2.6 / 4.4	300,000	0.5 ± 0.2
KSC251J	4.1 / 7.0	300,000	0.5 ± 0.2
KSC321J	1.6 / 2.4	300,000	0.2 +0.3 /0
KSC341J	2.25 / 3.75	300,000	0.2 +0.3 /0
KSC351J	4.1 / 6.9	100,000	0.25 +0.3 /0
KSC401J 50SH	0.9 / 2.0	300,000	0.5 ± 0.25
KSC411J 70SH	1.05 / 1.75	300,000	0.35 ± 0.15
KSC421J 70SH	1.25 / 2.12	300,000	0.5 ± 0.25
KSC422J 70SH	1.25 / 2.12	1,000,000	0.5 ± 0.25
KSC441J 70SH	3.0 / 5.0	300,000	0.75 ± 0.25
KSC442J 70SH	3.0 / 5.0	1,000,000	0.75 ± 0.25
KSC621J	1.0 / 1.65	300,000	0.5 ± 0.2
KSC641J	2.25 / 3.75	300,000	0.5 ± 0.2
KSC421V	1.3 / 2.1	300,000	0.375 ± 0.225
KSC621V	1.1 / 1.9	100,000	0.5 ± 0.2
KSC721 J	1.7 / 2.8	300,000	0.3 ± 0.15
KSC741J	2.9 / 4.9	300,000	0.4 ± 0.20

A detect switch version is available KSC4D1J and KSC4D1G.

Please see Detect chapter, page F-7.

KSC vertical series have an IP40 sealing level.

## 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 V

CONTACT RESISTANCE: < 100 mΩ

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:	-55°C to 85°C	-55°C to 125°C

## 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 < 5 sec.
- Cleaning according to typical washing processes.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

## Packaging

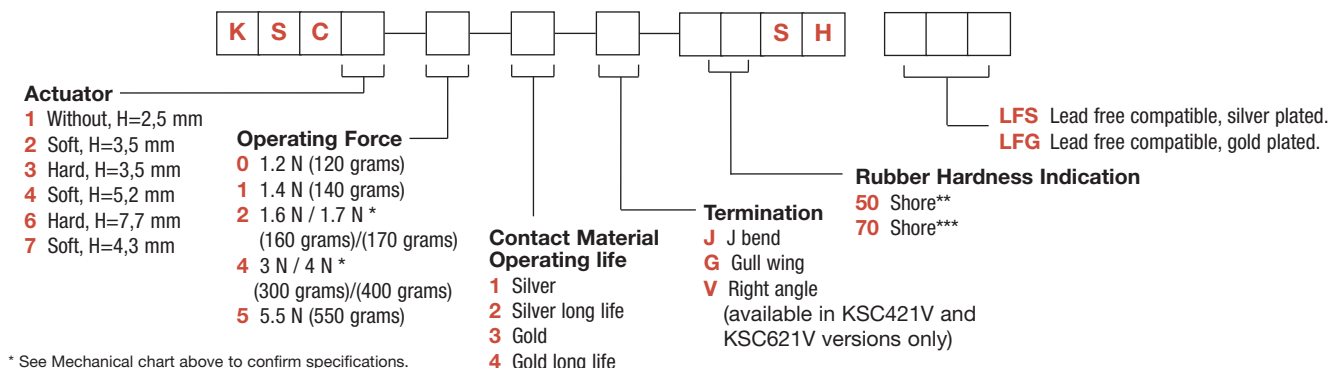
KSC1, KSC2 and KSC3 are delivered on continuous tape and reels of 2,000 pieces, KSC4 in reels of 1,000 pieces. KSC 6 in reels of 750 pieces. KSC7 in reels of 1,000 pieces. KSCV in boxes of 500 pieces. Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 330 mm ± 2 mm.

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

## 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.**



\* See Mechanical chart above to confirm specifications.

\*\* Applies to KSC401J50SH only.

\*\*\* Applies to KSC 411J70SH, KSC421J70SH,

KSC441J70SH



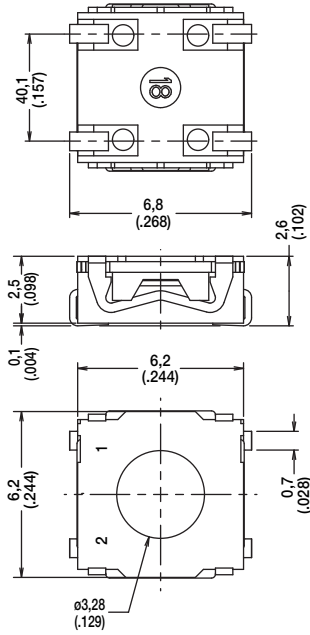
Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

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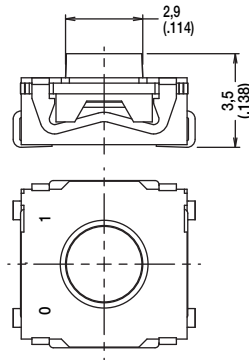
# KSC Series Sealed Tact Switch for SMT

## ACTUATOR

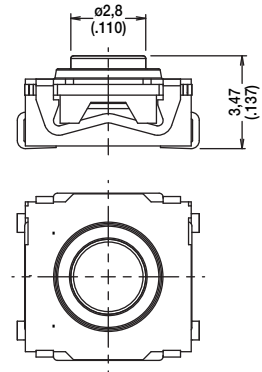
**KSC1** WITHOUT, 2,5 mm HIGH



**KSC2** SOFT, 3,5 mm HIGH



**KSC3** HARD, 3,5 mm HIGH

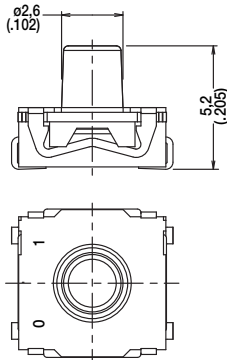


Tactile Switches

B

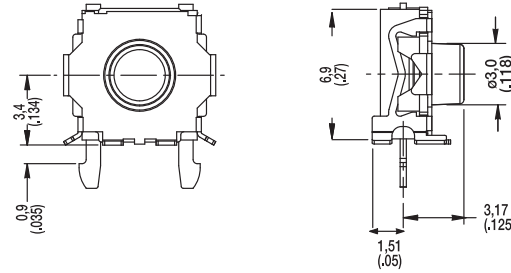
**KSC4** SOFT, 5,2 mm HIGH

**NOTE:** KSC4 standard silicone material is 70 shore, the only exception is KSC401J which is 50 shore.

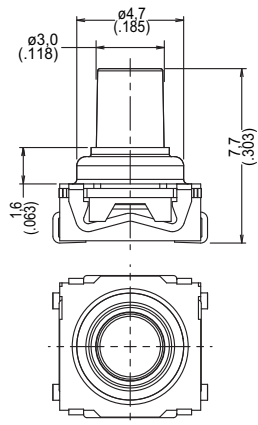


**KSC4** KSC421V ONLY

**NOTE:** KSC421V requires metalized holds for simultaneous reflow soldering of switch terminals and bracket terminals.

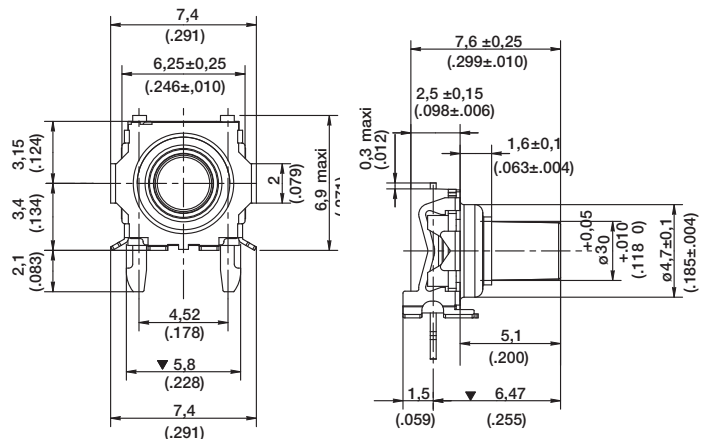


**KSC6** HARD, 7,7 mm HIGH



**KSC6** KSC621V ONLY

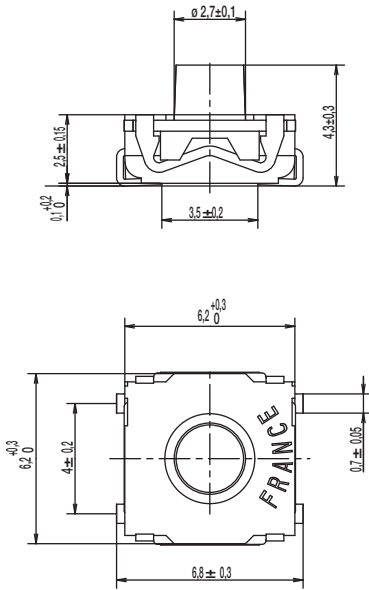
**NOTE:** KSC621V requires metalized holds for simultaneous reflow soldering of switch terminals and bracket terminals.



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# KSC Series Sealed Tact Switch for SMT

**KSC7** SOFT, 4,3 mm HIGH



**B**

Tactile Switches

## OPERATING FORCE



OPTION CODE	OPERATING FORCE
<b>0</b>	1.2 N (120 grams)
<b>1</b>	1.4 N (140 grams)
<b>2</b>	1.6 N / 1.7 N (160/170 grams)
<b>4</b>	3 N / 3.5 N (300/350 grams)
<b>5</b>	5.5 N (550 grams)

## CONTACT MATERIAL



OPTION CODE	MATERIAL
<b>1</b>	SILVER
<b>3</b>	GOLD

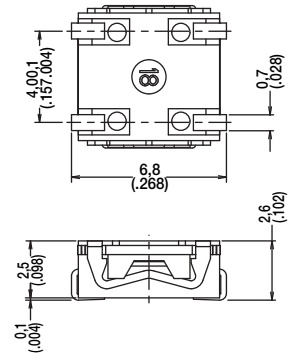


# KSC Series Sealed Tact Switch for SMT

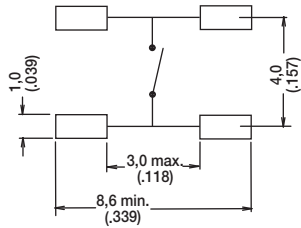
## TERMINATION



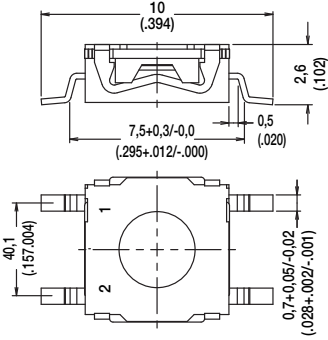
### J J BEND



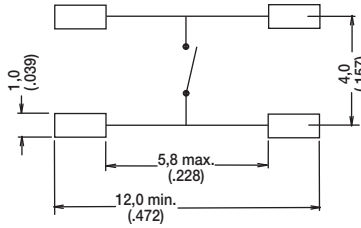
#### PAD LAYOUT



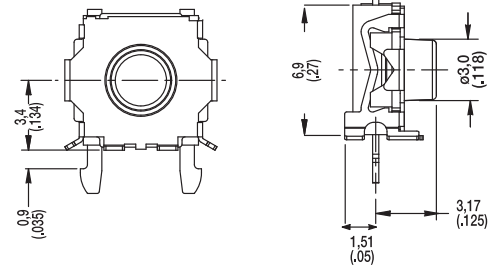
### G GULLWING



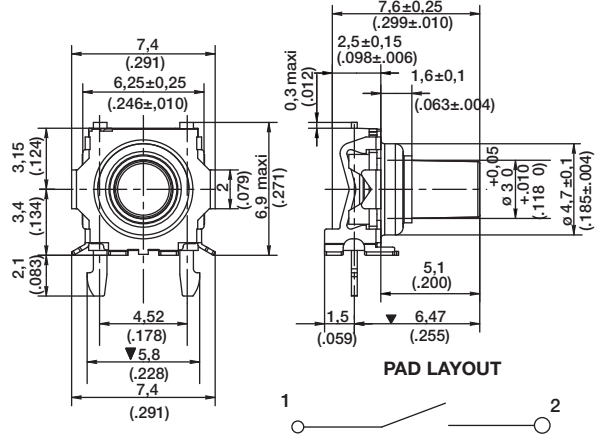
#### PAD LAYOUT



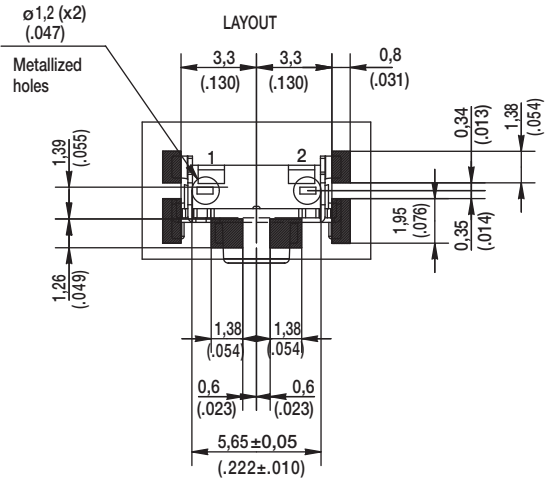
### V RIGHT ANGLE - KSC421V ONLY



### V RIGHT ANGLE - KSC621V ONLY

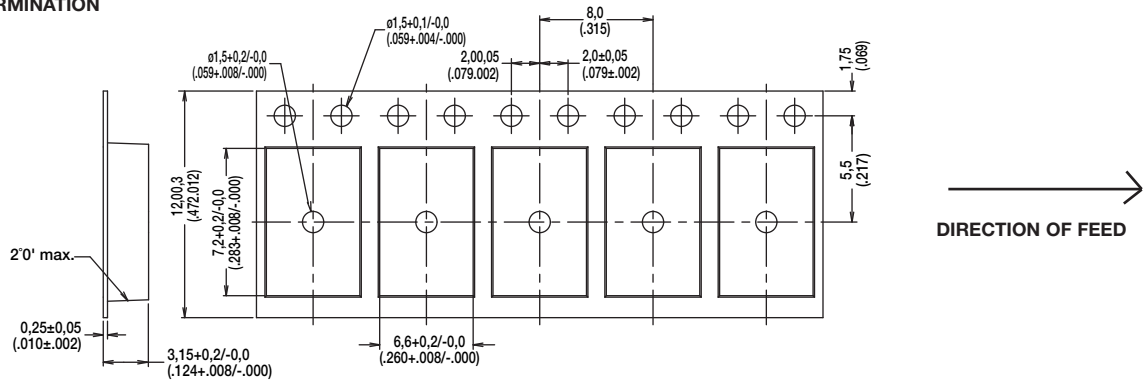


#### PAD LAYOUT

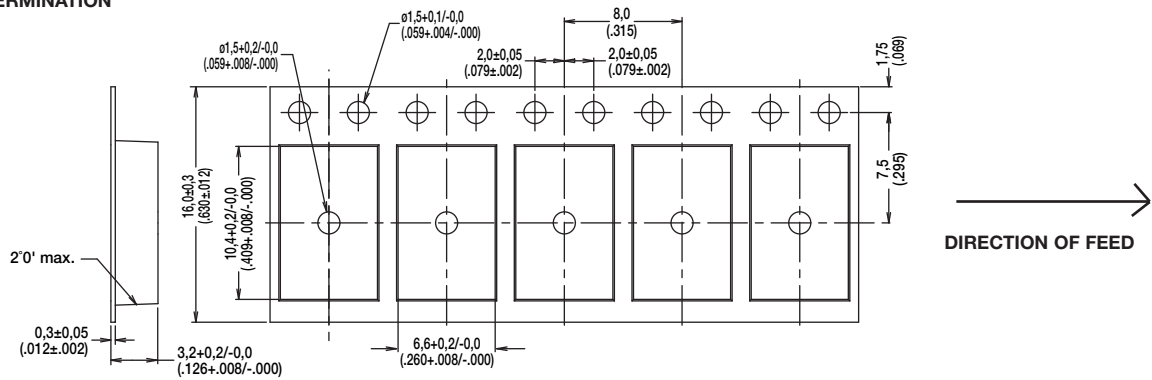


## TAPE & REEL

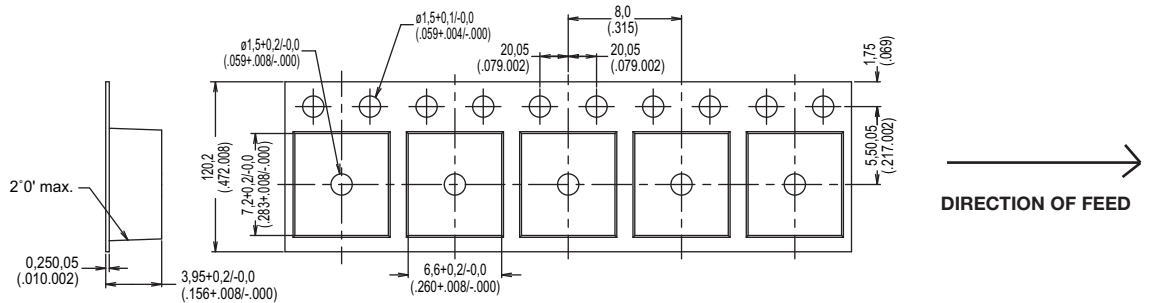
### FOR KSC1 J TERMINATION



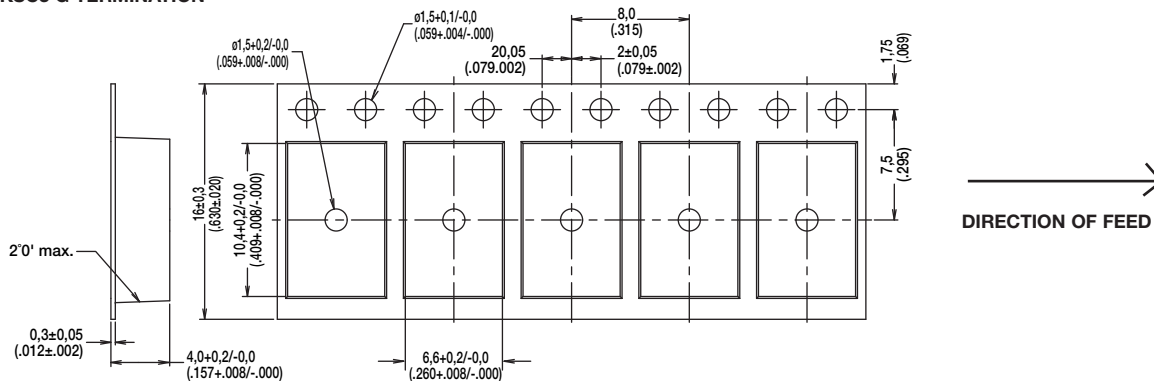
### FOR KSC1 G TERMINATION



### FOR KSC2 & KSC3 J TERMINATION



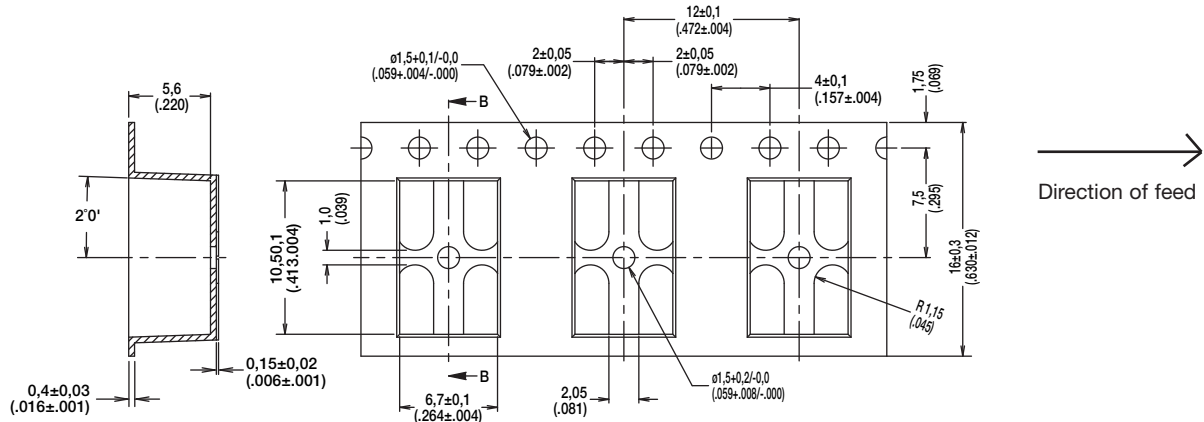
### FOR KSC2 & KSC3 G TERMINATION



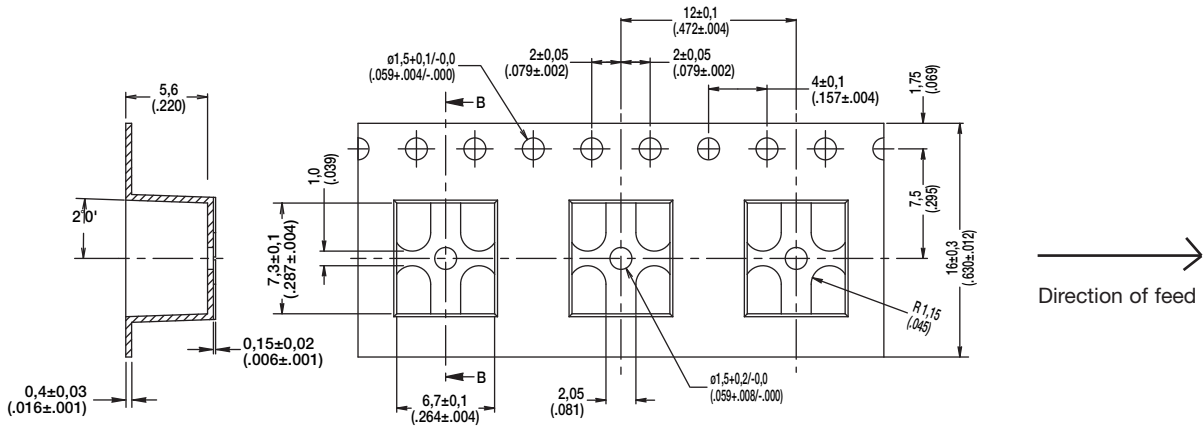
# KSC Series Sealed Tact Switch for SMT

## TAPE & REEL

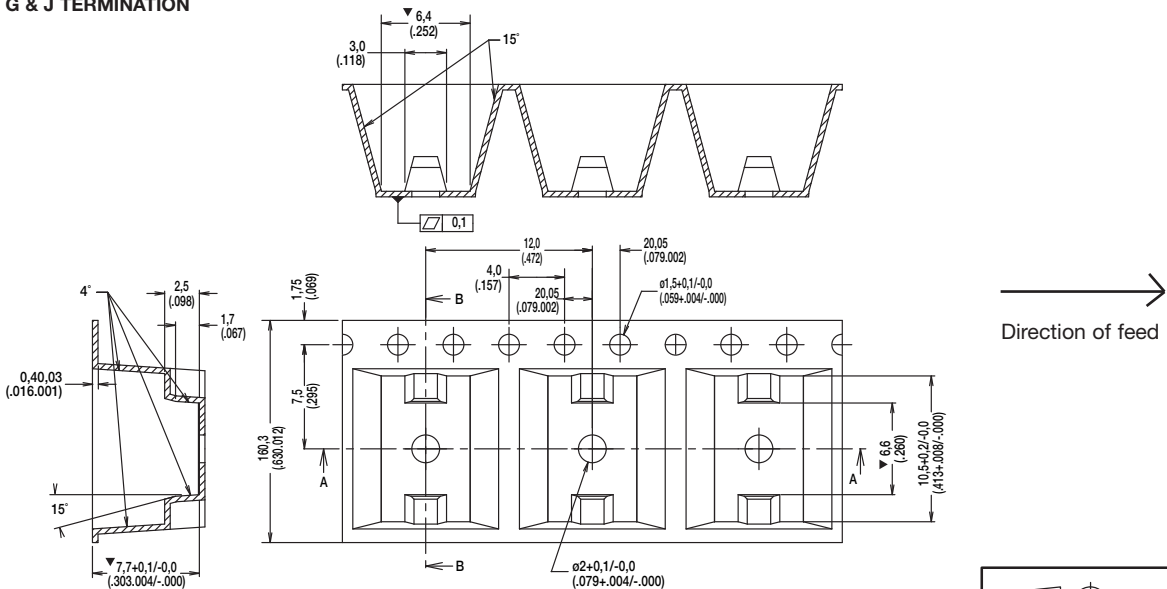
FOR KSC4 FOR G TERMINATION



FOR KSC4 FOR J TERMINATION



FOR KSC6 G & J TERMINATION



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

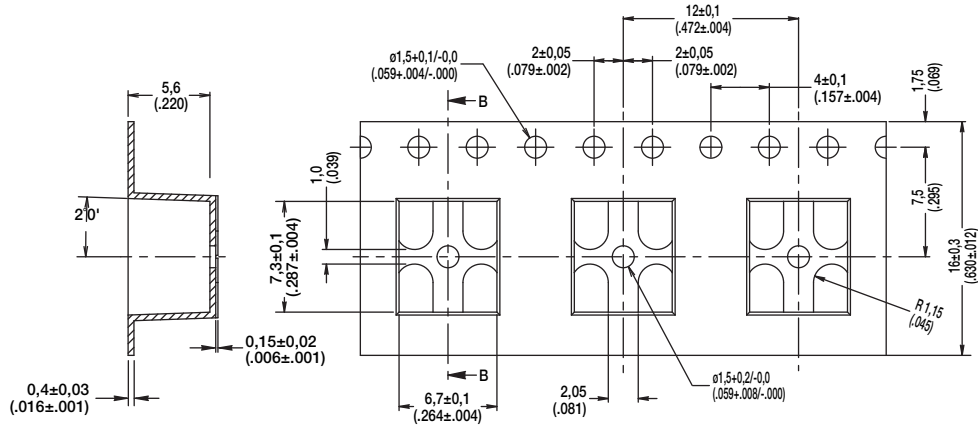
www.ck-components.com



# KSC Series Sealed Tact Switch for SMT

## TAPE & REEL

FOR KSC7 FOR J TERMINATION



B

Tactile Switches



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



# KSC5 Series

## Tact Switch with Rocker Option for SMT



### Features/Benefits

- Can be actuated from either side or top
- Silver or Gold plated terminals
- Compatible with automatic insertion machines
- IP 50
- RoHS compliant

### Typical Applications

- Automotive
- Computers
- Instrumentation

Tactile Switches

### Specification

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

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 V		
CONTACT RESISTANCE: < 100 mΩ		
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:	-55°C to 85°C	-55°C to 125°C

### Process

SOLDERING: Infrared reflow in accordance with IEC61760-1

### Packaging

Switches delivered on continuous tape & reels of 1,000 pieces, 330 (12.992) external diameter. Other dimensions according to EIA-RS-481 standard.

### Mechanical

Type	Operating force axial FA N (grams) ±25%	Operating force lateral FL N (grams) ±30%	Travel to make axial (mm)	Travel to make lateral (mm)	Life expectancy cycles, axial	Life expectancy cycles, lateral
KSC521G	1,5 - 2,5	1,8 - 3,8	0,25 ± 0,15	0,5 ± 0,25	100,000	10,000
KSC541G	2,25 - 3,75	1,8 - 3,8	0,25 ± 0,15	0,5 ± 0,25	100,000	10,000

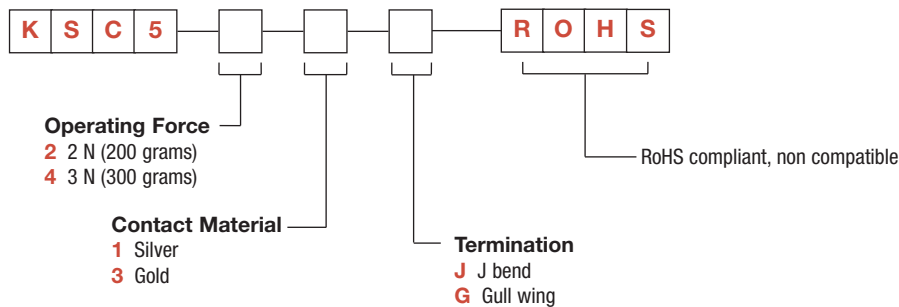
**NOTE:** Specifications listed above are for switches with standard options.  
 For information on specific and custom switches, consult Customer Service Center.

### 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.**



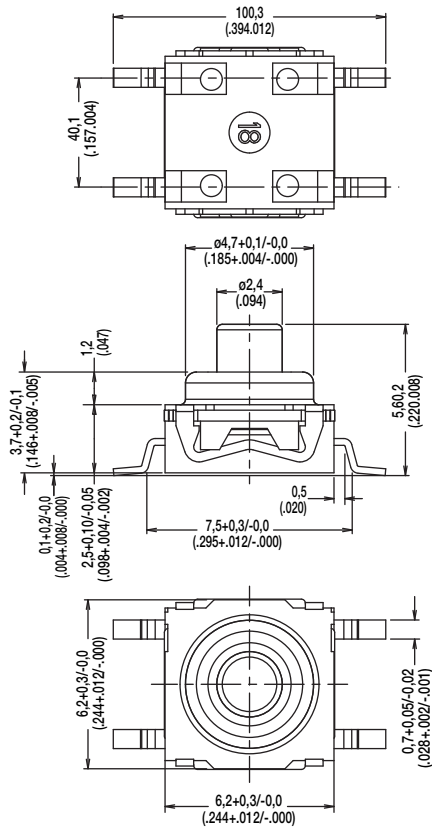
Dimensions shown in: mm (inch)  
 Specifications and dimensions subject to change

# KSC5 Series Tact Switch with Rocker Option for SMT

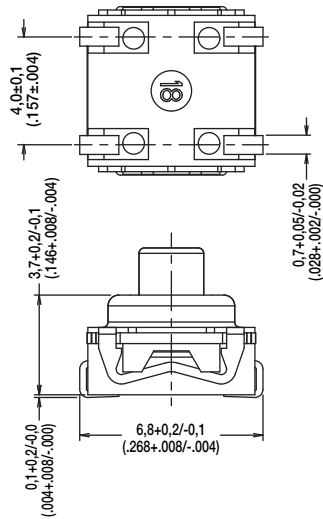
KSC5



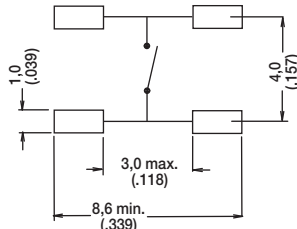
KSC521G



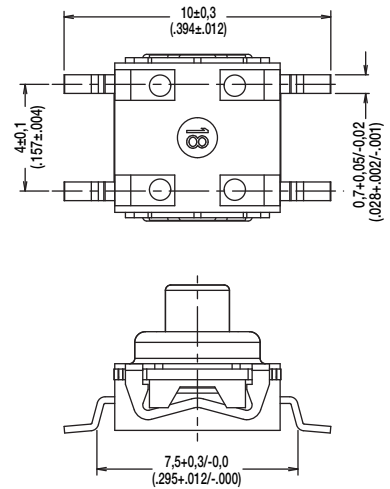
J J BEND



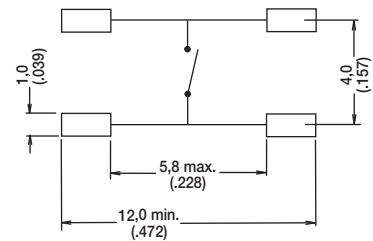
PAD LAYOUT



G GULLWING

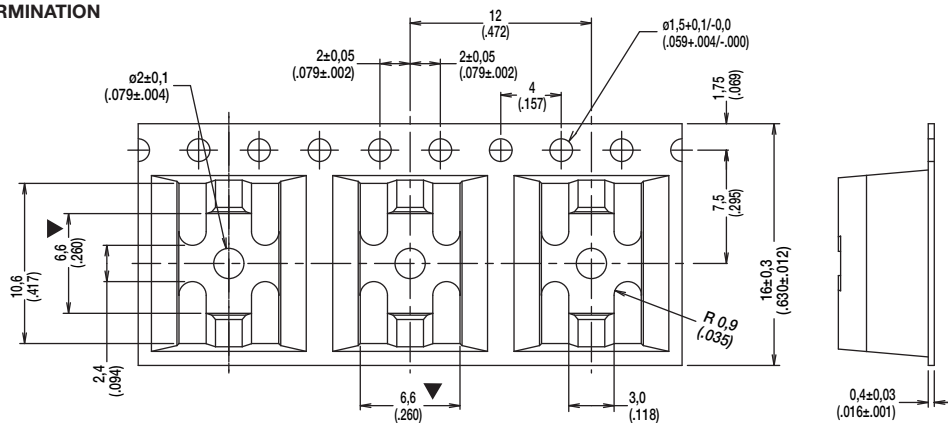


PAD LAYOUT



## TAPE & REEL

FOR KSC5 G & J TERMINATION



DIRECTION OF FEED



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

B

Tactile Switches

# KSC-ST Series Sound Tunable Tact Switch

## Features/Benefits

- Positive tactile feeling
- Range of 2 sound intensity
- J or G terminations
- Tape & reel
- IP 67

## Typical Applications

- Automotive
- Industrial electronics
- Keyboards
- Medical equipment



## Specification

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

## Mechanical

Type	Sound Intensity *	Operating Force	Travel (mm)
KSC441J ST1 LFS	>50dBA	3.4 ± 1N	0.7 ± 0.25
KSC441J ST2 LFS	<30dBA	3.4 ± 1N	0.35 ± 0.20
KSC461J ST1 LFS	>50dBA	4.5/8.0N	1.0 ± 0.3
KSC461J ST2 LFS	<30dBA	4.5/8.0N	0.5 ± 0.2

## OPERATING LIFE:

300,000 cycles for KSC44 and KSC461JST2LFS  
100,000 cycles for KSC461JST1LFS

- (\*) Sound intensity is given as a reference, switch isolated, outside any additive part such as PCB, button, etc. The sound intensity after product integration may change according to the surrounding parts. For other features, please refer to the KSC Series data sheets.

## 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 V  
CONTACT RESISTANCE: < 100 mΩ  
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:	-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.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

## Packaging

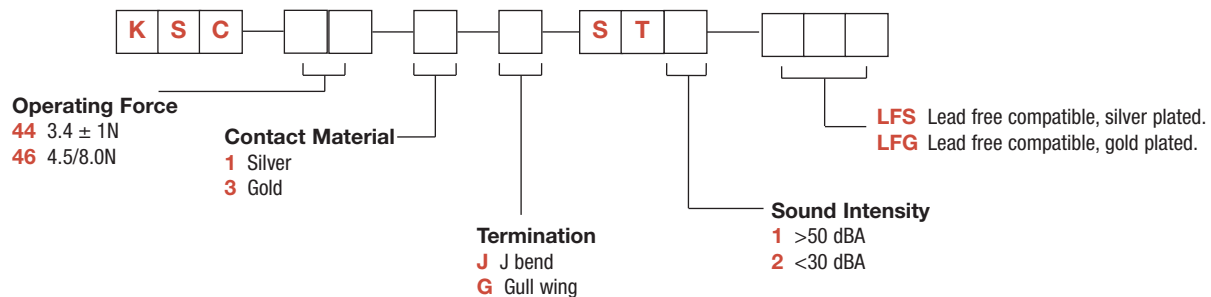
In reels of 1,000 pieces.  
Dimensions of reels according to EIA RS481 or IEC 2863.  
External diameter 330 mm ± 2 mm.

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

## How To Order

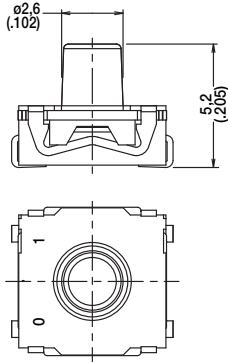
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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



# KSC-ST Series Sound Tunable Tact Switch

## ACTUATOR

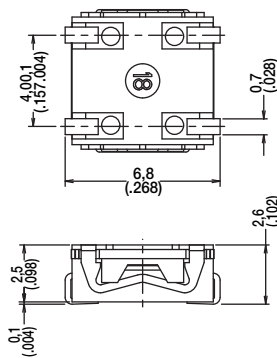


## CONTACT MATERIAL

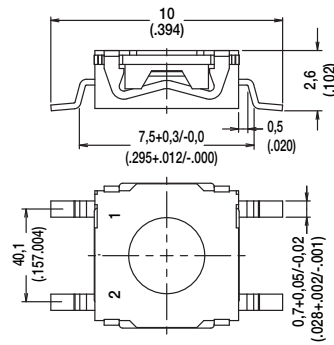
OPTION CODE	MATERIAL
<b>1</b>	SILVER
<b>3</b>	GOLD

## TERMINATION

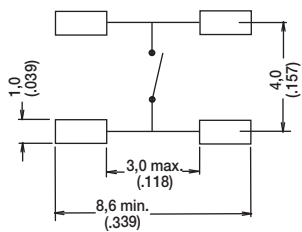
### J J BEND



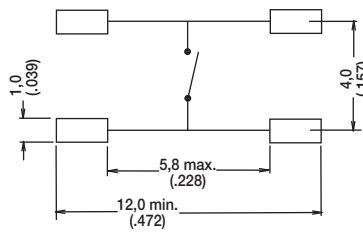
### G GULLWING



### PAD LAYOUT



### PAD LAYOUT



First Angle  
Projection

Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



# KSC-ST Series Sound Tunable Tact Switch

SOUND INTENSITY



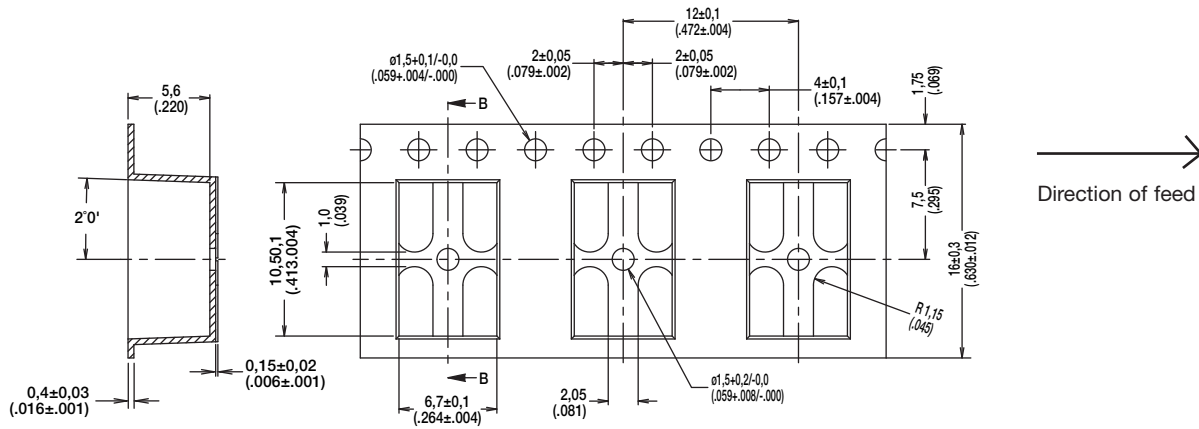
OPTION CODE	SOUND INTENSITY
ST1	>50 dBA
ST2	<30 dBA

Tactile Switches

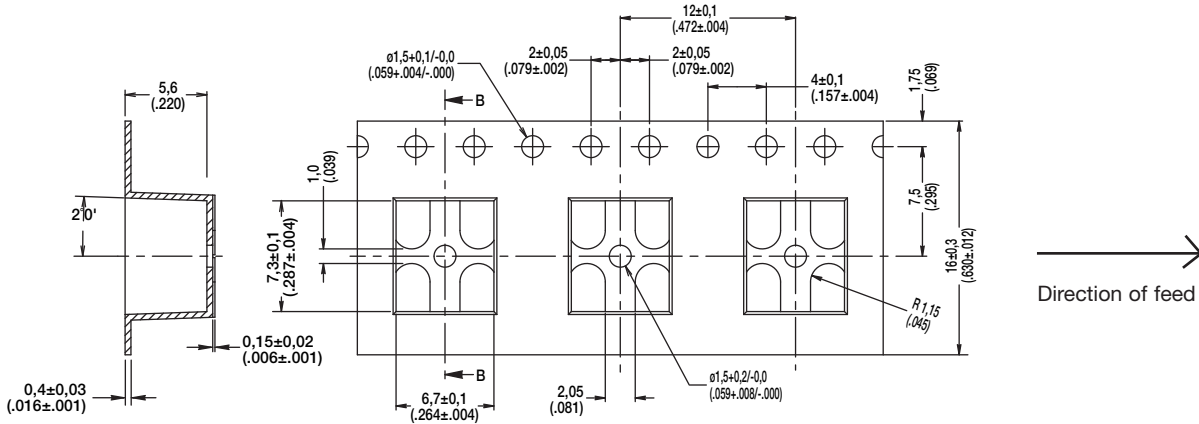
B

## TAPE & REEL

FOR KSC4 FOR G TERMINATION



FOR KSC4 FOR J TERMINATION



First Angle  
Projection



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# KT Series Right Angle Sealed Tact Switch for SMT



## Features/Benefits

- 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
- IP 57
- RoHS compliant and compatible

## Typical Applications

- Telecommunications
- Computer products
- Instrumentation
- Power supply

## Specification

CONTACT ARRANGEMENT: SPST, N.O.  
TERMINALS: Gullwing type for SMT

## 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 TEMPERATURE: -40°C to 90°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.

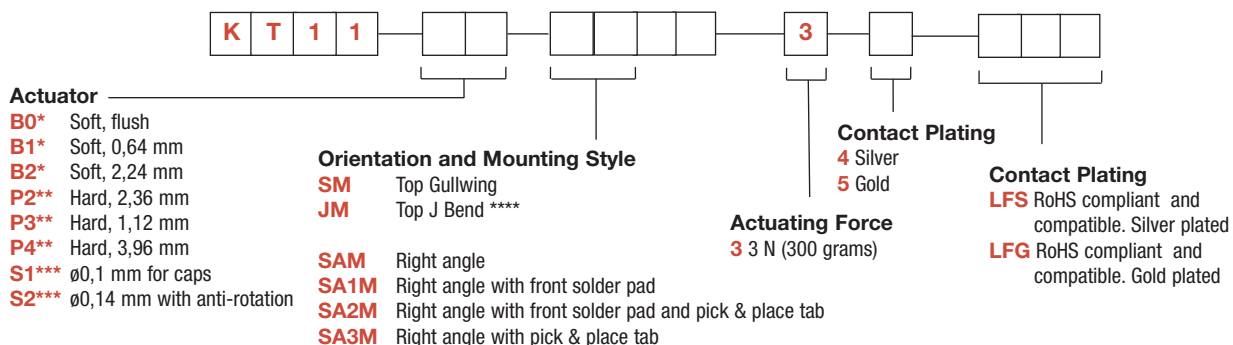
## How To Order

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 mounting bracket only.

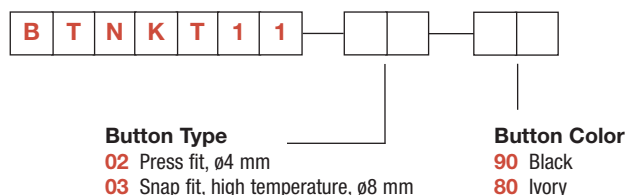
\*\* P4 available with A1 & A2 mounting bracket only.

\*\*\* 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



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

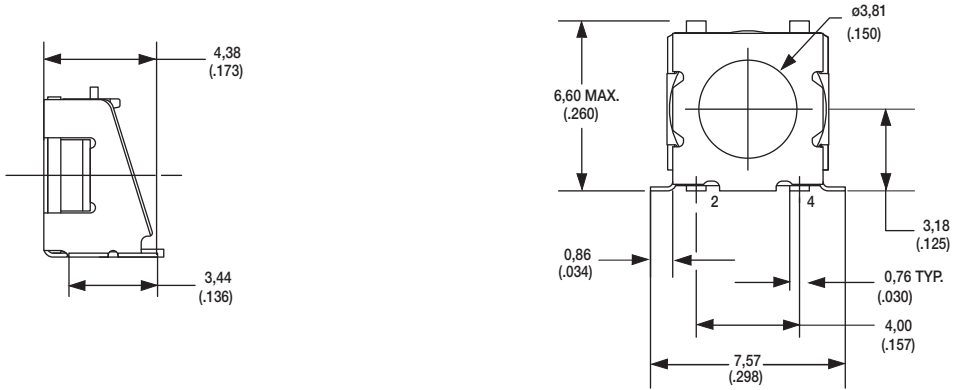


Tactile Switches

# KT Series Right Angle Sealed Tact Switch for SMT

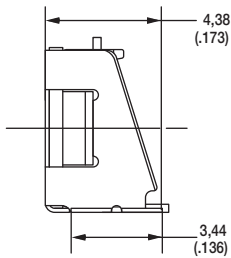
SERIES 

**KT11**

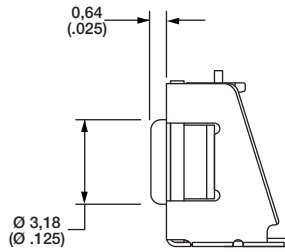


ACTUATOR 

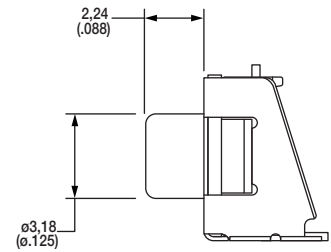
**B0 SOFT, FLUSH\***



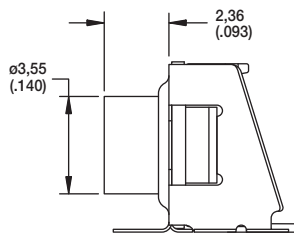
**B1 SOFT, 0,64 mm\***



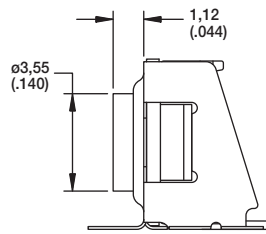
**B2 SOFT, 2,24 mm\***



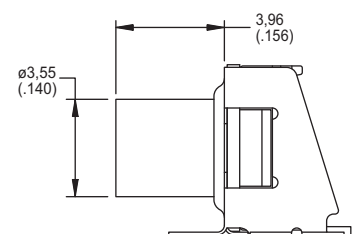
**P2 HARD, 2,36 mm**



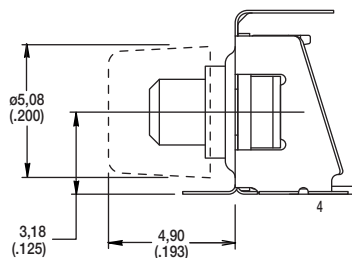
**P3 HARD, 1,12 mm**



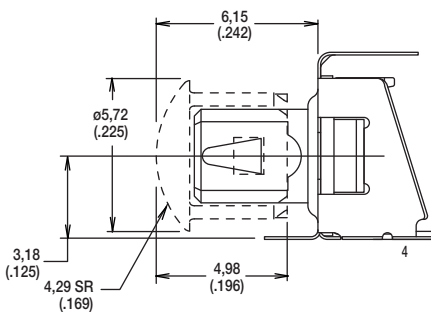
**P4 HARD, 3,96 mm\*\***



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



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



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

[www.ck-components.com](http://www.ck-components.com)



# KT Series Right Angle Sealed Tact Switch

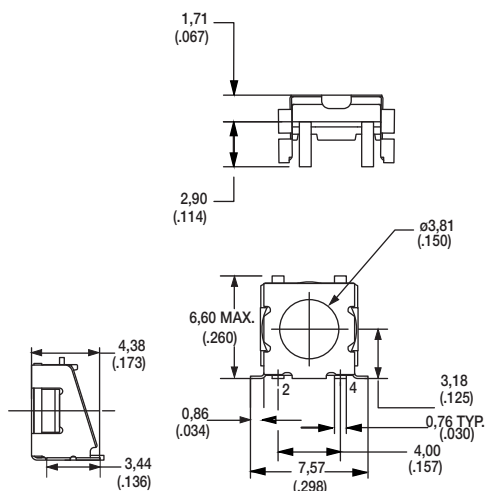
## ORIENTATION & MOUNTING STYLE



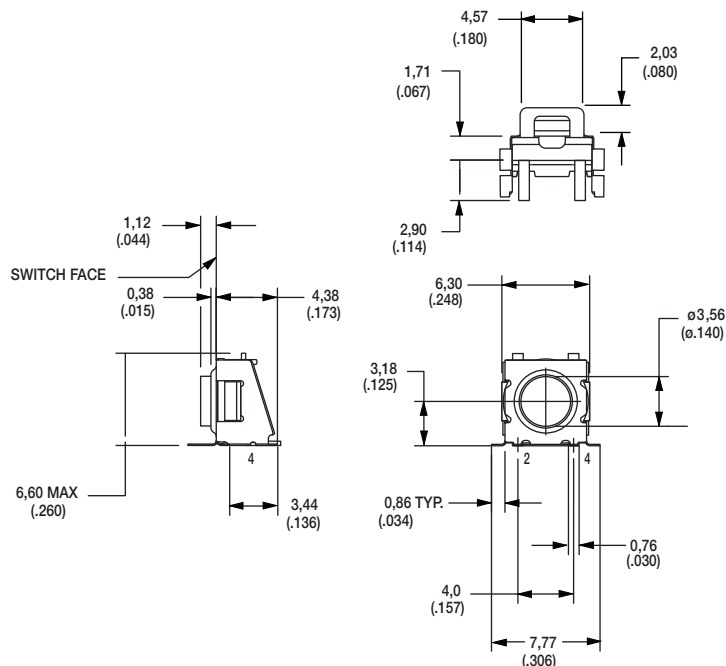
**SM** TOP GULLWING

**JM** TOP J BEND

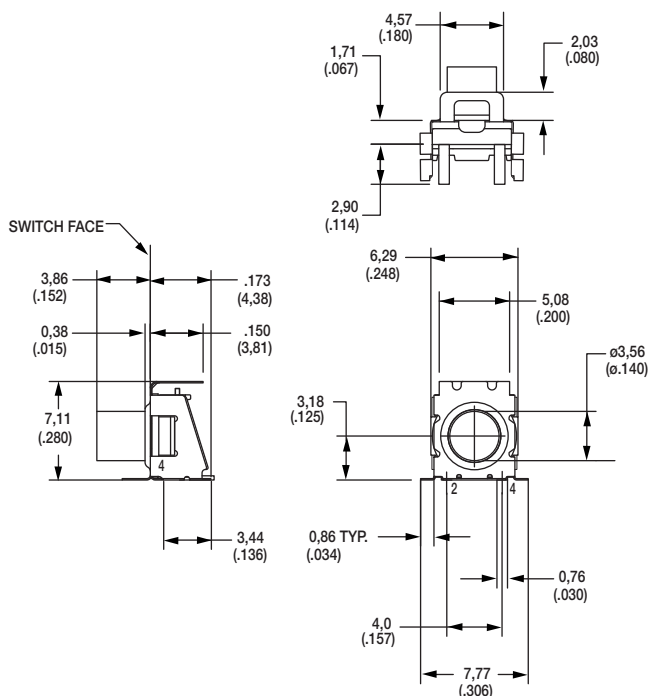
**SAM** RIGHT ANGLE



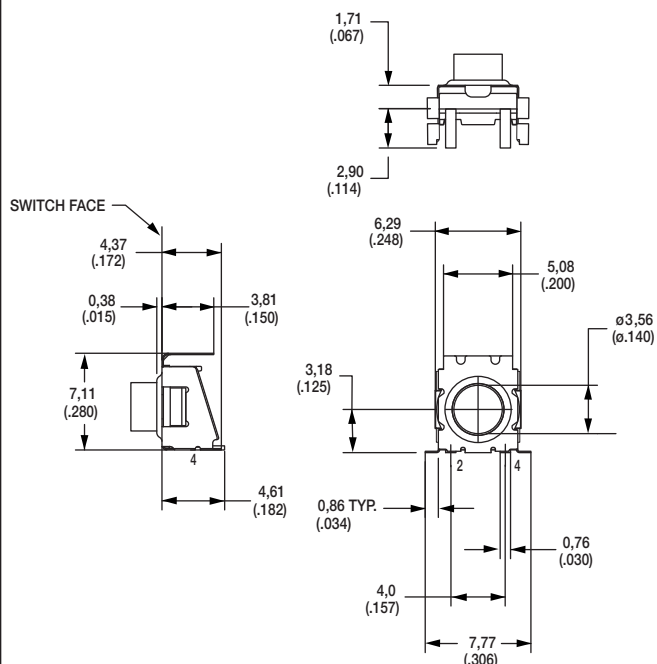
**SA1M** RIGHT ANGLE WITH FRONT SOLDER PAD



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



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



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



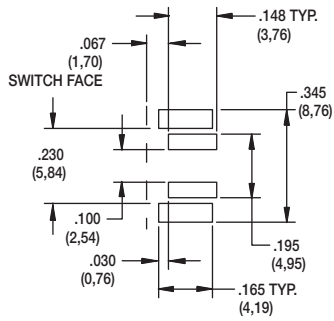
**B**

Tactile Switches

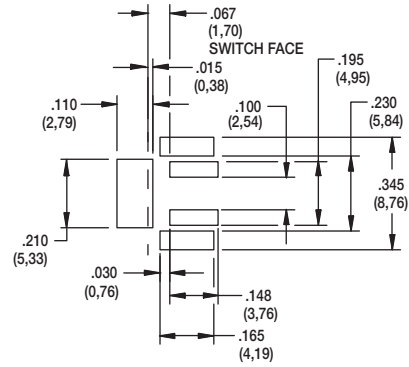
# KT Series Right Angle Sealed Tact Switch

## MOUNTING BRACKET

PAD LAYOUT  
SAM & SA3M MOUNTING BRACKET



PAD LAYOUT  
SA1M & SA2M MOUNTING BRACKET



## ACTUATING FORCE

OPTION CODE	FORCE
<b>3</b>	3 N (300 grams)

## CONTACT PLATING

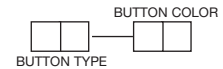
OPTION CODE	MATERIAL
<b>4</b>	SILVER
<b>5</b>	GOLD

## BUTTON

### BUTTON

To order buttons in bulk

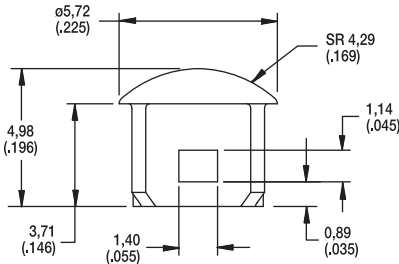
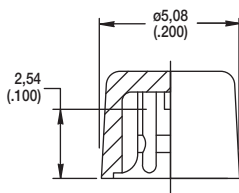
**B T N K T 1 1**



### Button Type

**02** PRESS FIT, Ø4 mm

**03** SNAP FIT, HIGH TEMPERATURE, Ø8 mm



### Button Color

OPTION CODE	BUTTON COLOR
<b>90</b>	BLACK
<b>80</b>	IVORY

# 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
- IP 40 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: 40 N (400 grams)

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 EIA-RS-481 standard.

## Electrical

	Silver	Gold
SWITCHING POWER MAX.:	1.0 VA	0.50 VA
MAXIMUM POWER:	0.2 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	10 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA
DIELECTRIC STRENGTH (50 Hz, 1 min.):	> 250 V	
CONTACT RESISTANCE:	<100m Ω	
INSULATION RESISTANCE:	<10 <sup>9</sup> Ω	
BOUNCE TIME:	< 1 ms	

## Environmental

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

## Process

Compatible with the lead free soldering profile.

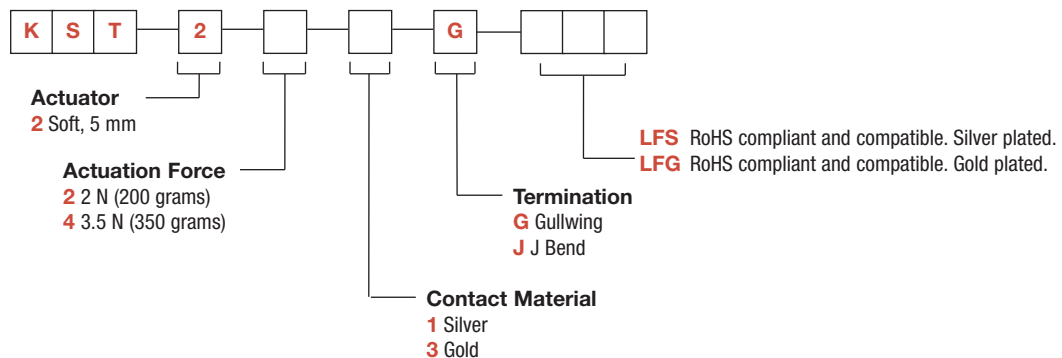
**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## 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.

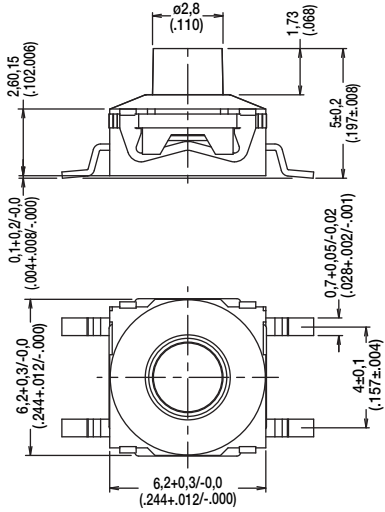
**However, please note that all the combinations of these options are not feasible.**

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

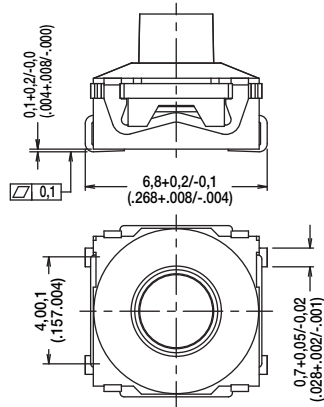


# KST Series Long Travel Tact Switch for SMT

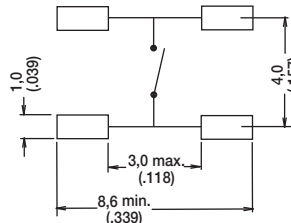
## KST



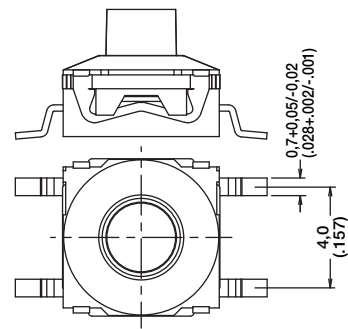
## J BEND



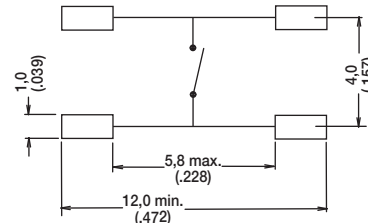
### PAD LAYOUT



## G GULLWING

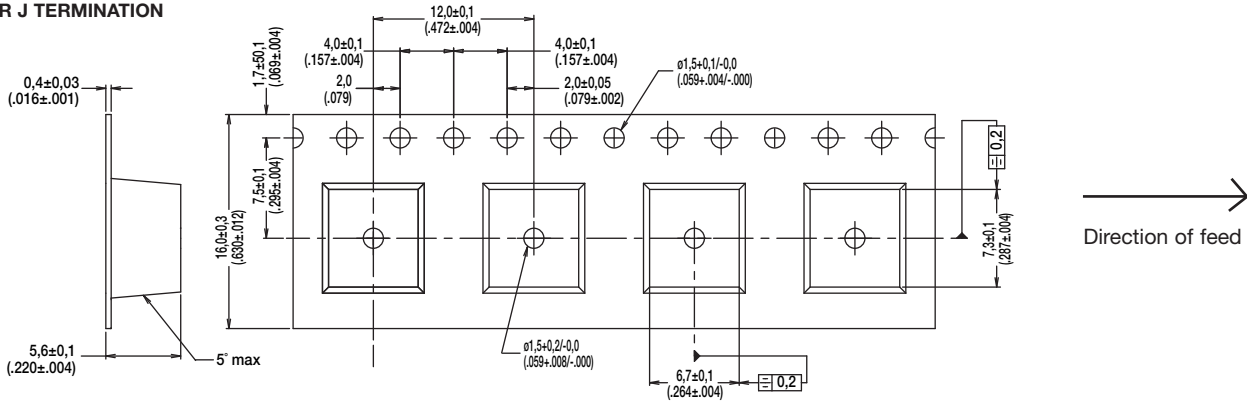


### PAD LAYOUT

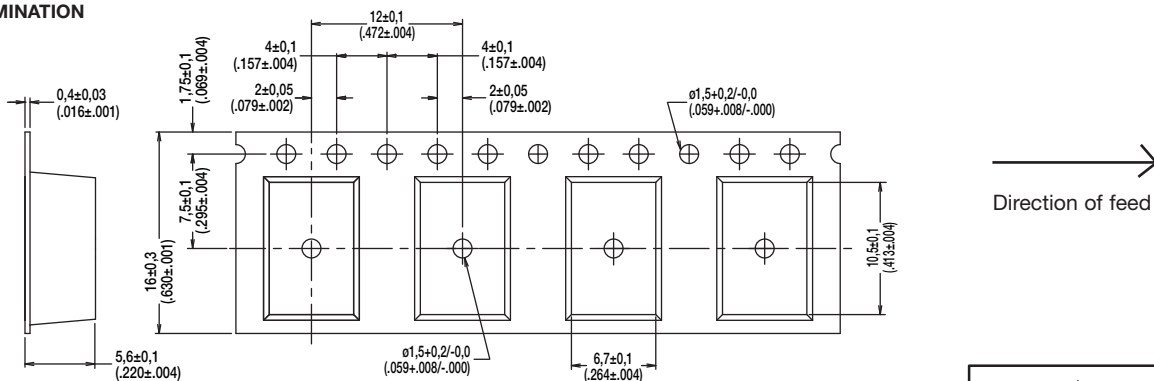


## TAPE & REEL

### FOR J TERMINATION



### FOR G TERMINATION



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

## 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 as an option

## Mechanical

Type	Operating force FA <sup>1</sup> Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
K5AT WH 43GP	4.0 (400)	100,000	0,5 (0.8)

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

## Packaging

180 or 900 pieces per reel  
 Reel dim. 180mm or 380mm

## 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

## 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

## Process

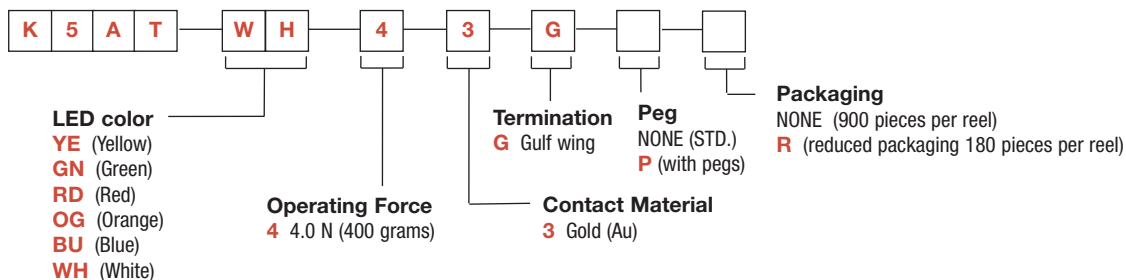
SOLDERING: Compatible with the lead free soldering profile.  
 No washing

## Materials

LEAD FREE  
 CONTACTS: Au over Ni  
 SOLDERING: Au over Ni  
 HOUSING: Thermoplastic UL94 VO  
 LED: type P-LCC-2

## 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.







# Right Angle Lighted SMT Tact Switch

## 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



B

Tactile Switches

## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: Normally Open + Normally Closed  
 TERMINALS: SMT with positioning pegs

## Mechanical

Type	Operating force FA' Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
K5V1CL43G	4.0 (400)	25,000	1.2 (2.4)

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

## Packaging

330 pieces per reel  
 Reel ø 360mm

## Electrical

POWER MIN/MAX: 0.02VA / 1.0VA  
 VOLTAGE MIN/MAX: 20mVdc – 32 Vdc  
 CURRENT MIN/MAX: 0.1mA – 100mA  
 CONTACT RESISTANCE: <150m Ω  
 INSULATION RESISTANCE: >1G Ω initial, >10M Ω 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

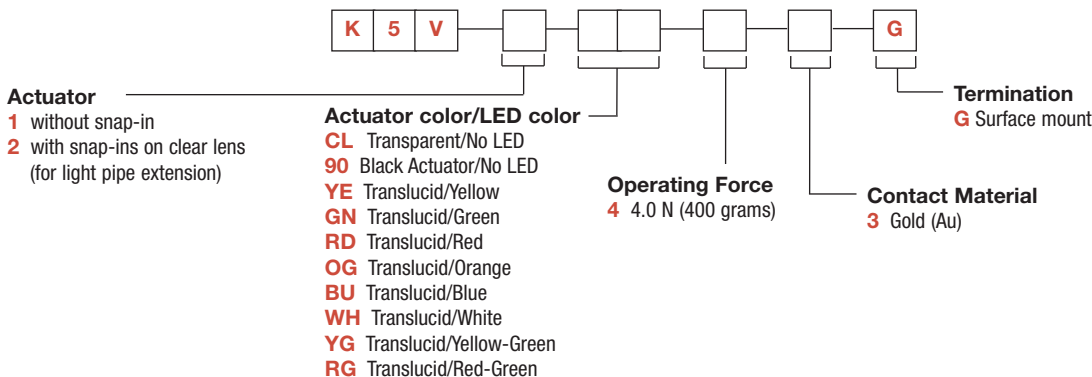
SOLDERING: Compatible with the lead free soldering profile.  
 No washing

## Materials

LEAD FREE  
 CONTACTS: Au over Ni  
 SOLDERING: Au over Ni  
 HOUSING: Thermoplastic UL94 HB

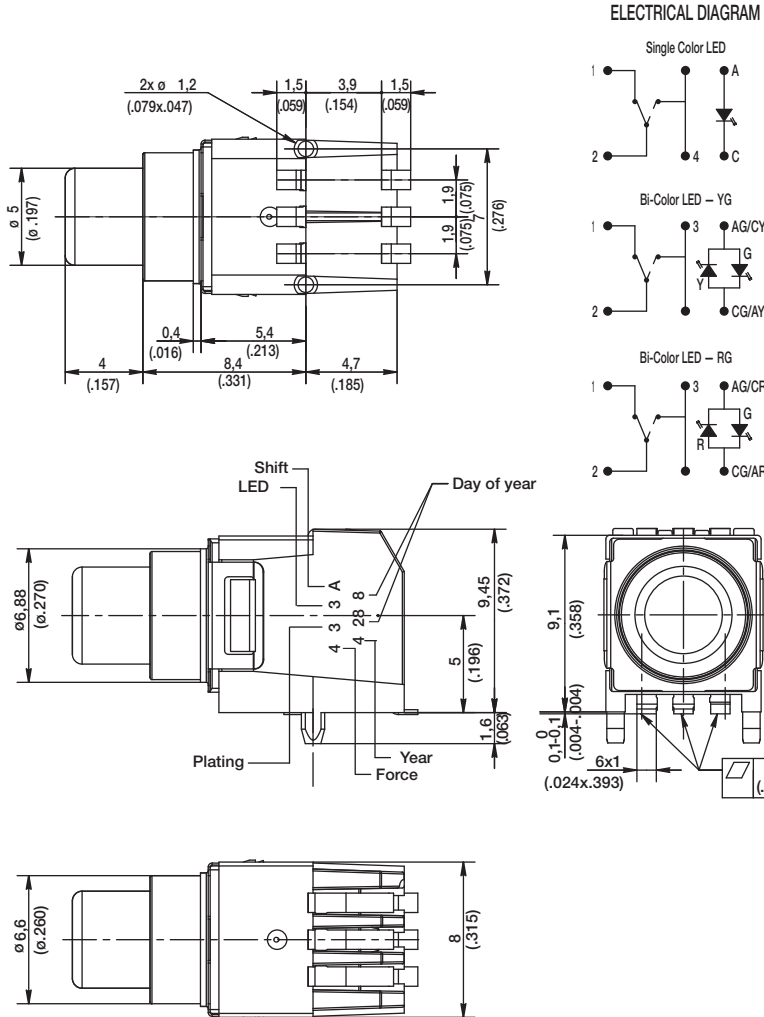
## How To Order

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.

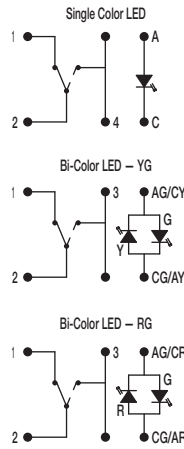


# K5V Right Angle Lighted SMT Tact Switch

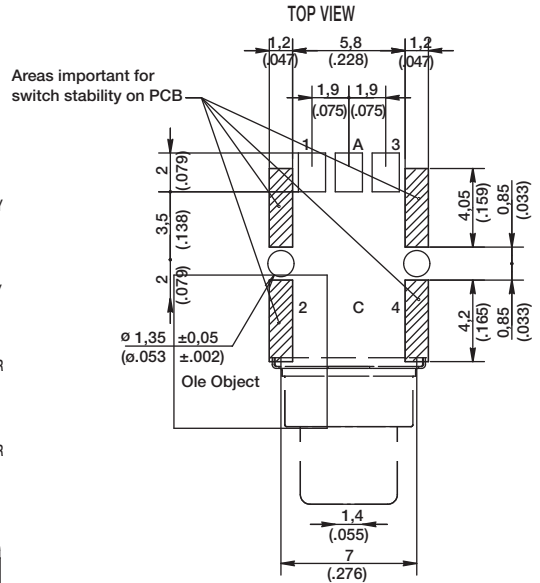
## K5V SMT



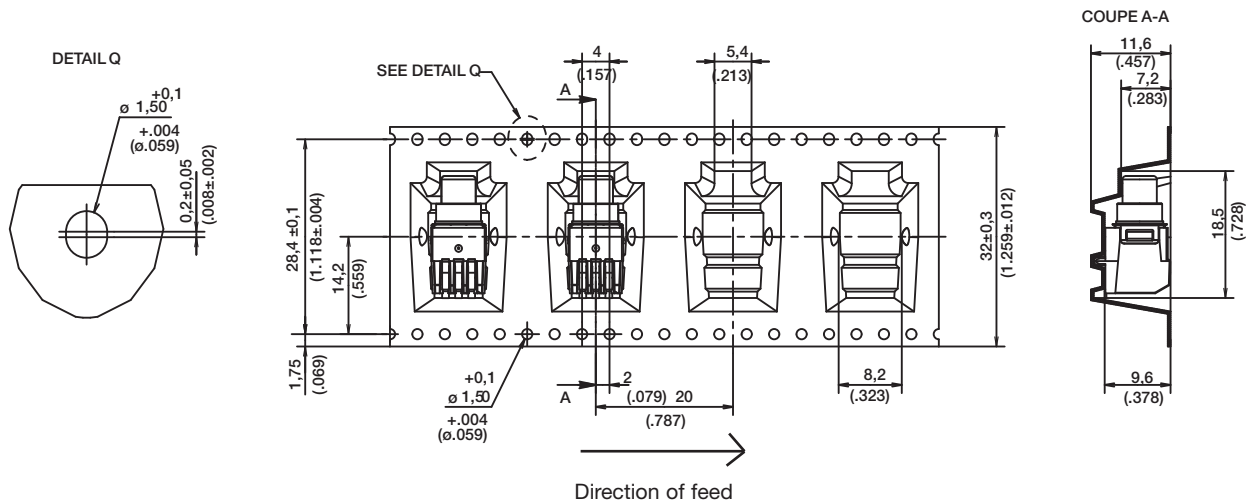
### ELECTRICAL DIAGRAM



### RECOMMENDED PCB LAYOUT



## TAPE & REEL



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# Right Angle Lighted THT Tact Switch

## Features

- Gold plated dome contact SPST/SPDT
- Excellent ergonomics
- High bright LEDs
- Reduced space usage on board
- 40 N overload
- 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



**B**  
Tactile Switches

## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: Normally Open + Normally Closed  
 TERMINALS: Through hole terminals with positioning pegs.  
 Terminals keying in option

## Electrical

POWER MIN/MAX: 0.02VA / 1.0VA  
 VOLTAGE MIN/MAX: 20mVdc – 32 Vdc  
 CURRENT MIN/MAX: 0.1mA – 100mA  
 CONTACT RESISTANCE: <150m Ω  
 INSULATION RESISTANCE: >1G Ω initial, >10M Ω after damp heat  
 BOUNCE TIME: <5ms

## Mechanical

Type	Operating force FA <sup>1</sup> Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
K5V1CL43T	4.0 (400)	25,000	1.2 (2.4)

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

## 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

## Packaging

60 pieces per tray  
 300 pieces per box

## Process

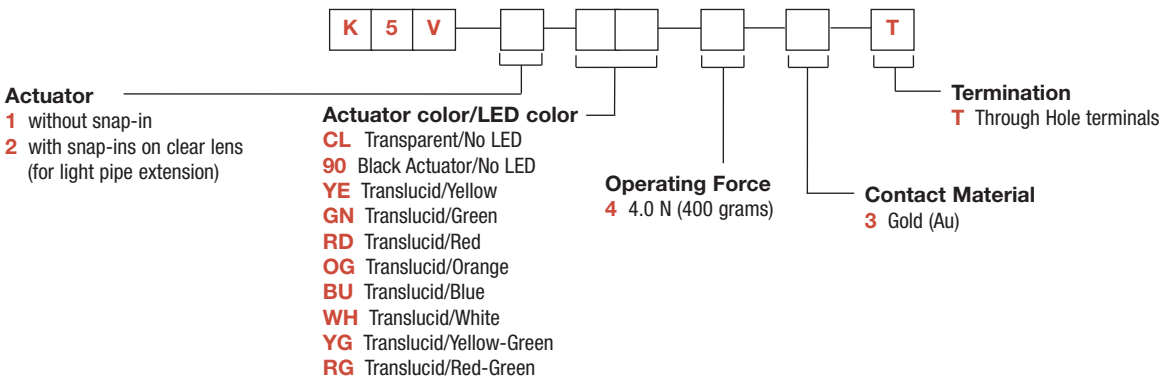
SOLDERING: Compatible with the lead free soldering profile.

## Materials

LEAD FREE  
 CONTACTS: Au over Ni  
 SOLDERING: Au over Ni  
 HOUSING: Thermoplastic UL94 HB

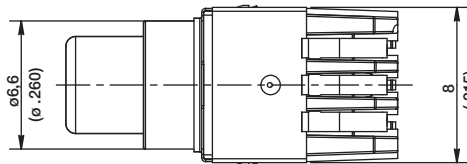
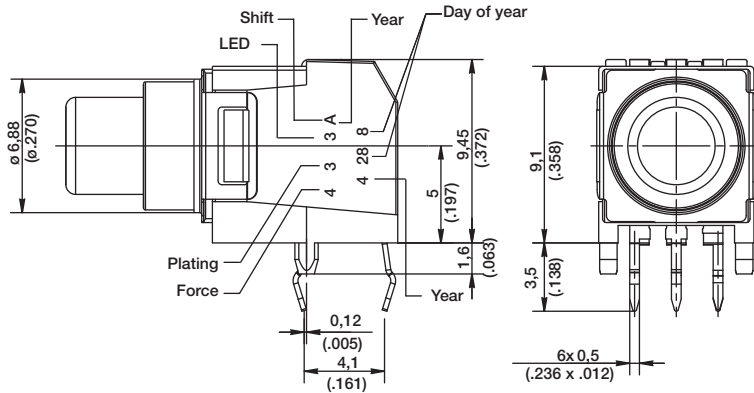
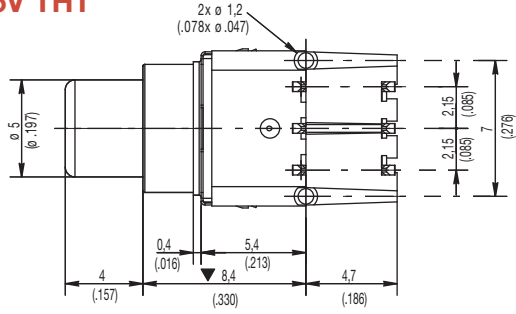
## How To Order

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.

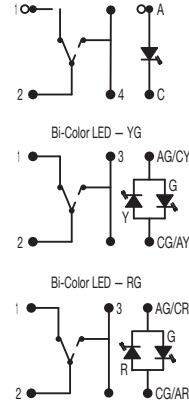


# K5V Right Angle Lighted THT Tact Switch

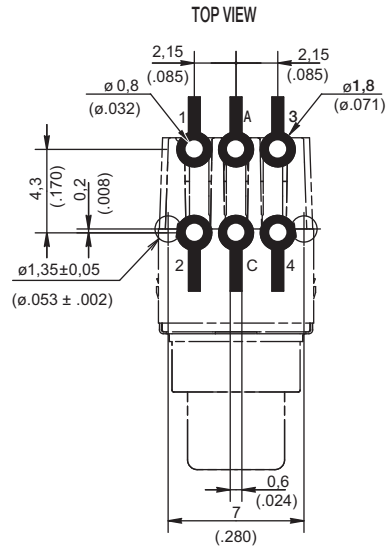
## K5V THT



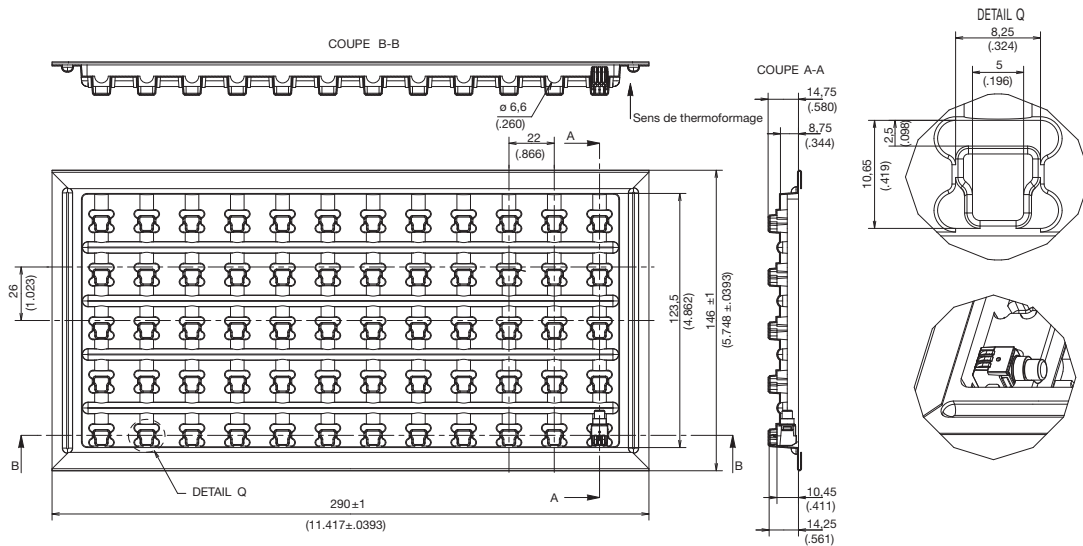
### ELECTRICAL DIAGRAM



### RECOMMENDED PCB LAYOUT (WITH HOLES)



## TRAY



# K5V Panel Mount Lighted Tact Switch

## Features

- Gold plated dome contact SPST/SPDT
- Excellent ergonomics
- High bright leds
- Reduced space usage on panel
- 40 N overload
- RoHS compliant

## 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



B

Tactile Switches

## Specification

FUNCTION: momentary action  
 CONTACT ARRANGEMENT: Normally Open + Normally Closed  
 BACKLIGHTING: high bright LED, independent terminals  
 TERMINALS: Solder terminals with wire holes 1.3 x 0.6mm

## Mechanical

Type	Operating force FA <sup>1</sup> Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
K5V1CL43P	4.0 (400)	25,000	1.2 (2.4)

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

## Packaging

60 pieces per tray  
 300 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 Ω  
 INSULATION RESISTANCE: >1GΩ initial, >10M Ω 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

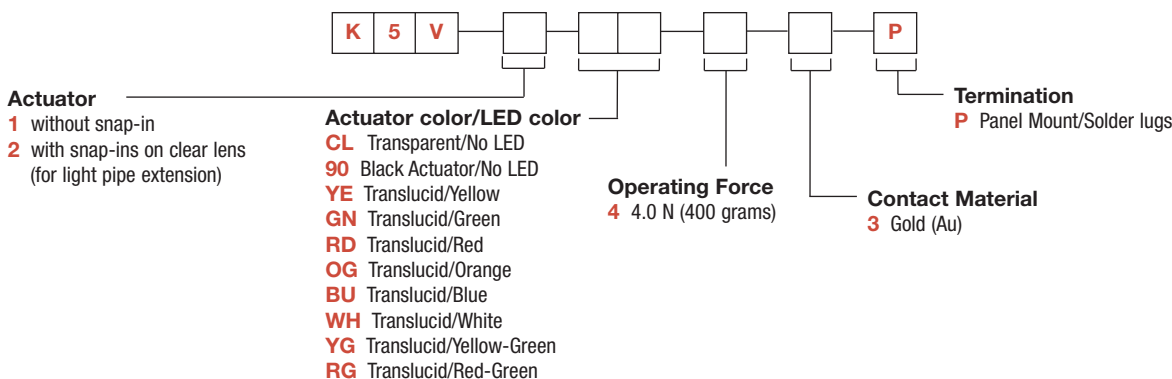
SOLDERING: Low wattage soldering iron (25-50 watts max).  
 Solder time 3 seconds max. No washing.

## Materials

LEAD FREE  
 CONTACTS: Au over Ni  
 SOLDERING: Au over Ni  
 HOUSING: Thermoplastic UL94 HB

## 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.



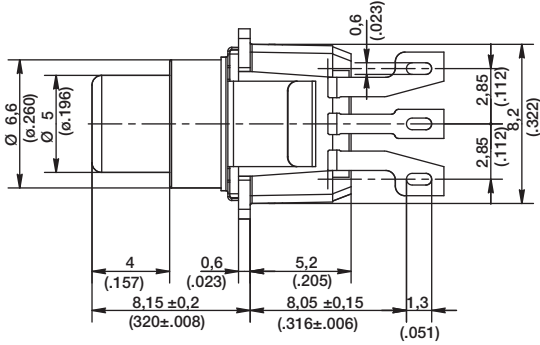
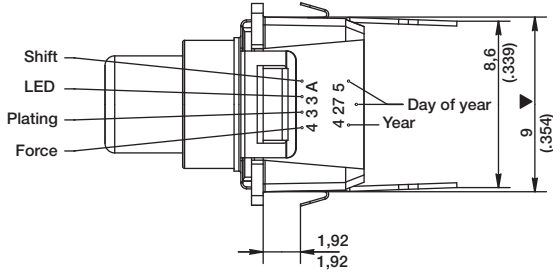
# K5V Panel Mount Lighted Tact Switch

K5V PM

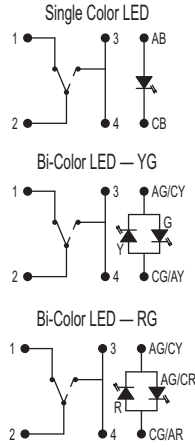
Tactile Switches

B

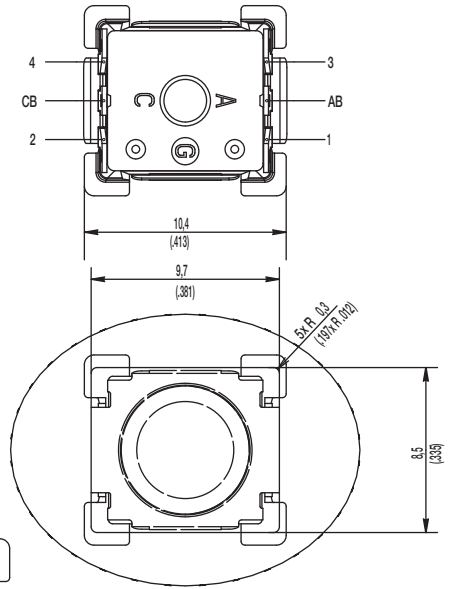
## PRODUCT IDENTIFICATION AND DATE CODES



## ELECTRICAL DIAGRAM

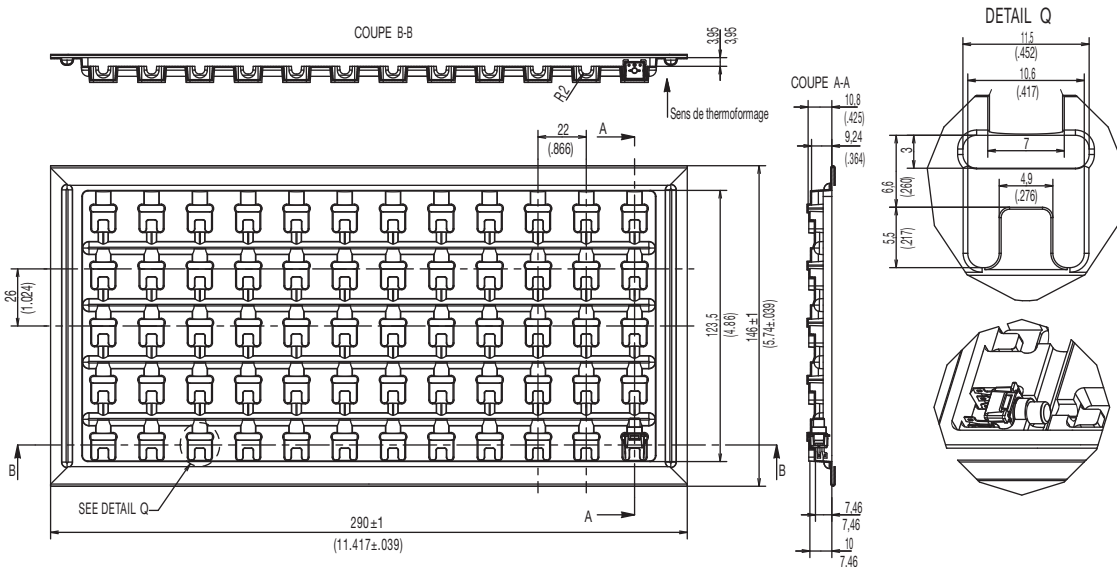


## TERMINAL REFERENCES



## TRAY

SUITABLE FOR PANEL THICKNESS OF 1.8MM MAX



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# KSB & KSF Series Low-profile Tact Switch



## Features/Benefits

- Low profile
- Protected against flux
- KSB without top sealing
- KSF with top sealing
- RoHS compliant and compatible

## Typical Applications

- Low profile keyboards
- Instrumentation
- Industrial control
- Medical
- Military



Tactile Switches

## Specification

CONTACT ARRANGEMENT: SPST, N.O.  
DOUBLE OVERMOLDING ON TERMINAL  
MEMBRANE SEALING  
TERMINALS: PC pins

## Mechanical

Type	Actuation force Newtons (grams)	Operating life (operations)
KSB0M110	1,2 - 2	100,000
KSB0M410	2,25 - 3,75	500,000
KSF0M210	1.3 (130)	100,000
KSF0M310	1.6 (160)	500,000
KSF0M410	3.0 (300)	100,000
KSF0M510	5.0 (500)	100,000
KSF0M910	3.0 (300)	500,000

**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
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA
DIELECTRIC STRENGTH (50 Hz, 1 min.):	300 Vrms	
CONTACT RESISTANCE:	KSF 100 m Ω; KSB 100 m Ω	
INSULATION RESISTANCE (100 V):	≤ 10 <sup>9</sup> Ω	
BOUNCE TIME:	1 ms	

## Environmental

	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 90°C	-40°C to 125°C
STORAGE TEMPERATURE:	-40°C to 90°C	-55°C to 125°C

## Process

Wave soldering compatible with lead free soldering profile.

## Packaging

KSF can be delivered in tubes of 65 pieces for automatic insertion.  
KSB in boxes of 500 pieces for manual insertion.

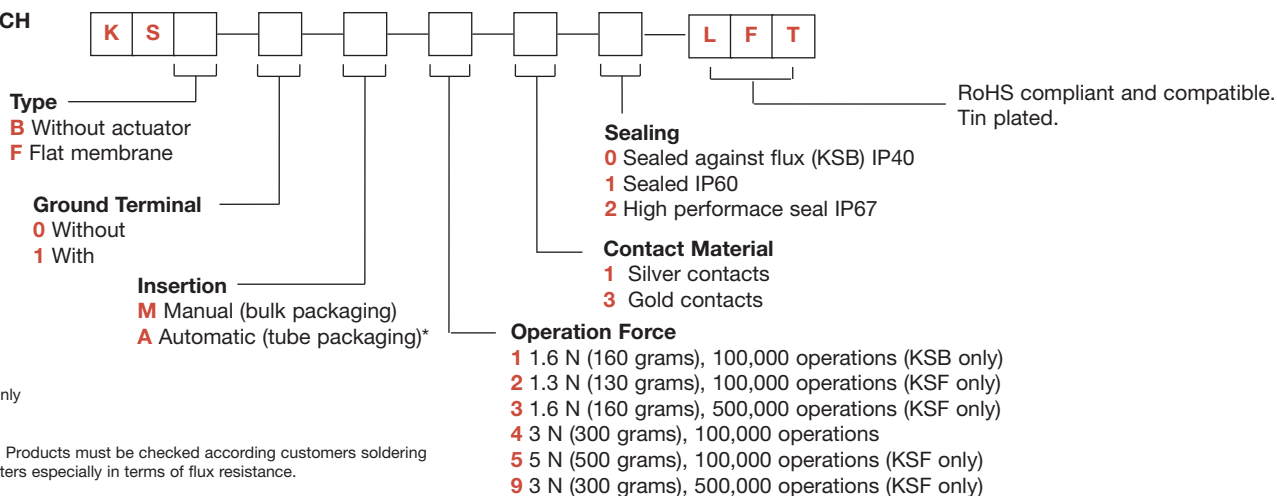
## How To Order

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.**

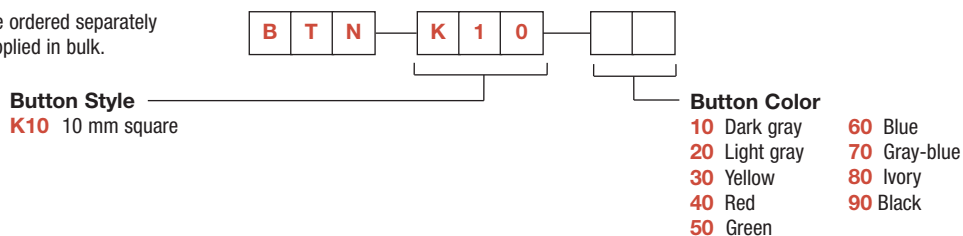
## SWITCH



\* KSF only

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

**BUTTON for KSF** Button must be ordered separately and will be supplied in bulk.



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

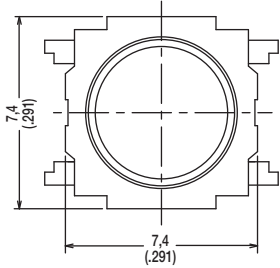
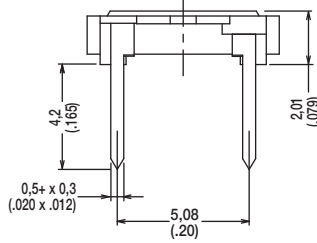
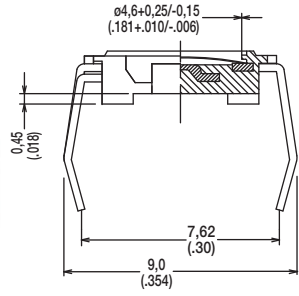


# KSB & KSF Series Low-profile Tact Switch

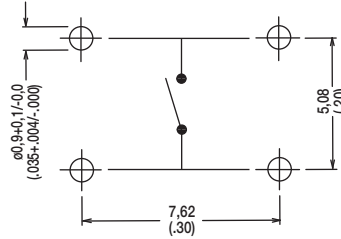
## KSB



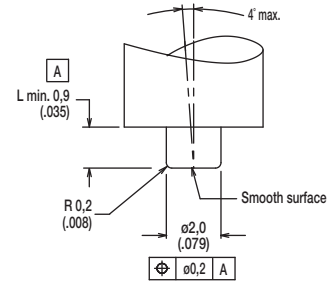
KSB0M110



### PCB LAYOUT



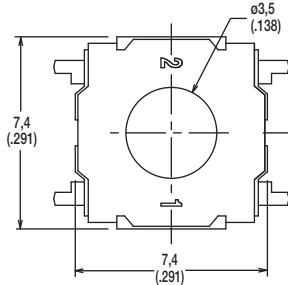
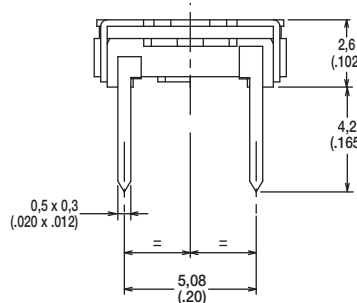
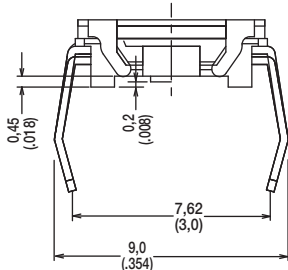
### RECOMMENDED SHAPE OF ACTUATOR



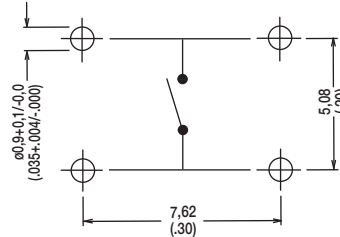
## KSF



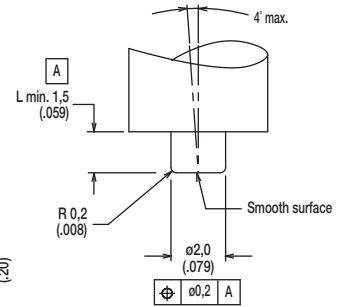
KSF0M111



### PCB LAYOUT

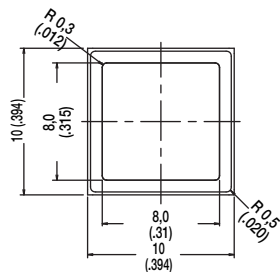
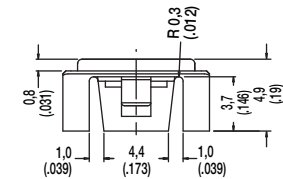
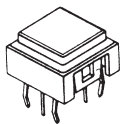


### RECOMMENDED SHAPE OF ACTUATOR



## BUTTON

**K10** BUTTON FOR KSF ONLY Button must be ordered separately and will be supplied in bulk.



# 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



B

Tactile Switches

## Specification

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

## Mechanical

Type	Actuation force N (grams)	Operating life (operations)	Travel to make
KSA0M211	1 - 1,8	100,000	0,5 ± 0,2
KSA0M311	1 - 1,8	1,000,000	0,5 ± 0,2
KSA0M411	2,25 - 3,75	100,000	0,6 ± 0,2
KSA0M511	4,2 - 7,0	100,000	0,7 ± 0,2
KSA0M911	2,25 - 3,75	500,000	0,6 ± 0,2
KSL0M211	1 - 1,8	100,000	0,5 ± 0,2
KSL0M311	1 - 1,8	1,000,000	0,5 ± 0,2
KSL0M411	2,25 - 3,75	100,000	0,6 ± 0,2
KSL0M511	4,2 - 7	100,000	0,7 ± 0,2
KSL0M911	2,25 - 3,75	500,000	0,6 ± 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	1 mA
DIELECTRIC STRENGTH: 300 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 90°C	-40°C to 125°C
STORAGE TEMPERATURE:	-40°C to 90°C	-55°C to 125°C

## Process

Wave soldering compatible with lead free soldering profile.

## Packaging

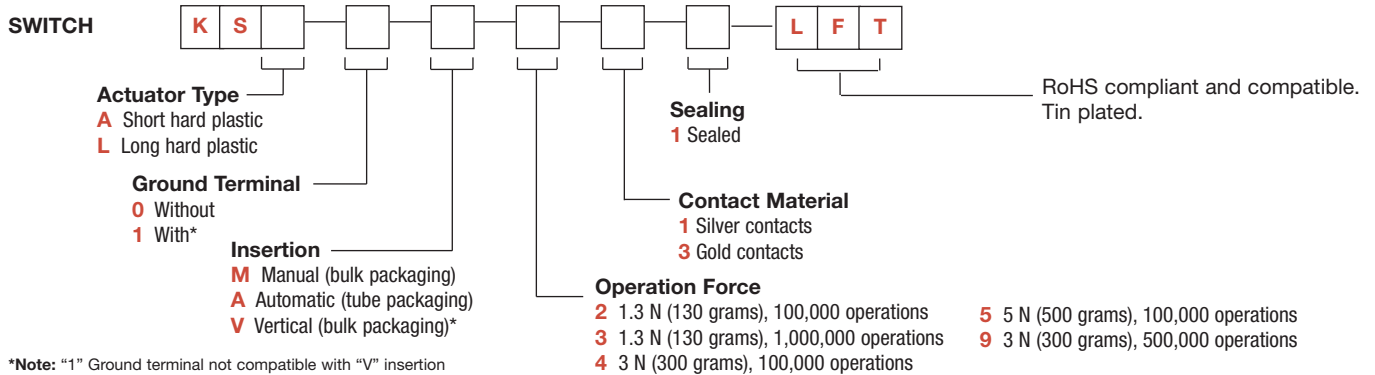
Can be delivered in tubes of 65 pieces for automatic insertion or in boxes of 500 pieces for manual insertion (250 pieces for KSL, KSLV, KSAV).

## How To Order

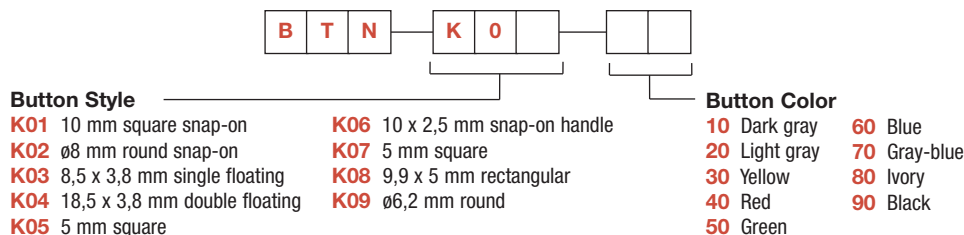
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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.



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



\*NOTE: Please note that all buttons are not RoHS compliant. Please check the compliance with your C&K sales representative.



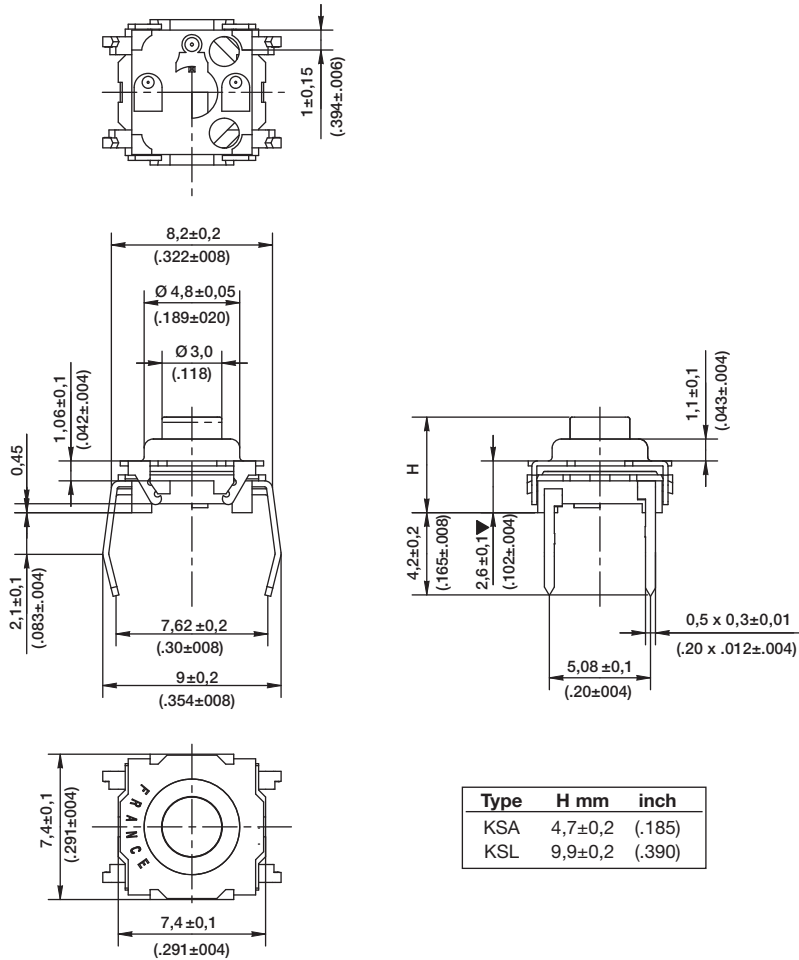
Dimensions shown in: mm (inch)  
 Specifications and dimensions subject to change

www.ck-components.com

# KSA & KSL Series Sealed Tact Switch

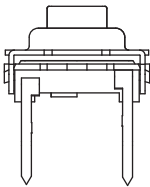
ACTUATOR TYPE

KSA & KSL

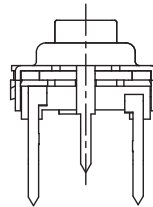


GROUND TERMINAL

0 WITHOUT



1\* WITH



\*Not compatible with "V" insertion



**C&K**

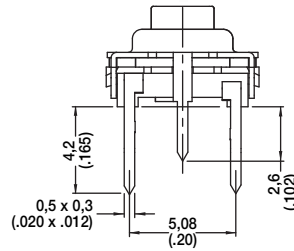
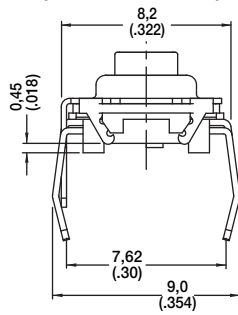
Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

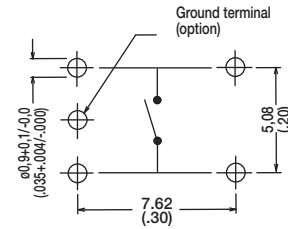
# KSA & KSL Series Sealed Tact Switch

## INSERTION

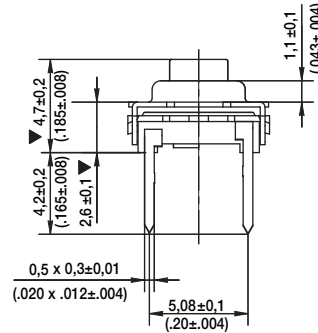
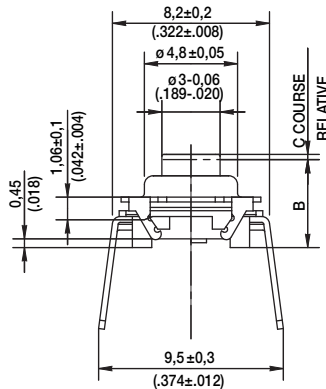
### M MANUAL (BULK PACKAGING)



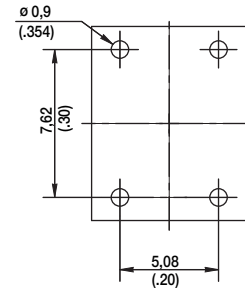
### PCB LAYOUT



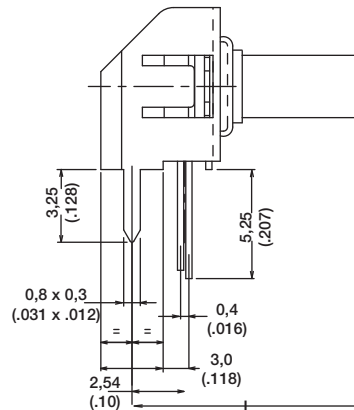
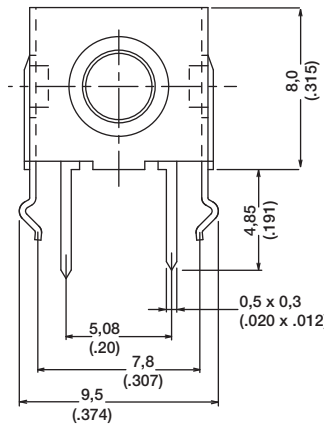
### A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)



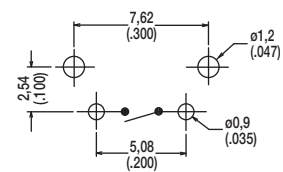
### PCB LAYOUT



### 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) 100,000 operations
<b>3</b>	1.3 N (130 grams) 1,000,000 operations
<b>4</b>	3.0 N (300 grams) 100,000 operations
<b>5</b>	5.0 N (500 grams) 100,000 operations
<b>9</b>	3.0 N (300 grams) 500,000 operations



First Angle Projection

Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



# KSA & KSL Series Sealed Tact Switch

## CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL
1	Silver contacts
3	Gold contacts

B

Tactile Switches

## SEALING



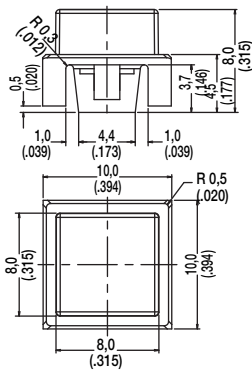
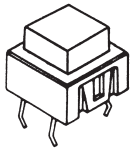
OPTION CODE	SEALING
1	Totally sealed - sealed IP64

## BUTTONS

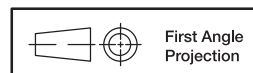
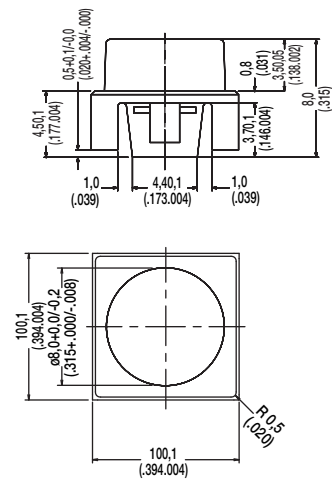
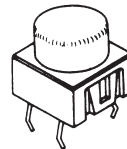
Buttons must be ordered separately and will be supplied in bulk.

BUTTON TYPE	KSA	KSL	KSAV	KSLV
K01	X			
K02	X			
K03	X	X	X	X
K04	X	X	X	X
K05	X	X		X
K06	X			
K07		X		X
K08		X		X
K09		X		X

K01



K02

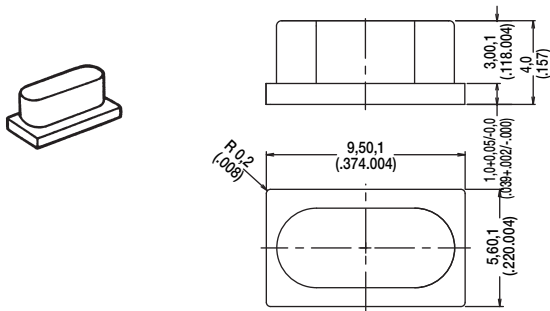


Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

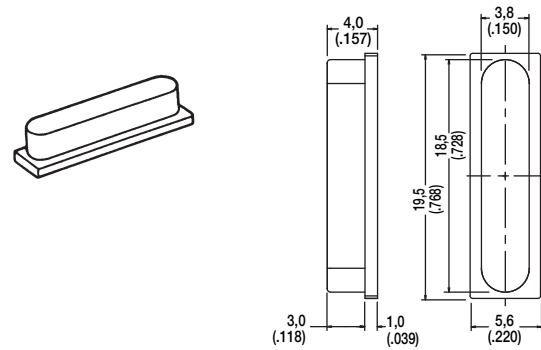
# KSA & KSL Series Sealed Tact Switch

**B**  
Tactile Switches

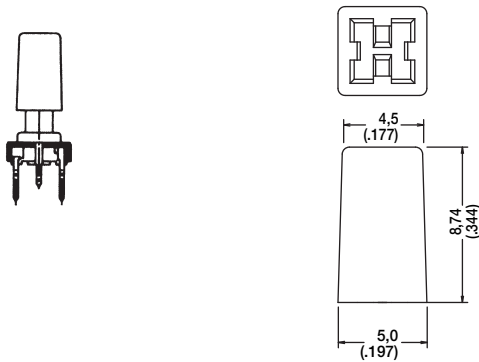
**K03**



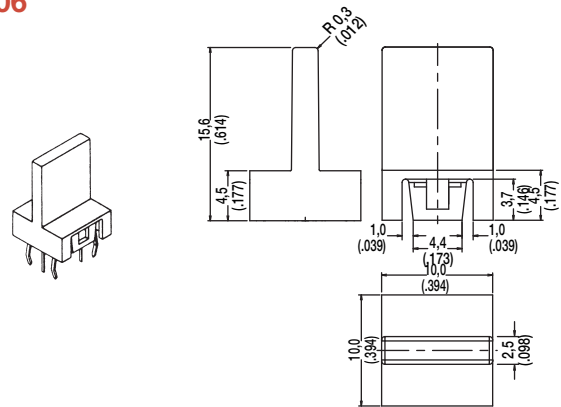
**K04**



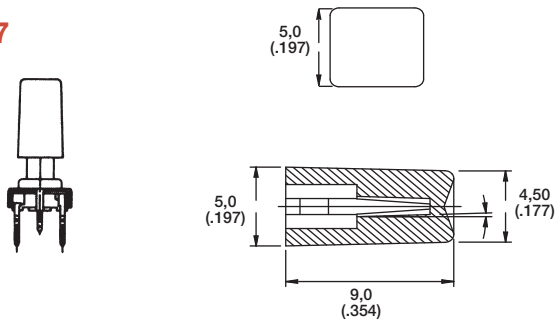
**K05**



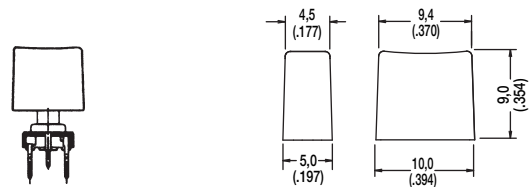
**K06**



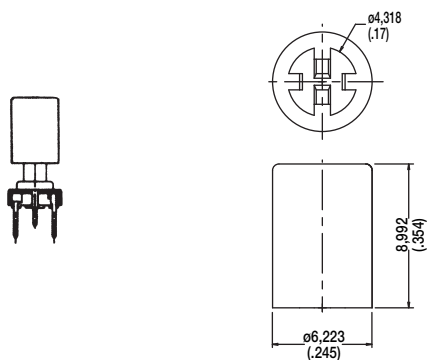
**K07**



**K08**



**K09**



Dimensions shown in: mm (inch)  
 Specifications and dimensions subject to change



# 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  
Double overmold on terminals

## Mechanical

Type	Actuation force N (grams)	Operating life (operations)	Travel to make
KSA0M212	1,0 - 1,65	100,000	0,5 ± 0,15
KSA0M312	1,0 - 1,65	1,000,000	0,5 ± 0,15
KSA0M412	2,75 - 3,75	100,000	0,6 ± 0,25
KSA0M512	3,75 - 6,25	100,000	0,7 ± 0,25
KSA0M912	2,25 - 3,75	500,000	0,6 ± 0,25

## 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)

## 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: 300 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 90°C	-40°C to 125°C
STORAGE TEMPERATURE:	-40°C to 90°C	-55°C to 125°C

## Process

Wave soldering compatible with lead free soldering profile.

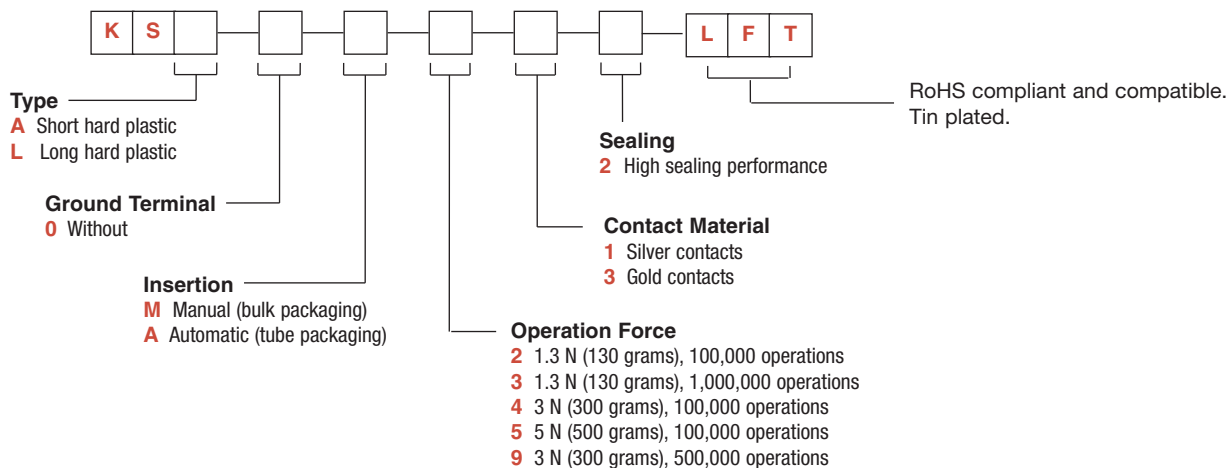
**NOTE:** Specifications listed above are for switches with standard options.  
For information on specific and custom switches, consult Customer Service Center.

## 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.**



# KSA & KSL MKII Series High Performance Sealed Tact Switch

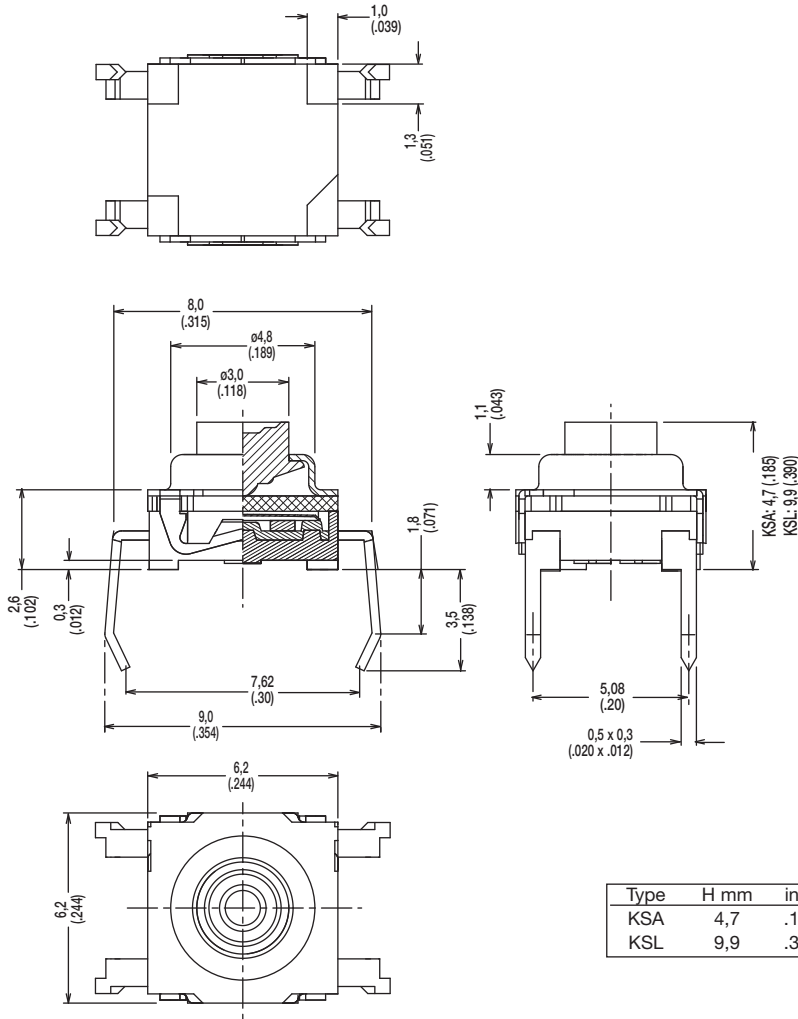
TYPE

**KSA & KSL** MANUAL (BULK PACKAGING) DRAWING SHOWN

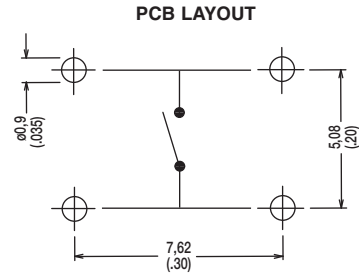


**B**

**Tactile Switches**



**KSA0M112**



Type	H mm	inch
KSA	4,7	.185
KSL	9,9	.390



First Angle  
Projection



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

[www.ck-components.com](http://www.ck-components.com)



# KSI Series Sealed Tact Switches



## Features/Benefits

- Long and soft actuator
- Distinctive tactile feel
- 1.1 & 3 N actuation force
- Ground terminal optional
- RoHS compliant and compatible

## Typical Applications

- Automotive
- Automation
- Door entry systems
- Remote controls

B

Tactile Switches

## Specification

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

## Mechanical

Type	Actuation force N (grams)	Operating life (operations)	Travel to make
KSI0M011	1.1 (110)	500,000	0,4 ± 0,15
KSI0M411	3.0 (300)	100,000	1,1 ± 0,2
KSI0V211	2.0 (200)	300,000	0,8 ± 0,2
KSI0V411	3.0 (400)	100,000	1,1 ± 0,2

Durometer for silicone actuator is 50 shore

## Packaging

Delivered in boxes of 500 pieces (M version) or 250 pieces (V version).

**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
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA
DIELECTRIC STRENGTH (50 Hz, 1 min.): 300 Vrms		
CONTACT RESISTANCE: < 50 mΩ		
INSULATION RESISTANCE (100V): > 10 <sup>11</sup> Ω		
BOUNCE TIME: < 1 ms		

## Environmental

	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 90°C	-40°C to 125°C
STORAGE TEMPERATURE:	-40°C to 90°C	-55°C to 125°C

## Process

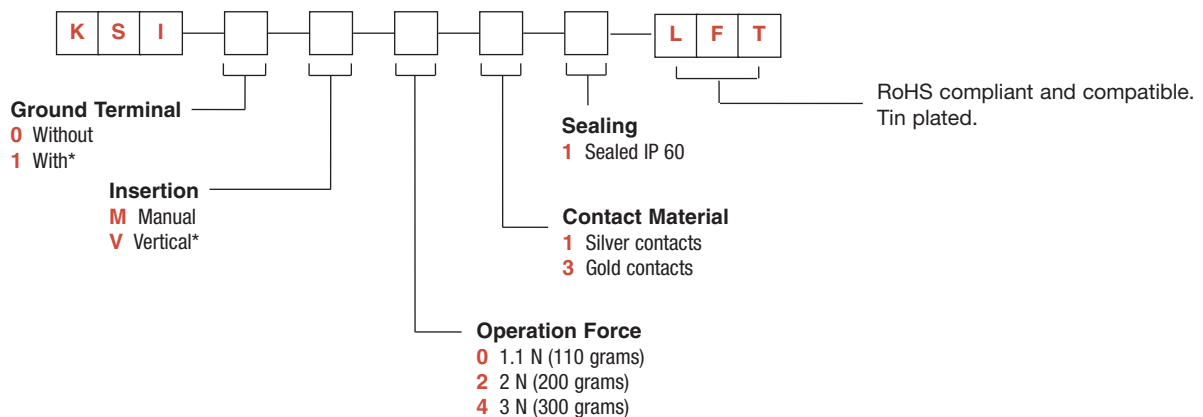
Wave soldering, compatible with lead free soldering profile.

## 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 in the table above, please consult your local representative.**



\*Note: "1" Ground terminal not compatible with "V" insertion

# KSI Series Sealed Tact Switches

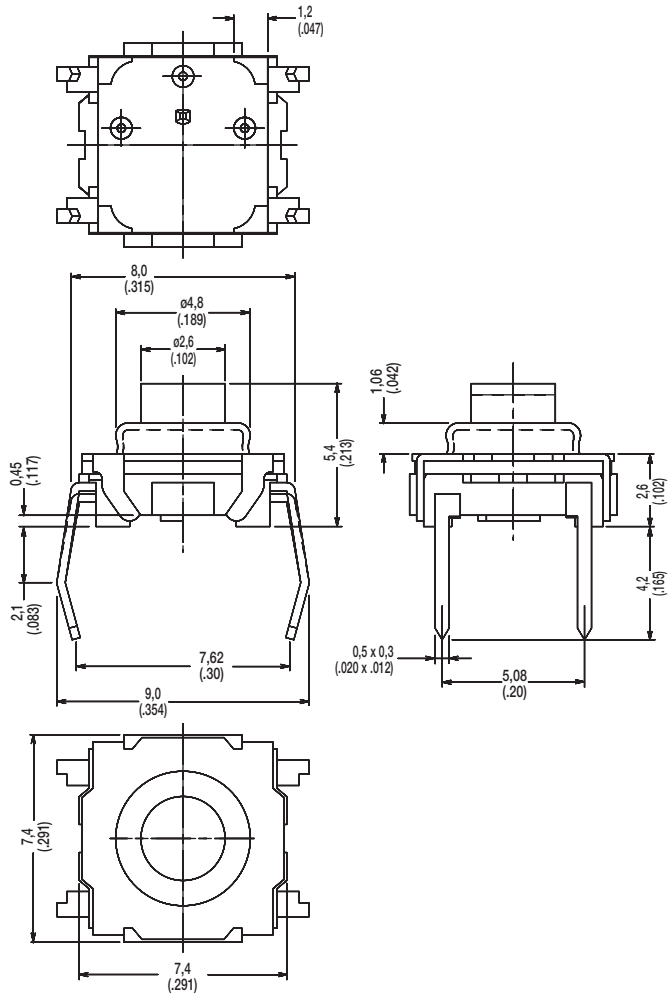
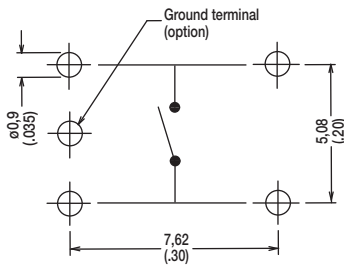
**KSI**

**M** MANUAL

Tactile Switches



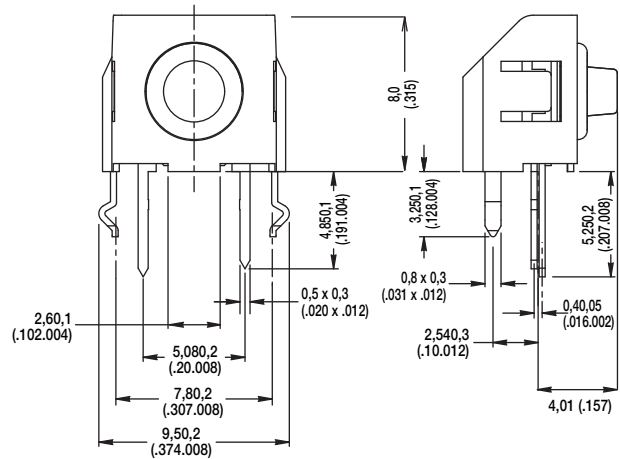
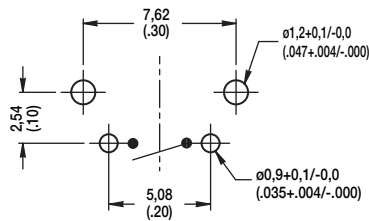
**PCB LAYOUT**



**V** VERTICAL



**PCB LAYOUT**



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

[www.ck-components.com](http://www.ck-components.com)

# KSJ Series Spherical Actuator Tact Switches

## Features/Benefits

- Spherical actuator allows actuation force off center  $\pm 30^\circ$  with regard to vertical
- Total travel 1.2 mm
- Sealed against flux
- RoHS compliant and compatible

## Typical Applications

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



Tactile Switches

## Specification

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

## Environmental

	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 90°C	-40°C to 125°C
STORAGE TEMPERATURE:	-40°C to 90°C	-55°C to 125°C

## Packaging

Delivered in boxes of 500 pieces.

## Mechanical

Type	Actuation force N (grams)	Operating life (operations) axial	Operating life (operations) radial	Travel to make
KSJ0M21160SH	1,5 - 2,5	100,000	30,000	0,7 $\pm$ 0,25
KSJ0M41180SH	2,25 - 3,75	100,000	30,000	0,55 $\pm$ 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	50 mA
MINIMUM CURRENT:	1 mA	1 mA
DIELECTRIC STRENGTH (50 Hz, 1 min.): $\geq 300$ Vrms		
CONTACT RESISTANCE: $\leq 100$ mOhms		
INSULATION RESISTANCE (100V): $> 10^9$ ohms		
BOUNCE TIME: $< 1$ 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.

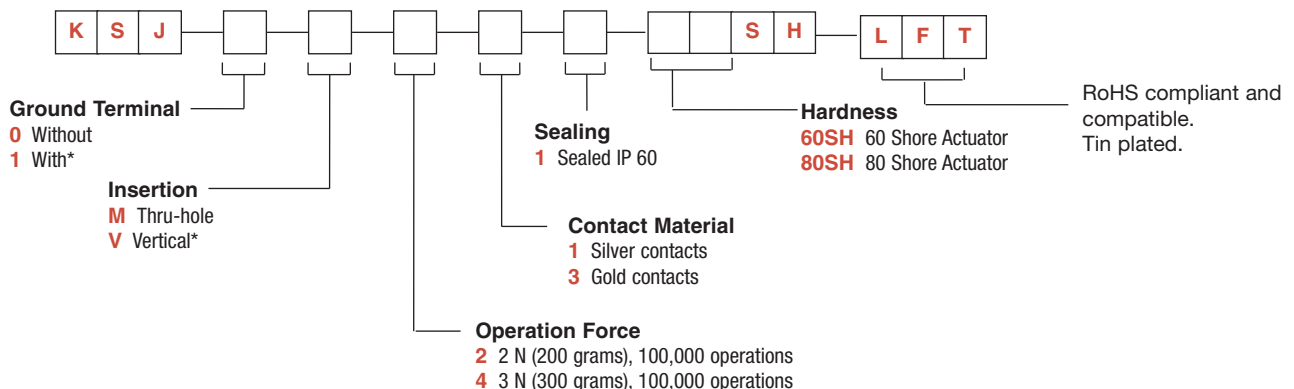
\* Please contact your C&K representative for any question regarding the product integration.

## 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.**

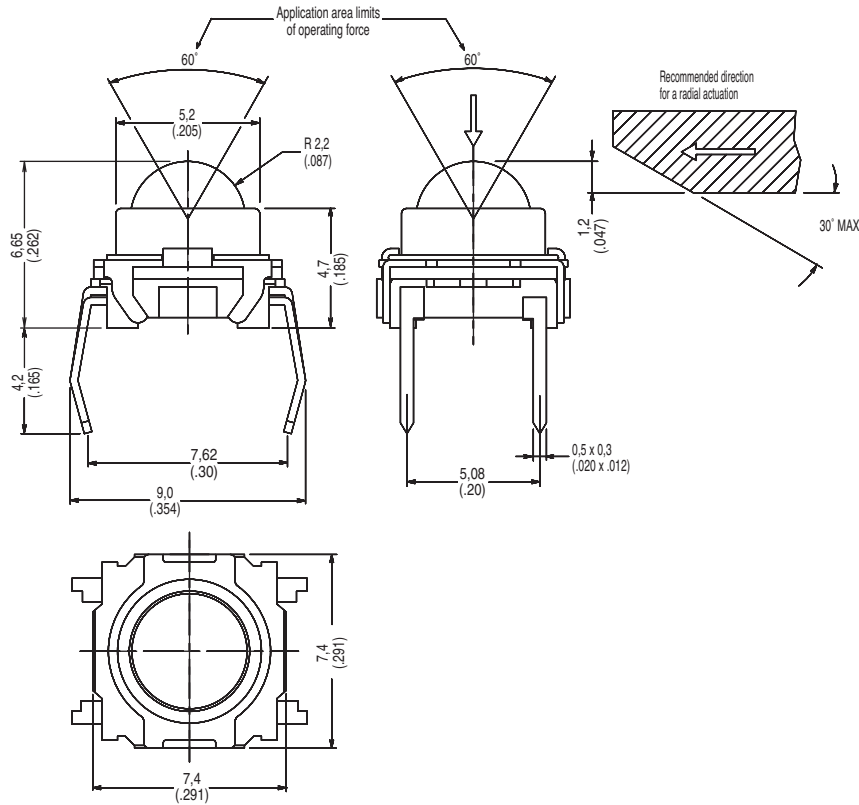


\*Note: "1" ground terminal option not available with "V" version. The bracket for the "V" version plays this role.



# KSJ Series Spherical Actuator Tact Switches

KSJ

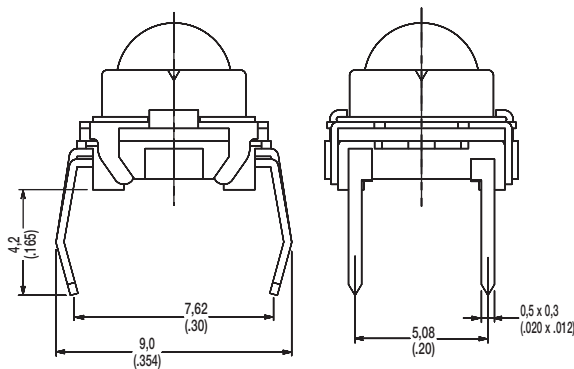


KSJ0M211

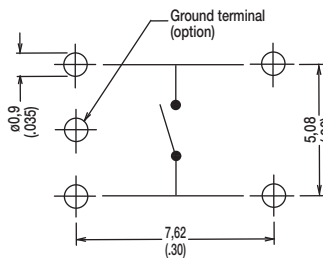
Tactile Switches

## INSERTION

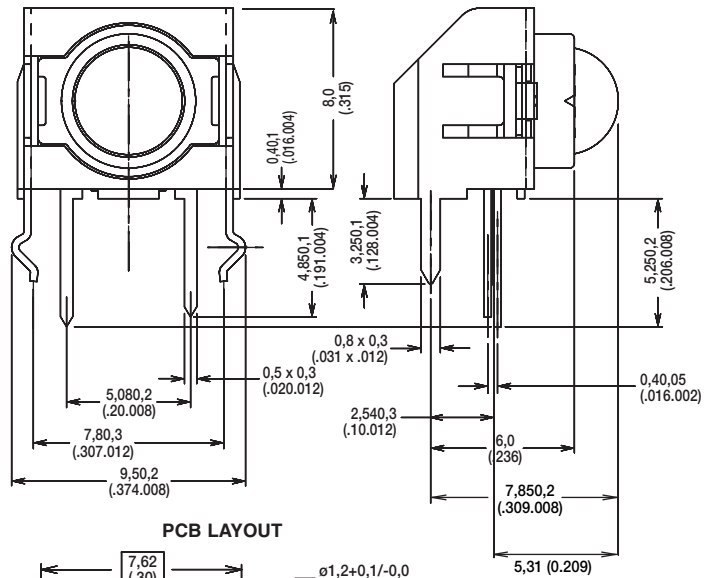
**M** THRU-HOLE



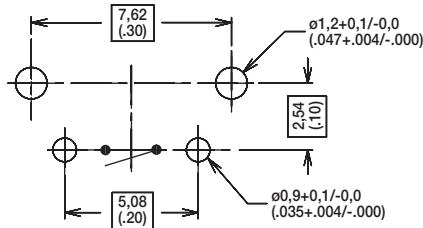
PCB LAYOUT



**V** VERTICAL



PCB LAYOUT



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# PTS635 Series 3,5 mm Tact Switches



## Features/Benefits

- Compact size 6 x 3.5 mm
- Variety of switch heights
- Choice of actuation force
- RoHS compliant and compatible

## Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial



Tactile Switches

## Specification

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

## Mechanical

ACTUATION FORCE: PTS635L models: 130 grams.  
PTS635H models: 200 grams.  
LIFE EXPECTANCY: 20,000 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 60°C

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

## 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.

## Materials

BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0).  
ACTUATOR: 6/6 nylon or polyacetal (UL 94HB).  
COVER PLATE: PTS635S and PTS635V models: Tin plated stainless steel  
DOME CONTACTS: Phosphor bronze, silver clad.  
STATIONARY CONTACTS: Brass, silver plated.  
TERMINALS: Brass, silver plated. Insert molded.

## Packaging

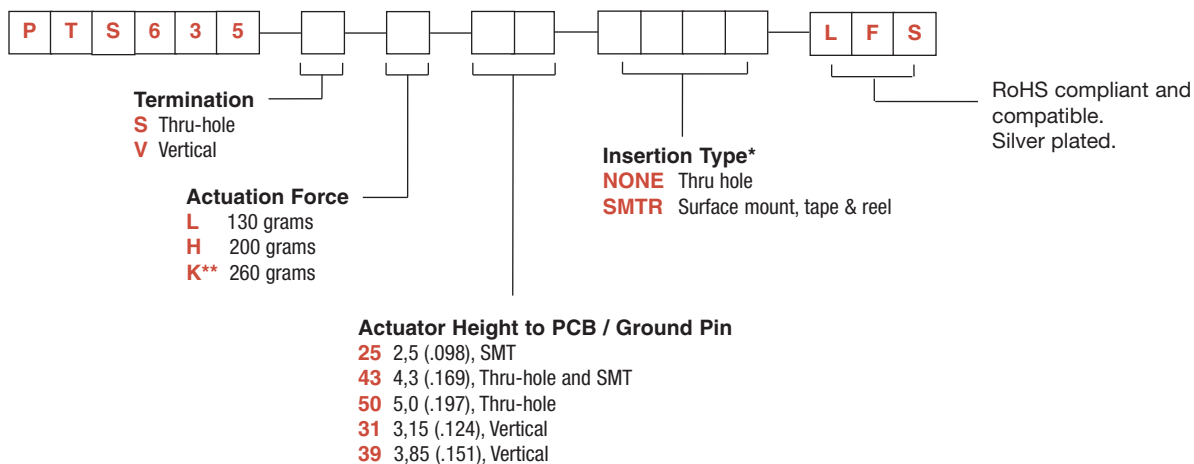
Bulk packaging.

### Tape & reel for:

PTS635Sx43SMTR, 1700 pcs per reel  
PTS635Sx25SMTR, 3000 pcs 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.



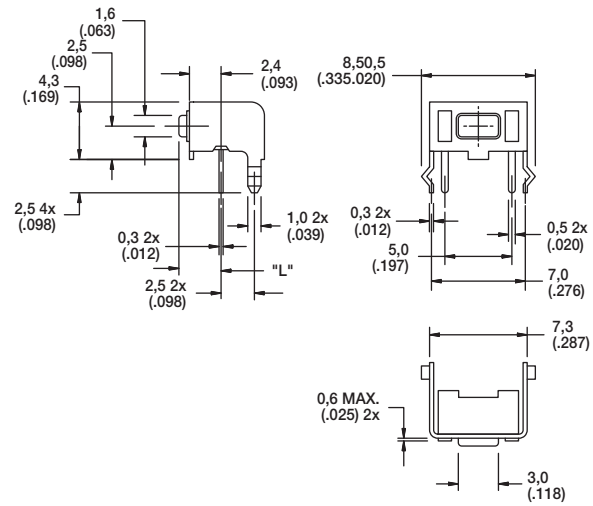
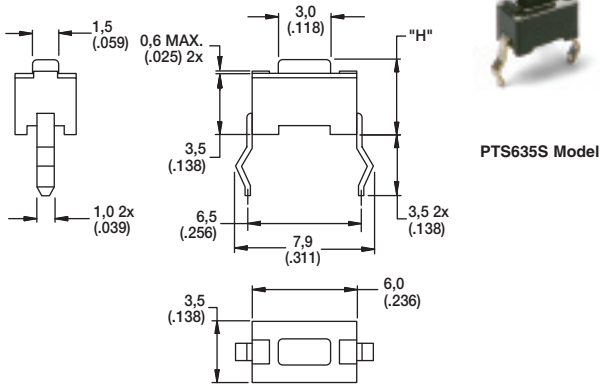
\* SM and SMTR only available with PTS635 43 and 25 actuator options.

\*\* Only for the PTS635Sx25SMTR.

# PTS635 Series 3,5 mm Tact Switches

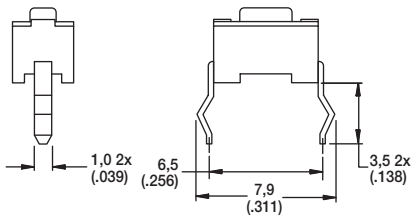
SERIES

## PTS635

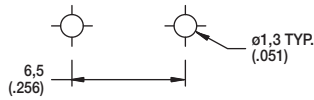


TERMINATION

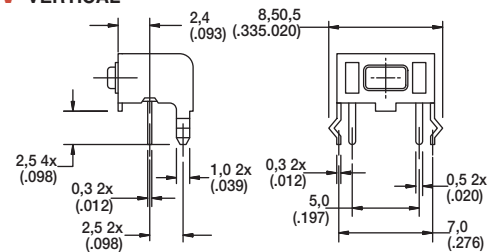
## S THRU-HOLE



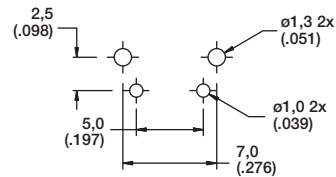
PCB LAYOUT



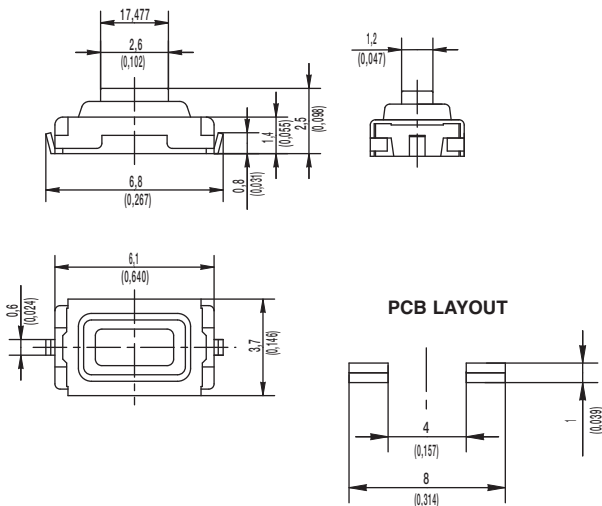
## V VERTICAL



PCB LAYOUT

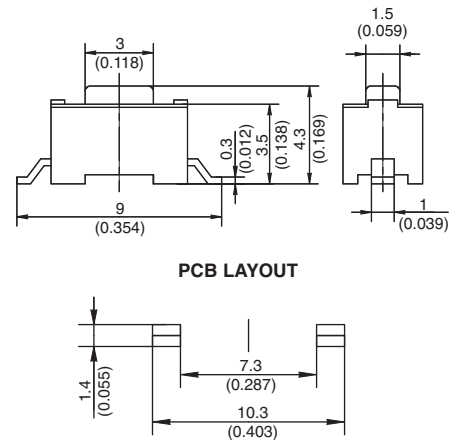


## SMT 25



PCB LAYOUT

## SMT 43



PCB LAYOUT



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

## ACTUATION FORCE



OPTION CODE	FORCE
<b>L</b>	130 grams
<b>H</b>	200 grams

## ACTUATOR HEIGHT

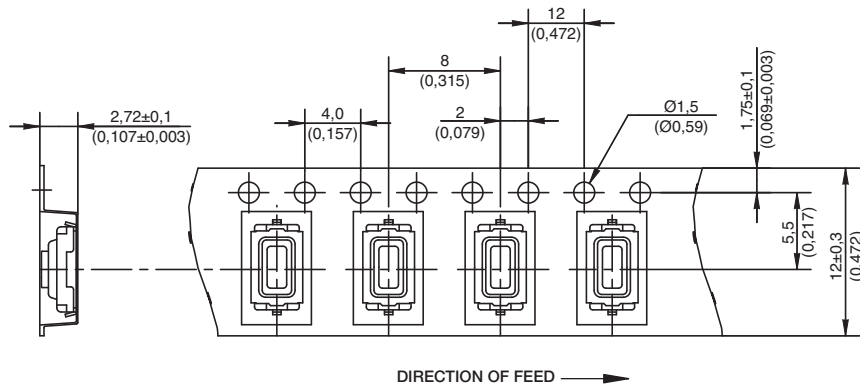


OPTION CODE	HEIGHT "H" or LENGTH "L"	TERMINATION	SCHEMATIC
<b>43</b>	4,3 (.169)	Thru-hole	1 — 2
<b>50</b>	5,0 (.197)	Thru-hole	
<b>31</b>	3,15 (.124)	Vertical	1 — 2 3 — 4
<b>39</b>	3,85 (.151)	Vertical	

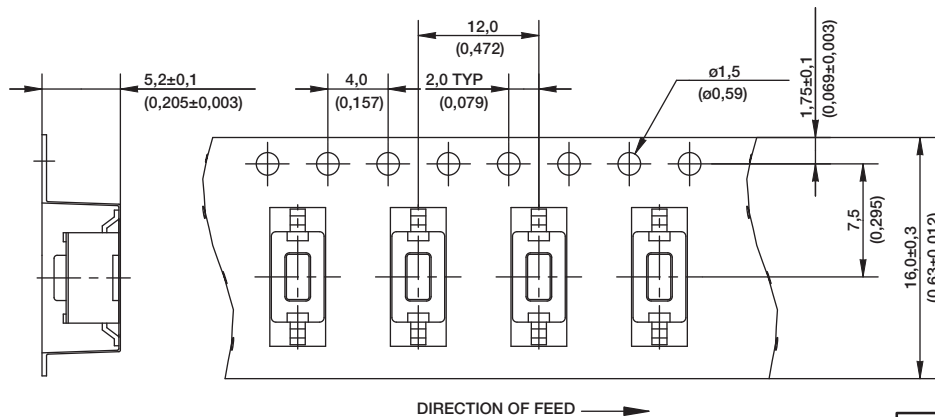
## INSERTION TYPE



### SMT 25



### SMT 43



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

# 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

ACTUATION FORCE: PTS645 models: 130 grams, 160 grams, 200 grams, 260 grams  
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: -20°C to 60°C

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

### 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.

### Materials

BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0).  
ACTUATOR: 6/6 nylon or polyacetal (UL 94HB).  
COVER PLATE: PTS645S: Polyester or stainless steel.  
PTS645T and PTS645V: Tin alloy or stainless steel.  
DOME CONTACTS: Phosphor bronze, silver clad.  
STATIONARY CONTACTS: Brass, silver plated.  
TERMINALS: Brass, silver plated. Insert molded.

### Packaging

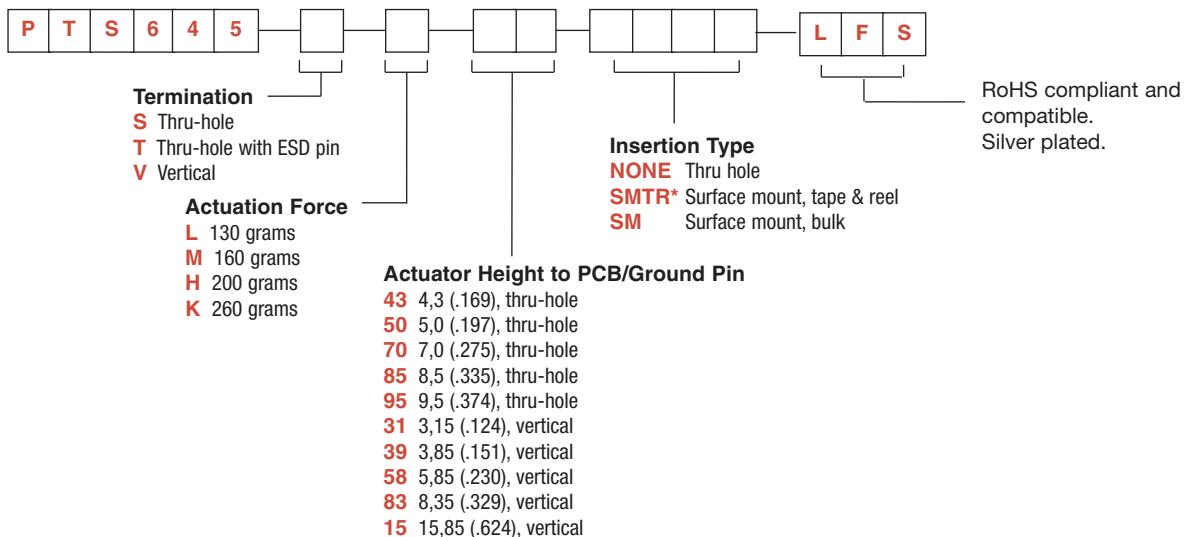
Bulk packaging.

#### Tape & reel for the SMT type:

Reel of 1000 pcs for the PST645sx43 & 50  
Reel of 750pcs for the PTS645Sx70  
Reel of 500 pcs for the PTS645Sx95

### 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.



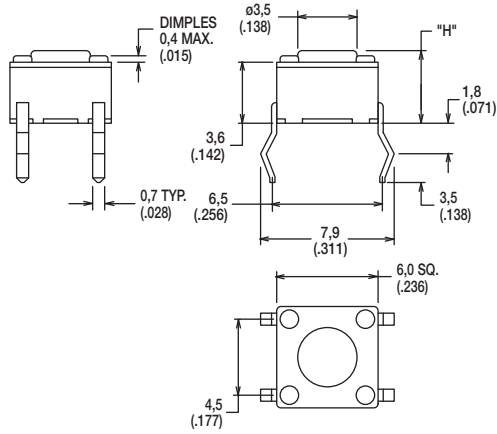
\*Only the PTS645 in horizontal type without ESD pin is available in SMT type.



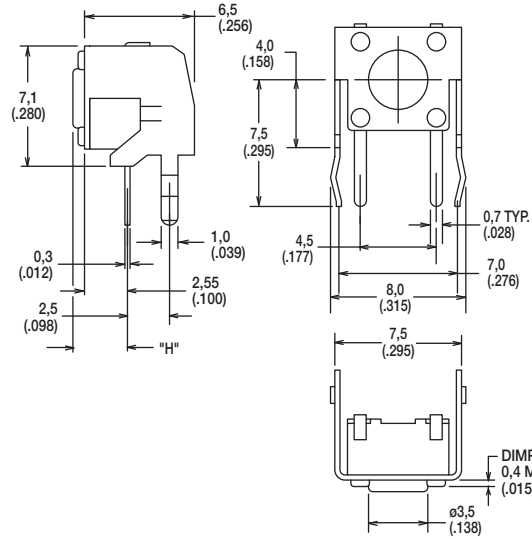
# PTS645 Series 6 mm Tact Switches

SERIES

## PTS645



PTS645S Model



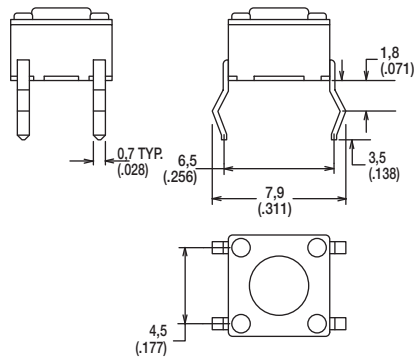
PTS645V Model

B

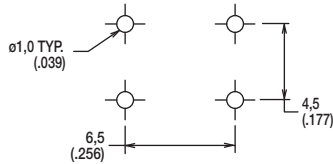
Tactile Switches

TERMINATION

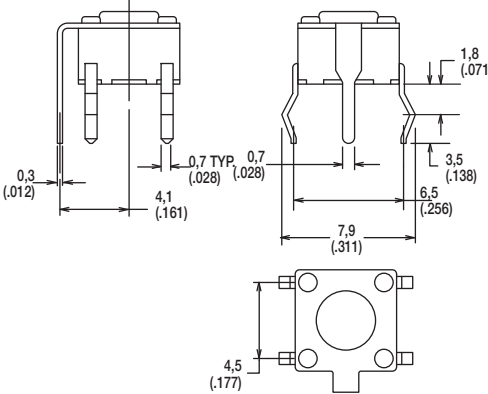
## S STRAIGHT



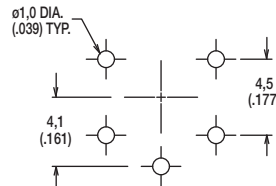
### PCB LAYOUT



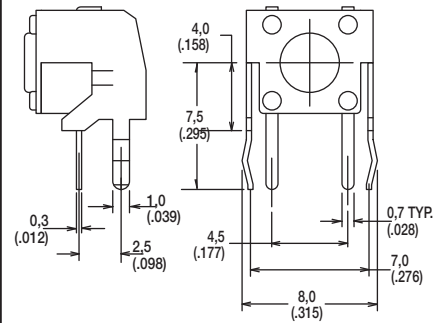
## T STRAIGHT WITH EMC PIN



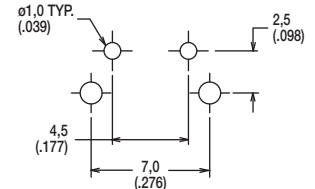
### PCB LAYOUT



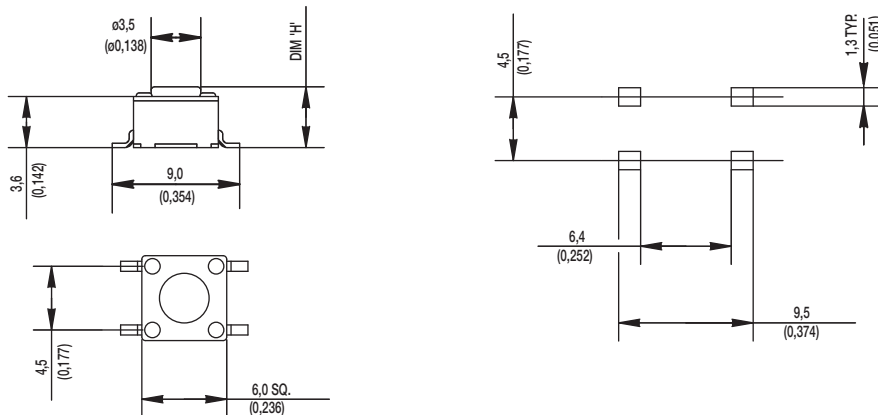
## V VERTICAL



### PCB LAYOUT



## SMT



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com

# PTS645 Series 6 mm Tact Switches

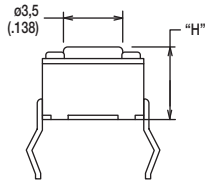
## ACTUATION FORCE

OPTION CODE	FORCE
<b>L</b>	130 grams
<b>M</b>	160 grams
<b>H</b>	200 grams
<b>K</b>	260 grams

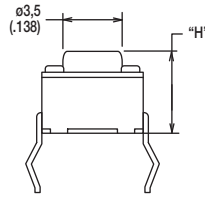
## ACTUATOR HEIGHT

OPTION CODE	HEIGHT "H" or LENGTH "L"	TERMINATION	SCHEMATIC	
			Without EMC pin	With EMC pin
<b>43</b>	4,3 (.169)	Thru-hole		
<b>50</b>	5,0 (.197)	Thru-hole		
<b>70</b>	7,0 (.275)	Thru-hole		
<b>95</b>	9,5 (.374)	Thru-hole		
<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		
<b>15</b>	15,85 (.624)	Vertical		

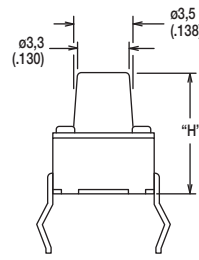
**43**



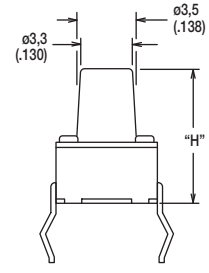
**50**



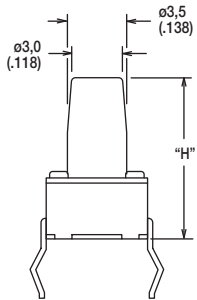
**70**



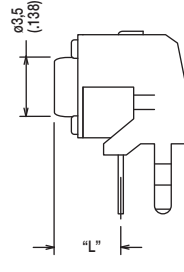
**85**



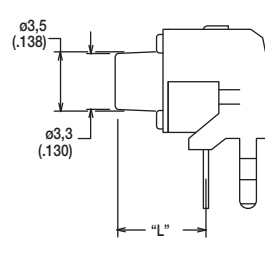
**95**



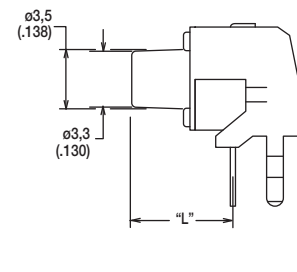
**31**



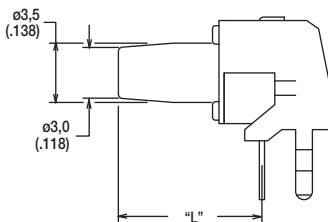
**39**



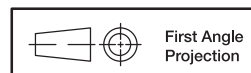
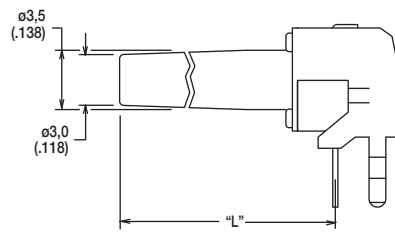
**58**



**83**



**15**



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change

www.ck-components.com



# PTS125 Series 12 mm Tact Switches



## Features/Benefits

- Stable control feeling
- Thru-hole or vertical actuation
- 160 or 260 grams actuation force
- RoHS compliant and compatible

## Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial

B

Tactile Switches

## Specification

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

## Mechanical

ACTUATION FORCE: PTS125M models: 160 grams.  
PTS125 K models: 260 grams.  
LIFE EXPECTANCY: 200,000 operations, M option;  
100,000 operations, K option.

## Electrical

CONTACT RATING: 50 mA @ 12 V DC.0  
DIELECTRIC STRENGTH: 250 V AC min.  
CONTACT RESISTANCE: 100 mΩ max. initial.  
INSULATION RESISTANCE: 10<sup>11</sup> Ω min.

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

## Environmental

OPERATING TEMPERATURE: -40°C to 60°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.

## Materials

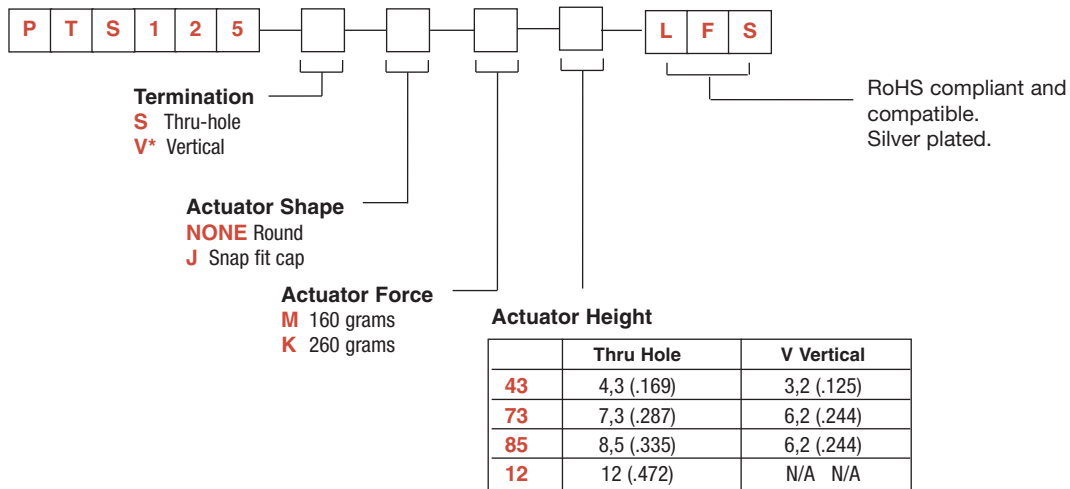
BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0).  
ACTUATOR: PBT (UL94V0) or polyacetal (UL 94HB).  
COVER PLATE: Tin alloy.  
DOME CONTACTS: Phosphor bronze, silver clad.  
STATIONARY CONTACTS: Brass, silver plated.  
TERMINALS: Brass, silver plated. Insert molded.

## Packaging

Tube packaging.

## 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.



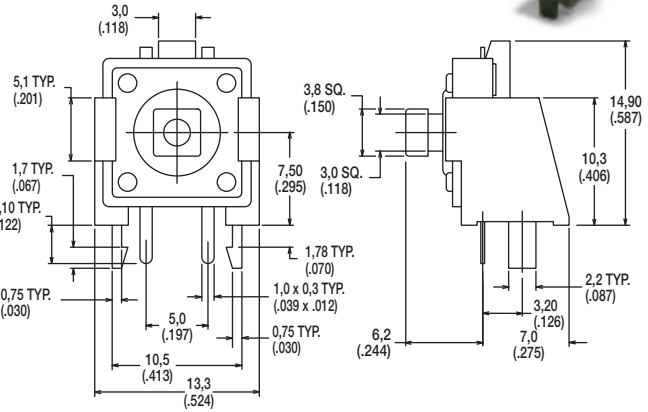
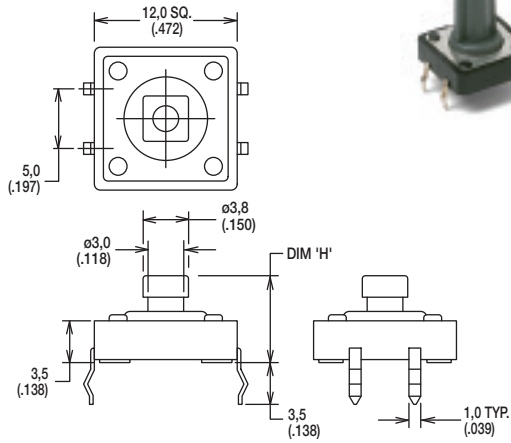
\* V option available with J73 actuator only.

# PTS125 Series 12 mm Tact Switches

SERIES

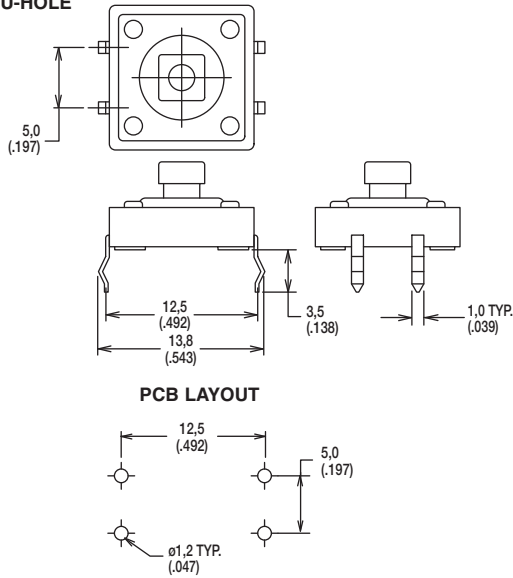
Tactile Switches

B

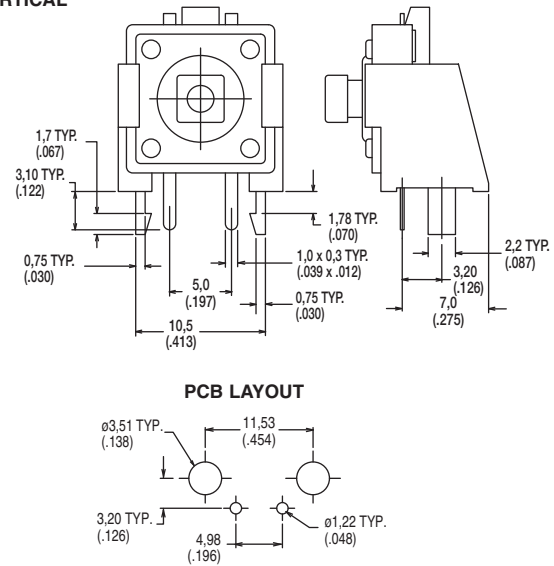


TERMINATION

## S THRU-HOLE



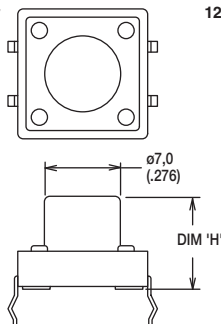
## V VERTICAL



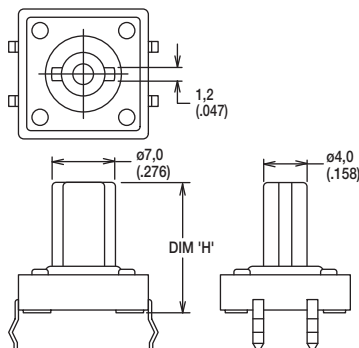
ACTUATOR SHAPE

## NONE ROUND

43 and 85 heights only

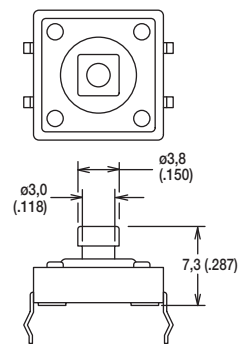


12 height only



## J SNAP-FIT CAP

73 height only



Dimensions shown in: mm (inch)  
Specifications and dimensions subject to change



# PTS125 Series 12 mm Tact Switches

## ACTUATION FORCE



OPTION CODE	FORCE
<b>M</b>	160 grams
<b>K</b>	260 grams



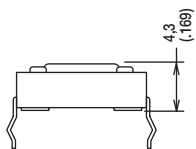
**B**

Tactile Switches

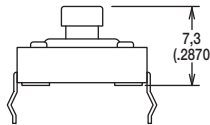
## ACTUATOR HEIGHT



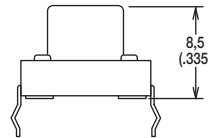
**43** 4,3 mm



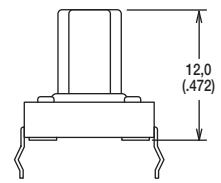
**73** 7,3 mm SNAP-FIT



**85** 8,5 mm



**12** 12 mm



# ED & EDM Dome Series



## Features

- Short travel
- Good tactile feedback
- Self cleaning
- 3 actuation forces
- RoHS

## Typical Applications

- Aircraft
- Instrument
- Panels
- Radio equipment

### Specification

ED: Disc element  
 EDM: Disc element and double dome  
 FUNCTION: Momentary action  
 CONTACT TYPE: Normally open - SPST  
 TERMINALS: Through hole PCB terminations  
 LIFE EXPECTANCY: 1,000,000

### Electrical

	Silver	Gold
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	100 VDC	100 VDC
MINIMUM VOLTAGE:	20m VDC	20m VDC
MIN/MAX CURRENT:	1.0 mA - 100 mA	50µA - 50 mA
DIELECTRIC STRENGTH:	≥ 250 Vrms	
CONTACT RESISTANCE:	≤ 100 mΩ	
INSULATION RESISTANCE:	Initial measurement: ≥ 1 GΩ	
(between terminals)	After damp heat: ≥ 10 MΩ	
BOUNCE TIME:	≤ 3 ms	

### Packaging

Trays 50 pieces.

### Mechanical

### Environmental

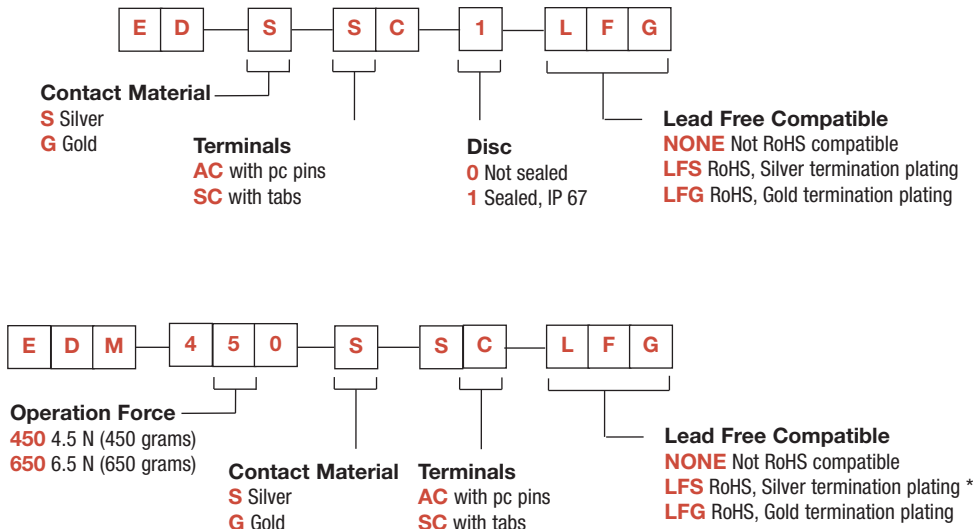
	Silver	Gold
OPERATING TEMPERATURE:	-25°C to 70°C	-55°C to 85°C

Type	Operating force Newtons (grams)	Tactile Feeling (Δ%)	Return Force N	Travel (mm)
EDSAC LFS	2.4 (240) ± 25%	≥ 25%	≥ 0.4 N	0.3mm ± 0.15
EDSSC LFS	2.4 (240) ± 25%	≥ 30%	≥ 0.4 N	0.3mm ± 0.15
EDM450SAC LFS	4.5 (450) ± 25%	≥ 25%	≥ 1.0 N	0.5mm ± 0.25
EDM650SSC LFS	6.5 (650) ± 25%	≥ 25%	≥ 1.6 N	0.6mm ± 0.25

SIMULTANEITY: ≤ 0.05 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.

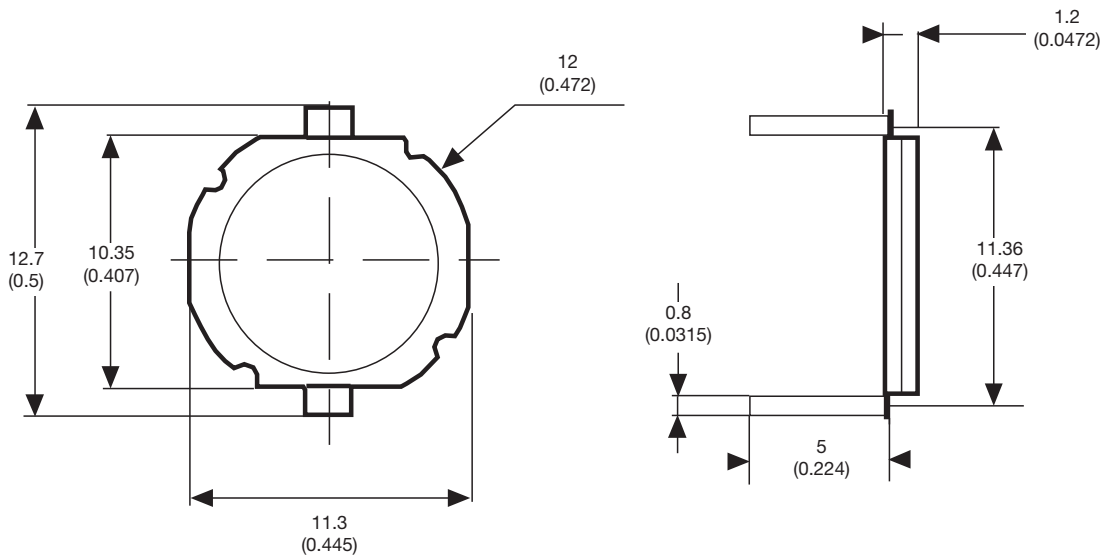


\* If AC terminal option is selected please choose LFS suffix for part number



**B**

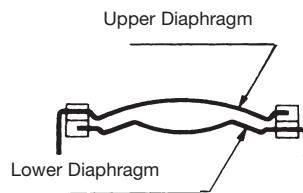
**Tactile Switches**



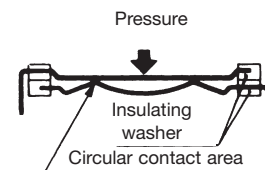
### Switch Action Principal

The disc contact is essentially made of two separate conductive dome diaphragms separated by an insulated material.

The upper diaphragm is shaped so that under pressure it collapses suddenly and establishes contact with the lower diaphragm.



Switch in resting position



Switch in active position

# MD & MDP Series

## Features

## Typical Applications



- **Short travel**
- **Good tactile feedback**
- **Self cleaning**
- **2 actuator materials**
- **RoHS**

- **Aircraft**
- **Instrument**
- **Panels**
- **Radio equipment**

### Specification

MD: Rubber actuator  
 MDP: Hard actuator for button option  
 FUNCTION: Momentary action  
 CONTACT TYPE: Normally open - SPST  
 TERMINALS: Through hole PCB terminations

### Electrical

	Silver	Gold
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	100 VDC	100 VDC
MINIMUM VOLTAGE:	20m VDC	20m VDC
MIN/MAX CURRENT:	1.0 mA - 100 mA	50µA - 50 mA
DIELECTRIC STRENGTH:	≥ 250 Vrms	
CONTACT RESISTANCE:	≤ 100 mΩ	
INSULATION RESISTANCE:	Initial measurement: ≥ 1 GΩ	
(between terminals)	After damp heat: ≥ 10 MΩ	
BOUNCE TIME:	≤ 3 ms	

### Mechanical

### Environmental

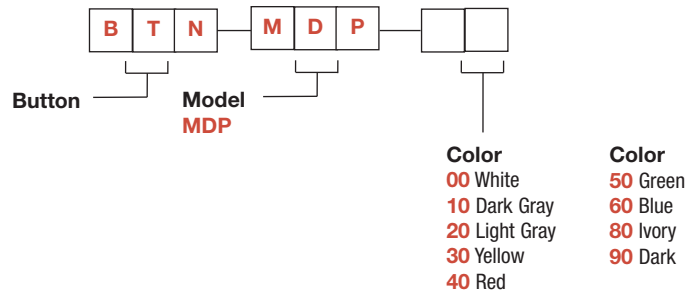
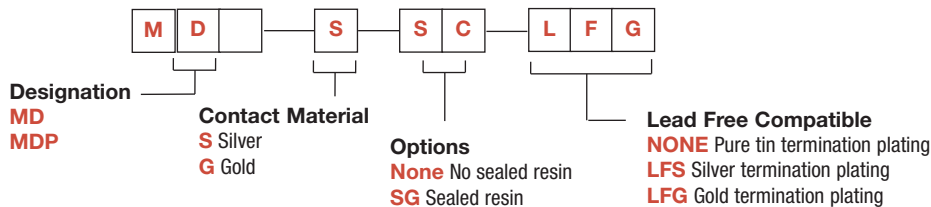
	Silver	Gold
OPERATING TEMPERATURE:	-25°C to 70°C	-55°C to 85°C

Type	Operating force Newtons (grams)	Tactile Feeling (Δ%)	Operating Life	Travel (mm)
MDS LFS	2.4 (240) ± 25%	≥ 20%	≥ 10 <sup>6</sup>	0.95mm ± 0.35
MDS LFG	2.4 (240) ± 25%	≥ 20%	≥ 10 <sup>6</sup>	0.95mm ± 0.35
MDPS LFS	2.6 (260) ± 25%	≥ 25%	≥ 2 x 10 <sup>5</sup>	0.4mm ± 0.25
MDPG LFS	2.6 (260) ± 25%	≥ 25%	≥ 2 x 10 <sup>5</sup>	0.4mm ± 0.25

SIMULTANEITY: ≤ 0.05 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.



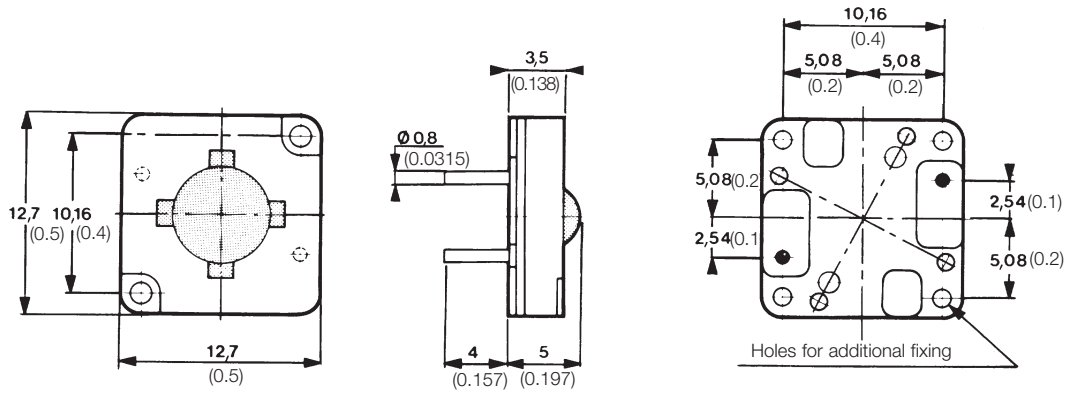




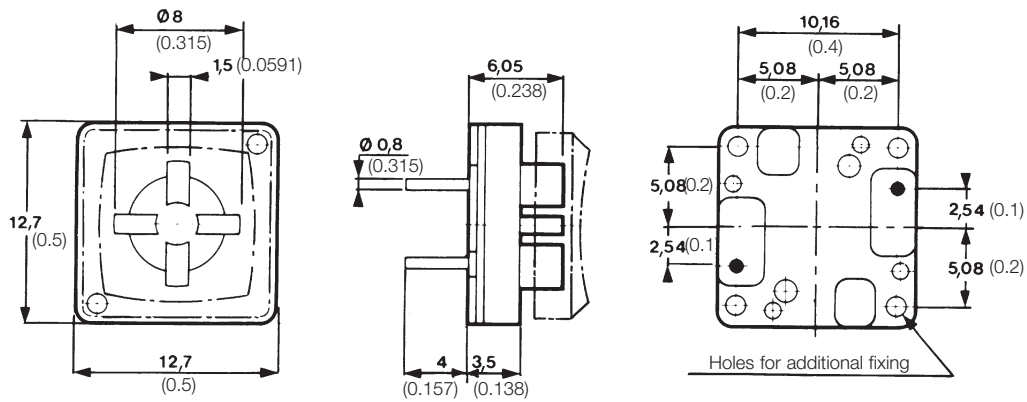
**B**

Tactile Switches

## MD



## MDP



## MDP Button

