

Tactile Switches

Product Selection Guide

Tactile Switches

B

Surface Mount							
Series	KXT	KMT2	KMT0	KMR 2-8	KMS	PTS525	PTS530
Size on PCB L x W (mm)	2 x 3	3 x 2,6	3 x 2,6	4,2 x 2,8	4,2 x 3,55	5,2 x 5,2	4,5 x 4,5
Total Height (mm)	0,58	0,65	0,65	1,9 2,5	1,42	0,8 and 1,5	0,55 and 0,65
Travel (mm)	0,13	0,15	0,15	0,2 to 0,35	0,25 to 0,3	0,3	0,2
Actuation Force (N)	100 gf 180gf 240 gf	1,0 1,6	1,0; 1,6 2,3; 3,4	1,2; 2,0 3,0; 4,0	2,0 3,0	1,6 2,6	1,0; 1,6; 2,0; 2,6; 4,0; 6,0
Contact Type	Silver	Silver	Silver	Silver / Gold	Silver / Gold	Silver	Silver
Max. Voltage (V)	12	32	32	32	32	32	12
Max. Switching Power (VA)	0,5	0,5	0,5	1 / 0,2	1 / 0,2	1	-
Life Cycles	300,000	150,000	300,000/600,000 1,000,000	100,000 300,000	100,000	100,000	150,000 to 1,000,000
IP Rating	IP64	IP54	IP68	IP40	IP40	IP40	-
Page Number	B-5	B-9	B-11	B-13	B-23	B-25	B-29
Surface Mount							
Series	PTS540	PTS810	PTS820	PTS840	KSR	KSS	KSC4V2
Size on PCB L x W (mm)	3,7 x 3,7	4,2 x 3,2	3,9 x 2,9	3,5 x 3,55	7,15 x 3,8 7,3 x 3,8	5,5 x 4,4	2 holes ø 1,1 2 pads 1,5 x 0,8
Total Height (mm)	0,55 / 0,65	2,5	1,5/2,0/2,5	1,35	2,5	1,7	5,0*
Travel (mm)	0,15	0,15/0,2	0,2	0,2	0,3 to 0,5	0,3	0,7*
Actuation Force (N)	160 gf 230 gf	1,6; 2,6; 4,0; 6,0	1,6 2,5	1,6 2,2	1,2; 2,0; 3,0; 4,5	2 2,5 4	3,5*
Contact Type	Silver	Silver	Silver	Silver	Silver / Gold	Silver / Gold	Silver / Gold
Max. Voltage (V)	12	16	12	12	32	32	32
Max. Switching Power (VA)	-	-	-	-	1 / 0,2	1 / 0,2	1 / 0,2
Life Cycles	300,000 500,000	50,000 to 150,000	100,000 200,000	100,000	100,000 200,000	100,000	300,000
IP Rating	IP40	IP40	IP40	IP40	IP50	IP40	IP67
Page Number	B-31	B-33	B-35	B-42	B-45	B-49	B-63

* Other options available by request

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

Tactile Switches

Product Selection Guide

SMT, Thru-hole Sealed High Performance					
Series	KSC 1 - 10	KSE	KT	K5AT	K8
Footprint	J 6,8 x 6,2 G 10 x 6,2	6,8 x 6,2	SA 7,5x5 SA2 7,5x7	G 8,4 x 10,8	G 8,4 x 10,8
Total Height (mm)		3,1 / 4,3	6,6 7,11 with tab	6,1	6
Travel (mm)	0,20 to 0,75 *	0,3	0,3 to 0,5	0,5	0,45
Actuation Force (N)	1,1 to 5,5 *	1.5 2.25	3	4	2.5 4.0
Contact Type	Silver / Gold	Silver	Silver / Gold	Gold	Silver / Gold
Max. Voltage (V)	32	32	50	32	32
Max. Switching Power (VA)	1 / 0.2	1	1 / 0.2	1	1 / 0.2
Life Cycles	100,000 to 1,000,000	300,000	100,000	25,000	300,000
IP Rating	IP67	IP67		IP40	IP40
Page Number	B-51	B-65	B-68	B-73	B-75

Thru-hole							
Series	K5V	KSF/KSI	KSA	KSA MKII	KSA-V	KSL	KSL-V
Footprint	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 2,54	7,62 x 5,08	7,62 x 2,54
Total Height (mm)	9 / 13	2,6	4,7 button option	4,7	8	9,9	8
Travel (mm)	1,2	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5
Actuation Force (N)	4.0	1.3 3.0 1.6 5.0	1.3 3.0 5.0	1.3 3.0 5.0	1.3 3.0 5.0	1,3 3,0	1,3 3,0
Contact Type	Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold
Max. Voltage (V)	32	32	32	32	32	32	32
Max. Switching Power (VA)	1	1 / 0.2	1 / 0.2	1 / 0.2	1 / 0.2	1 / 0.2	1 / 0.2
Life Cycles	25,000	100,000	100,000	100,000 1,000,000	100,000	100,000	100,000
IP Rating	IP40	IP60	IP60	IP67	IP60	IP60	IP60
Page Number	B-78	B-82	B-84	B-89	B-84	B-84	B-84

* Other options available by request

Tactile Switches

Product Selection Guide

Tactile Switches

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Thru-hole						
Series	KSJ	KSJ-V	PTS635	PTS635-V	PTS641	PTS645
Footprint	7,62 x 5,08	7,62 x 2,54	6 x 3,5	7,0 x 2,5	6,3 x 6,4	6 x 6
Total Height (mm)	6,65	8	2,5 4,3 5,0	4,3	2,5 3,1 3,4	4,3; 5,0; 7,0; 9,5;
Travel (mm)	0,55 to 0,7	0,55 to 0,7	0,25	0,25	0,20 / 0,30	0,25
Actuation Force (N)	2,0 3,0	2,0 3,0	1,3 2,0 2,6	1,3 2,0	160 gf 250 gf 320 gf	1,3; 1,6 2,0; 2,6
Contact Type	Silver Gold	Silver Gold	Silver	Silver	Silver	Silver
Max. Voltage (V)	32	32	32	12	12	12
Life Cycles	100,000 30,000	100,000 30,000	20,000	20,000	100,000	100,000
IP Rating	IP60	IP60	IP40	IP40	IP40	IP40
Page Number	B-91	B-91	B-93	B-93	B-96	B-98

Thru-hole						
Series	PTS645-V	PTS125	ITS			
Footprint	7,0 x 2,5	12 x 12				
Total Height (mm)	7,1	4,3 7,3 Sq. 8,5 12,0	variety of sizes available			
Travel (mm)	0,25	0,30				
Actuation Force (N)	1,3; 1,6 2,0; 2,6	1,6 2,6	160 gf			
Contact Type	Silver	Silver	Silver			
Max. Voltage (V)	12	12	12			
Life Cycles	100,000	200,000	50,000			
IP Rating	IP40	IP40	IP40			
Page Number	B-103	B-105	B-109			

KXT Series

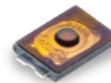
Ultra Low Profile Top Actuated

Features

- 3.0 x 2.0 mm footprint
- 0.58 mm thickness
- High number of cycle

Typical Applications

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



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: G type for SMT

TRAVEL: 0.13 mm ± 0.05 mm

Mechanical

	Operating force gf	Operating Life	Color
KXT 111 LHS	100 ± 30	300,000	White
KXT 121 LHS	180 ± 50	300,000	Black
KXT 131 LHS	240 ± 70	300,000	Black

Electrical

MAXIMUM VOLTAGE:	12 VDC
MAXIMUM CURRENT DC:	50 mA
DIELECTRIC STRENGTH:	100 V AC (1mn)
CONTACT RESISTANCE:	≤ 500 mΩ
INSULATION RESISTANCE:	≥ 100 MΩ
BOUNCE TIME:	≤ 10 ms

Environmental

OPERATING TEMPERATURE: -30°C to 85°C

STORAGE TEMPERATURE: -40°C to 90°C

Process

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

Packaging

In reels of 17,000 pieces

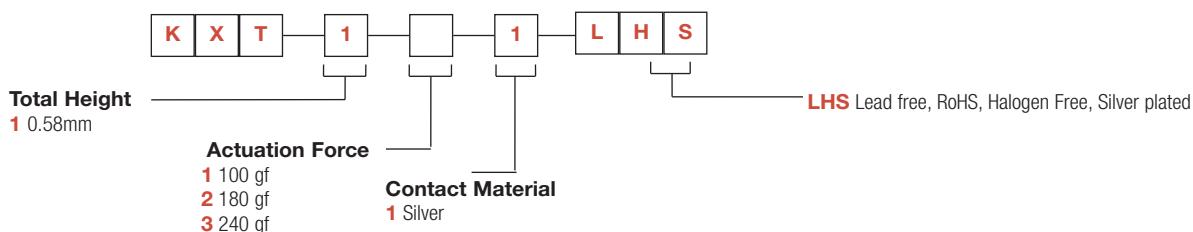
Dimensions of reels according to EIA 481B

External diameter 330 mm

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

Part Number Description

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

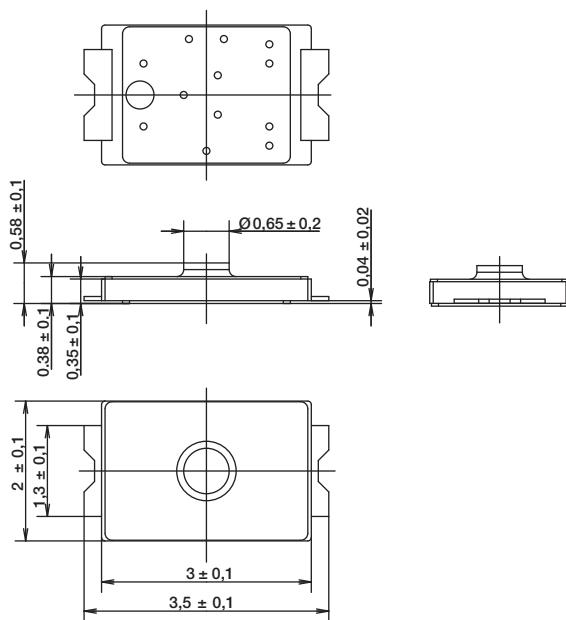


KXT Series

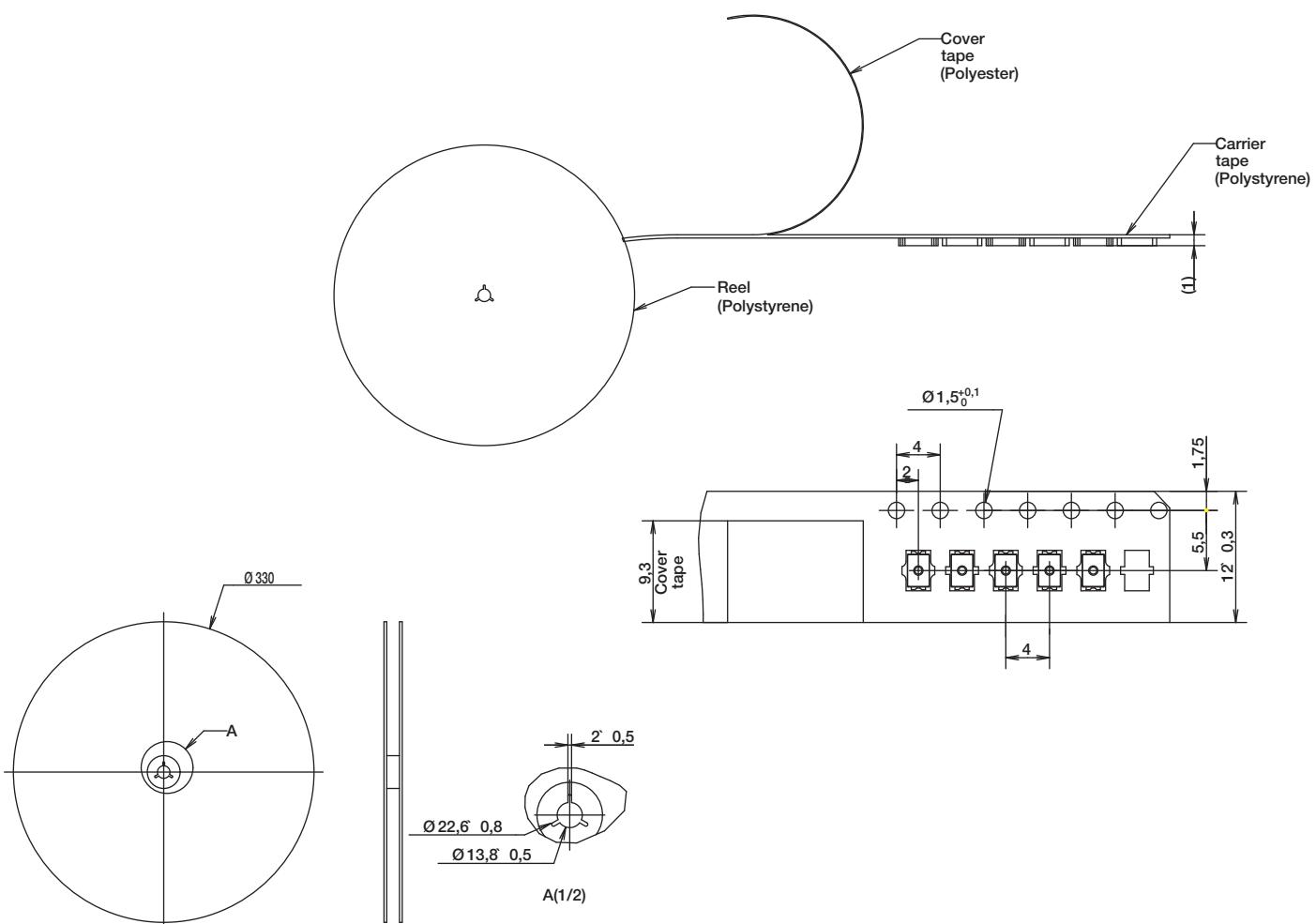
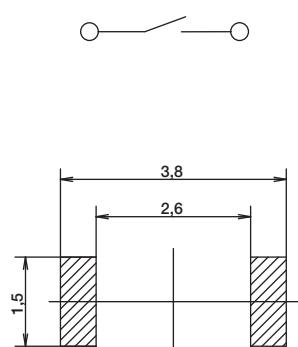
Ultra Low Profile Top Actuated

Tactile Switches

B



SCHEMATIC



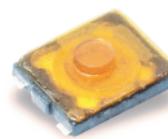
KXT2 Series Double Action Ultra Low Profile Top Actuated

Features

- 3.9 x 3.0 mm footprint
- 1.05 mm thickness
- Dual action

Typical Applications

- Wearable electronics
- Mobile Phones
- Portable Electronics



B

Tactile Switches

Specification

FUNCTION: momentary action
CONTACT ARRANGEMENT: Dual action = SPDT, N.O.
TERMINALS: G type for SMT
TRAVEL: 0.1 mm ± 0.05 mm
TRAVEL: 0.2 mm + 0.1 / - 0.05 mm

Mechanical

	Operating force gf	Operating Life
KXT 211 LHS	Push force 1 100 ± 40	100,000
	Push force 2 200 ± 50	

Electrical

MAXIMUM VOLTAGE: 12 VDC
MAXIMUM CURRENT DC: 50 mA
DIELECTRIC STRENGTH: 250 V (50 Hz, 1 min.)
CONTACT RESISTANCE: ≤ 500 mΩ
INSULATION RESISTANCE: 100 MΩ
BOUNCE TIME: ≤ 10 ms

Environmental

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

Process

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

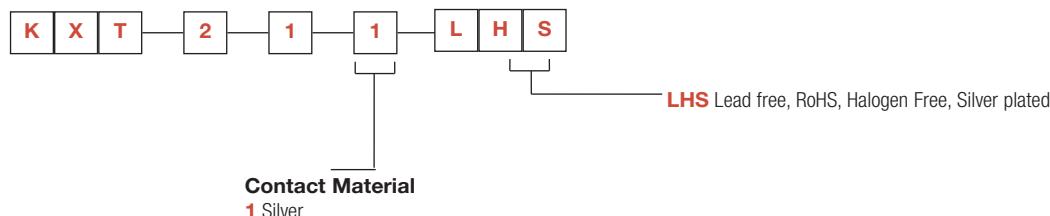
Packaging

In reels of 6,000 pieces
Dimensions of reels according to EIA RS481 or IEC 2863
External diameter 178 mm ± 2mm

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.

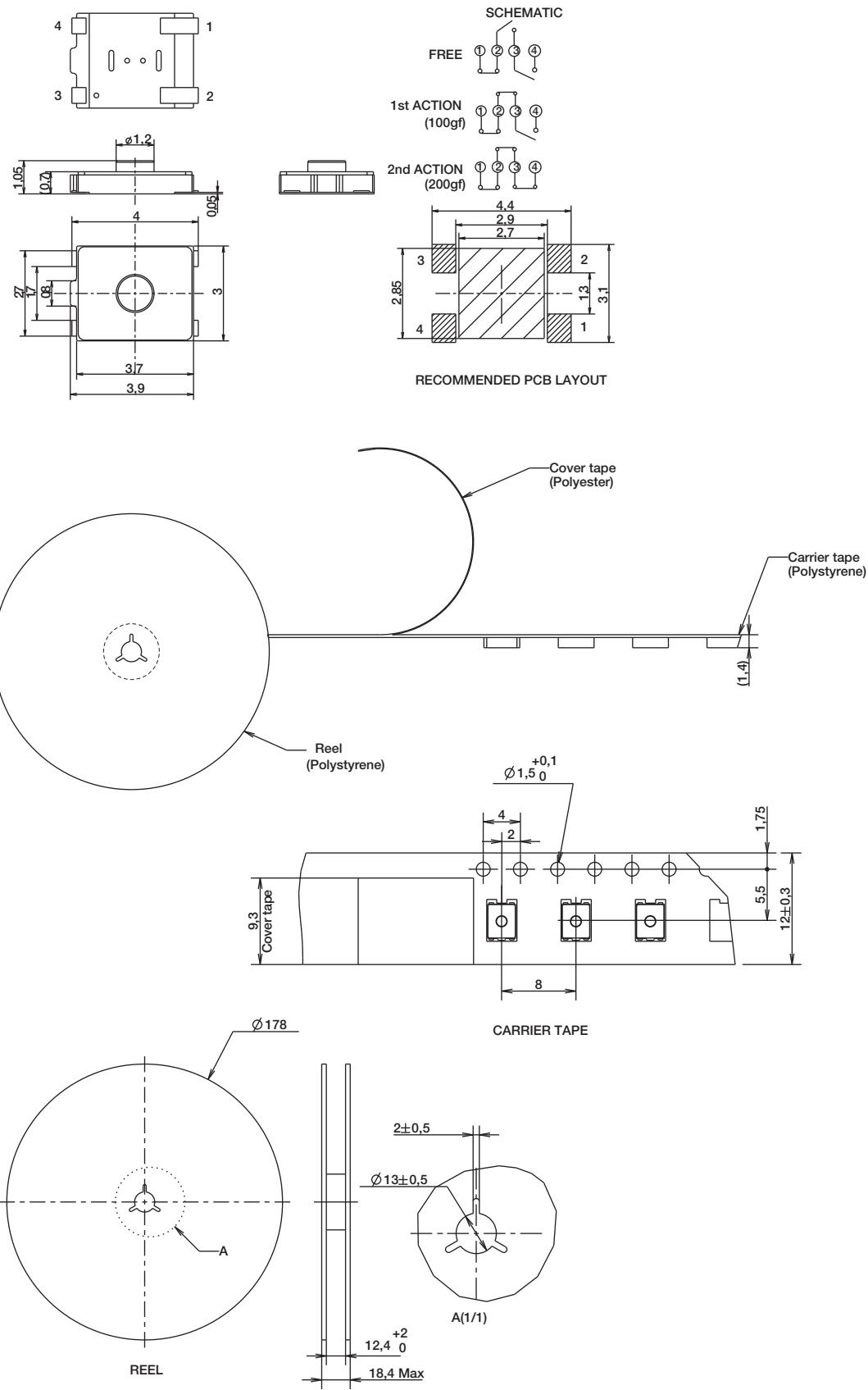


KXT2 Series

Double Action Ultra Low Profile Top Actuated

Tactile Switches

B



Dimensions are shown: mm

Specifications and dimensions subject to change

KMT2 Series

Nano-Miniature SMT Top Actuated

Features

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

Typical Applications

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



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: Gullwing type for SMT

Environmental

Silver

OPERATING TEMPERATURE: -40°C to 85°C

STORAGE TEMPERATURE: -55°C (10 days)

+85°C (4 days)

Mechanical

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

Electrical

Silver

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

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.

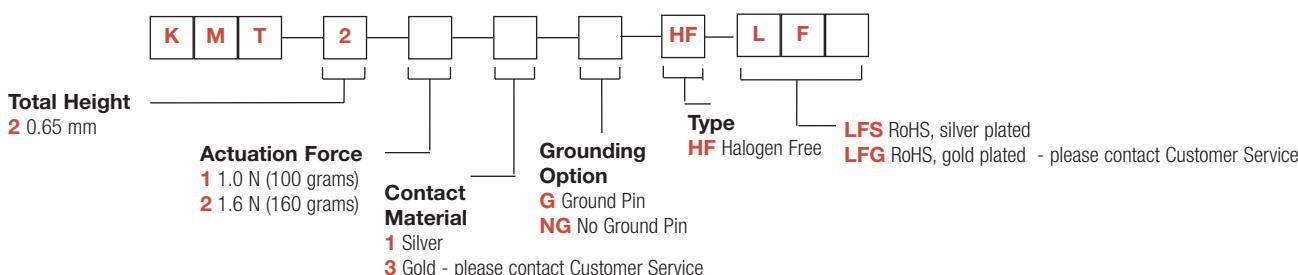
Dimensions of reels according to EIA 481B

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.

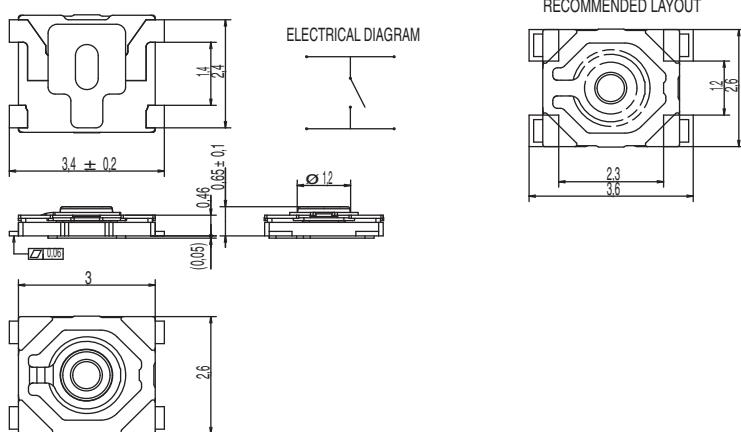


KMT2 Series

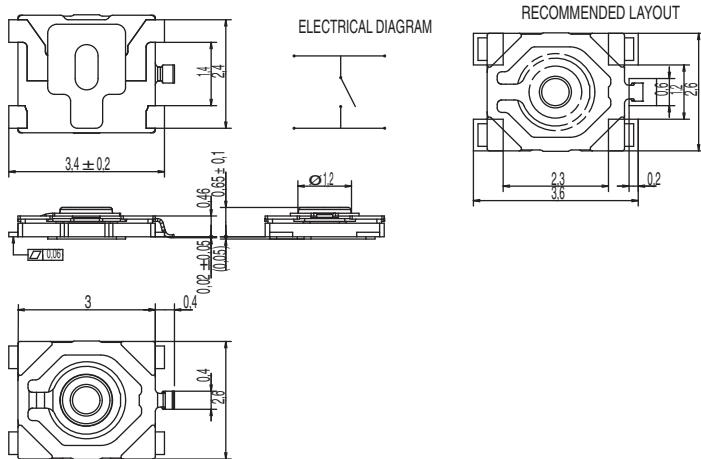
Nano-Miniature SMT Top Actuated

Tactile Switches

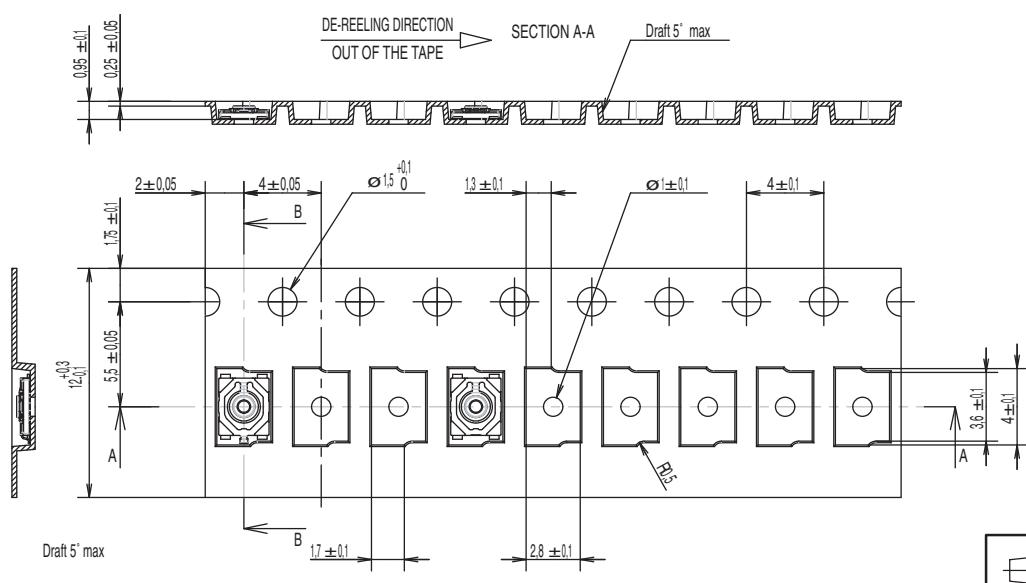
KMT Series – No Ground Pin



KMT Series – With Ground Pin



TAPE & REEL



First Angle Projection
 Dimensions are shown: mm
 Specifications and dimensions subject to change

KMT0 Series

Nano-Miniature SMT Top Actuated

Features

- **Smallest footprint**
- **Smallest thickness with integrated actuator**
- **Extended life cycles**
- **IP68**
- **Ultra low current capabilities**

Typical Applications

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



B

Tactile Switches

Specification

FUNCTION: momentary action, normally open

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

TERMINALS: J lead type for SMT

Mechanical

TRAVEL (mm): 0.15 ± 0.1

	Operating force Newtons (grams)	Tactile Feeling	Operating Life
KMT011NGJLHS	1.0 (100) $\pm 25\%$	$\geq 10\%$	300,000
KMT021NGJLHS	1.6 (160) $\pm 25\%$	$\geq 30\%$	300,000
KMT071NGJLHS	2.3 (230) $\pm 25\%$	$\geq 30\%$	300,000
KMT031NGJLHS	3.4 (340) $\pm 25\%$	$\geq 30\%$	300,000

	Operating force Newtons (grams)	Tactile Feeling	Operating Life
KMT012NGJLHS	1.0 (100) $\pm 25\%$	$\geq 10\%$	1,000,000
KMT022NGJLHS	1.6 (160) $\pm 25\%$	$\geq 30\%$	600,000
KMT072NGJLHS	2.3 (230) $\pm 25\%$	$\geq 30\%$	600,000

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

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

Process

SOLDERING: This component is suited to the following methods:

- Infrared Reflow Soldering in accordance with IEC61760-1

Packaging

In reels of 5,000 pieces.

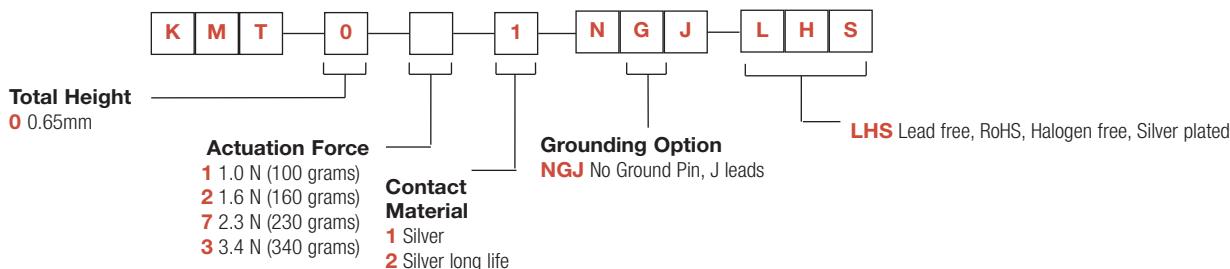
Dimensions of reels according to EIA 481B

External diameter 180 mm

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

Part Number Description

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

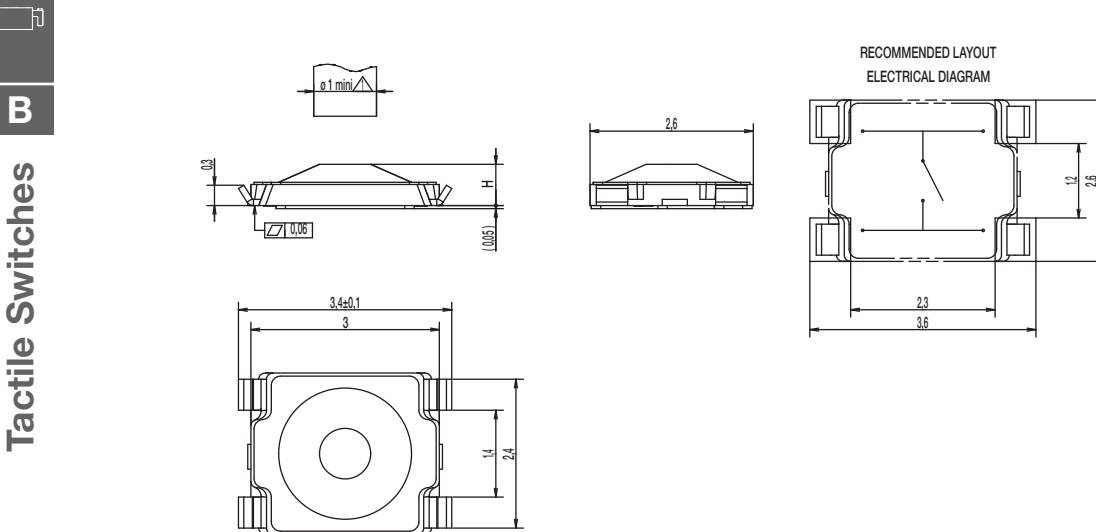


KMT0 Series

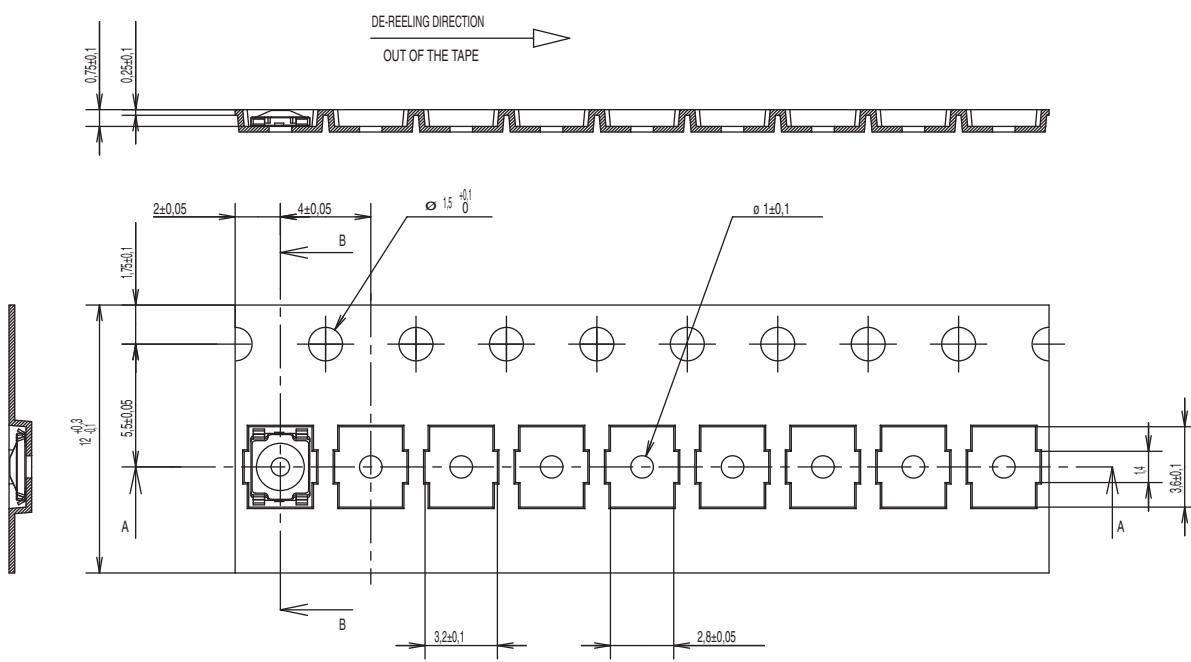
Nano-Miniature SMT Top Actuated

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

Tactile Switches



TAPE & REEL



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KMR 2 Series

Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

- Automotive
- Industrial electronics
- Medical equipment



B

Tactile Switches

Specification

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

Mechanical

Type G and NG 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
KMR211 ULC LFS	1.2 (120) ± 0.30	200,000	0.20 mm ± 0.1
KMR213 LFG	1.2 (120) ± 0.30	200,000	0.20 mm ± 0.1
KMR213 ULC LFG	1.2 (120) ± 0.30	200,000	0.20 mm ± 0.1
KMR221 LFS	2.0 (200) ± 0.50	200,000	0.25 mm ± 0.1
KMR221 ULC LFS	2.0 (200) ± 0.50	200,000	0.25 mm ± 0.1
KMR223 LFG	2.0 (200) ± 0.50	200,000	0.25 mm ± 0.1
KMR223 ULC LFG	2.0 (200) ± 0.50	200,000	0.25 mm ± 0.1
KMR231 LFS	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1
KMR231 ULC LFS	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1
KMR232 LFS	3.0 (300) ± 0.75	300,000	0.25 mm ± 0.1
KMR232 ULC LFS	3.0 (300) ± 0.75	300,000	0.25 mm ± 0.1
KMR233 LFG	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1
KMR233 ULC LFG	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1
KMR241 LFS	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR241 ULC LFS	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR242 LFS	4.0 (400) ± 1.00	200,000	0.30 mm ± 0.1
KMR242 ULC LFS	4.0 (400) ± 1.00	200,000	0.30 mm ± 0.1
KMR243 LFG	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR243 ULC LFG	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1

Electrical

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

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

Environmental

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

Process

Infrared Reflow Soldering in accordance with IEC61760-1

Packaging

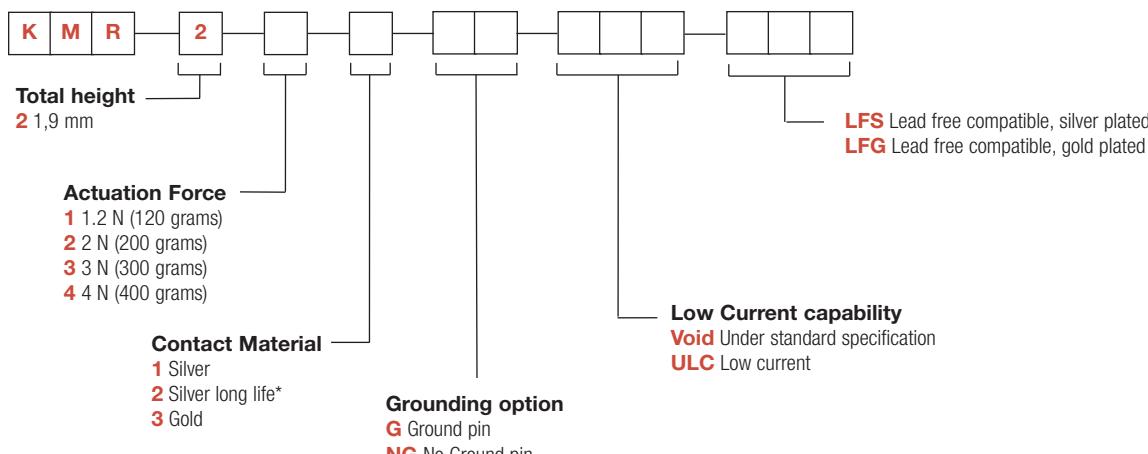
In reels of 7,000 pieces
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



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



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B-13

Dimensions are shown: mm
Specifications and dimensions subject to change

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KMR 2 Series

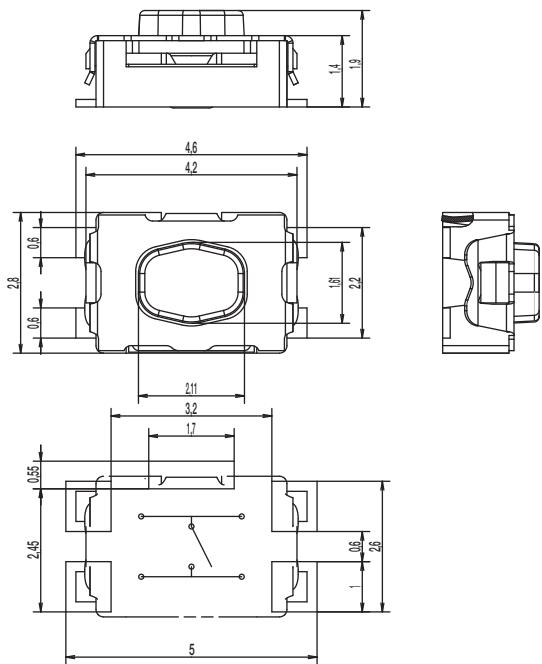
Microminiature Tact Switch for SMT

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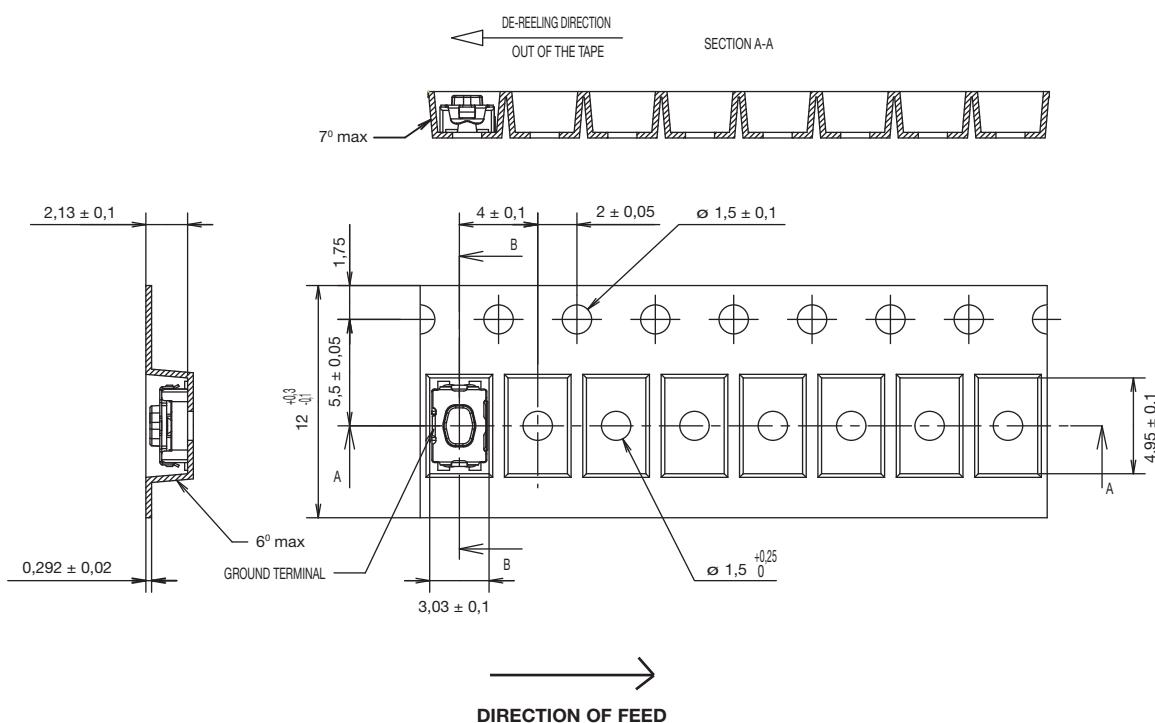
Tactile Switches

KMR 2 Series - 1.9 mm height

PCB layout shown with ground pin option



TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change

KMR 4 Series

Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

- Automotive
- Industrial electronics
- Medical equipment



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: Gullwing type for SMT

Mechanical

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

Electrical

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

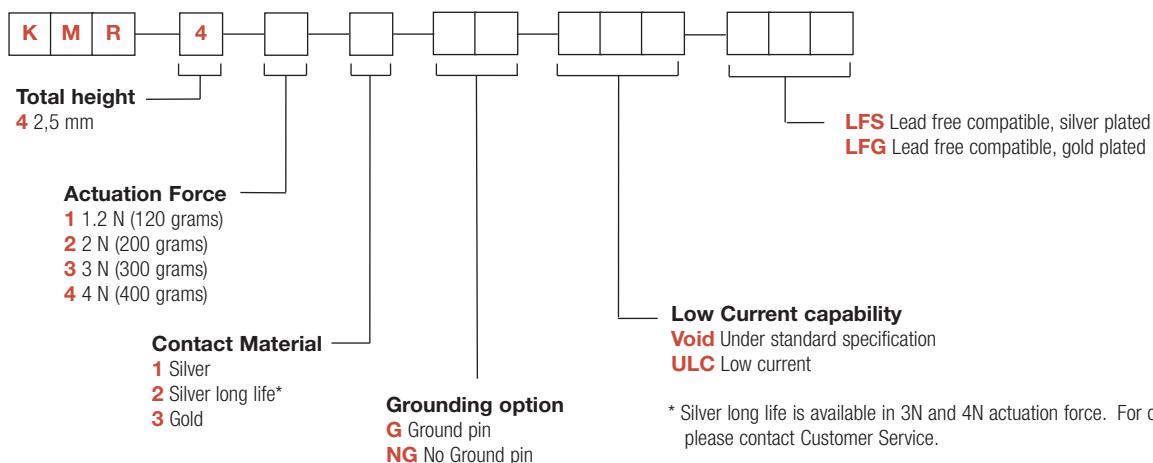
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



KMR 4 Series

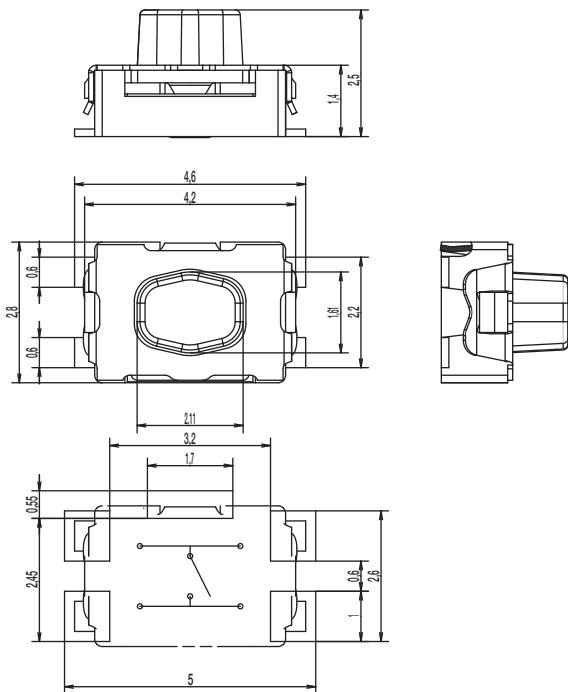
Microminiature Tact Switch for SMT

B

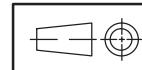
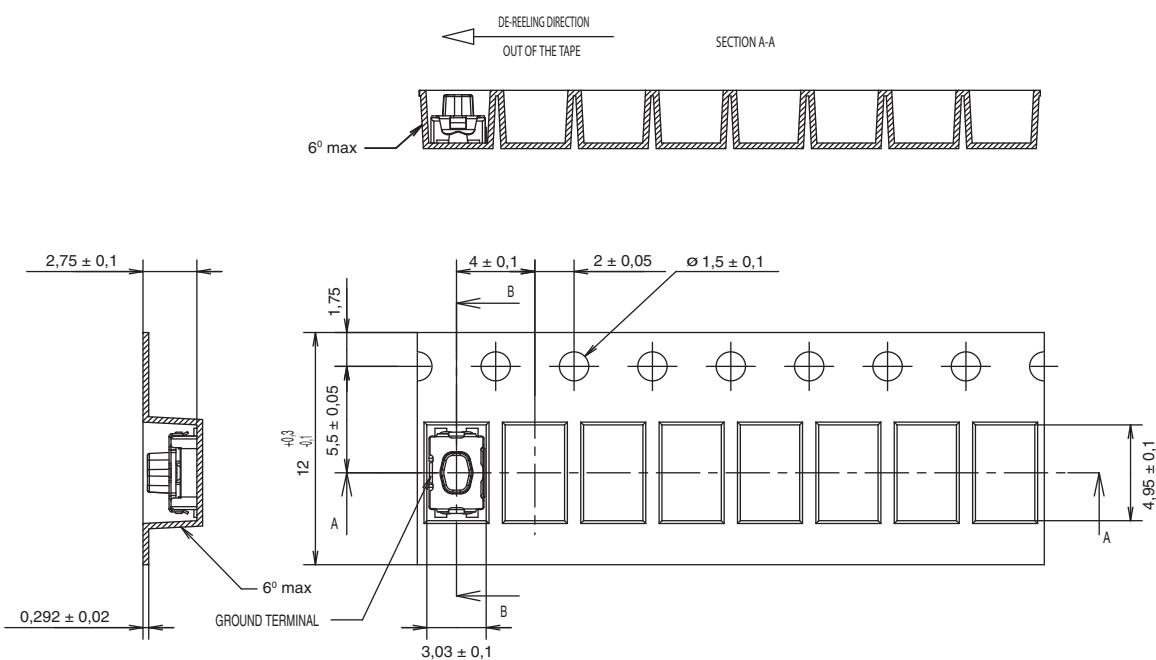
Tactile Switches

KMR 4 Series - 2.5 mm height

PCB layout shown with ground pin option



TAPE & REEL



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KMR 6 Series

Microminiature SMT Top Actuated IP67

Features/Benefits

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

Typical Applications

- Automotive
- Medical
- Consumer
- Industrial



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: Gullwing type for SMT

Mechanical

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

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

KMR 6 series with actuation force in 1.2N: ≥ 20%

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
STORAGE TEMPERATURE:	-55°C to 85°C

Process

Infrared Reflow Soldering in accordance with IEC61760-1

Packaging

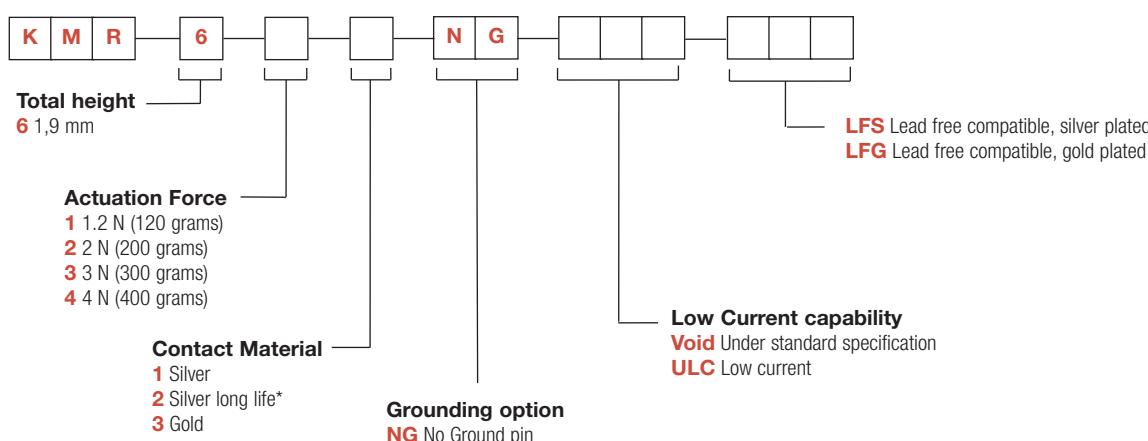
In reels of 7,000 pieces

External diameter 330 mm ± 2 mm

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

Part Number Description

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



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

KMR 6 Series

Microminiature SMT Top Actuated IP67

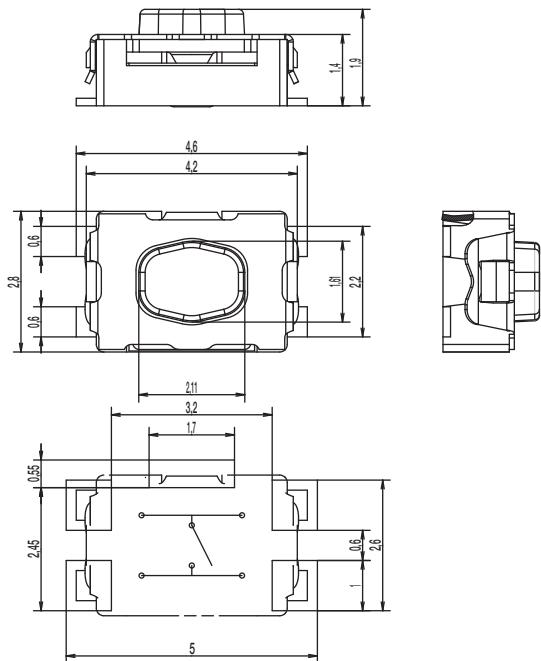


B

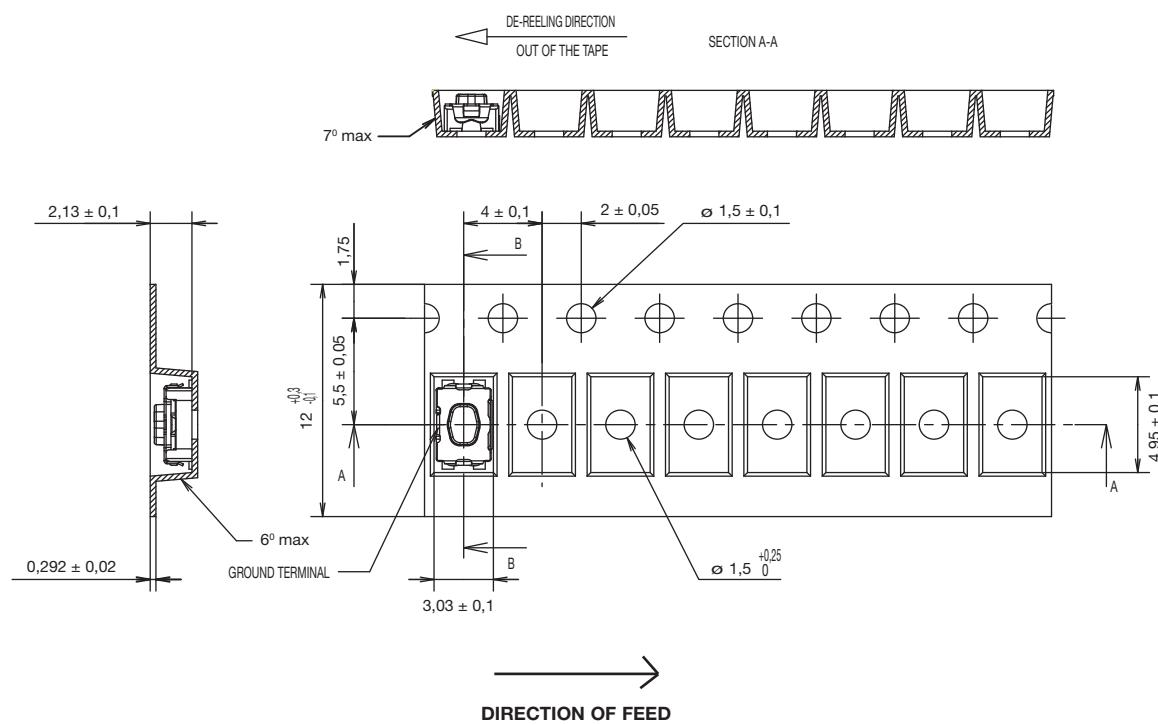
Tactile Switches

KMR 6 Series - 1.9 mm height

PCB layout shown with ground pin option



TAPE & REEL



KMR 7 Series

Microminiature SMT Top Actuated IP67

Features/Benefits

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

Typical Applications

- Automotive
- Medical
- Consumer
- Industrial



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: Gullwing type for SMT

Mechanical

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

Electrical

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

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

Environmental

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

Process

Infrared Reflow Soldering in accordance with IEC61760-1

Packaging

In reels of 6,000 pieces

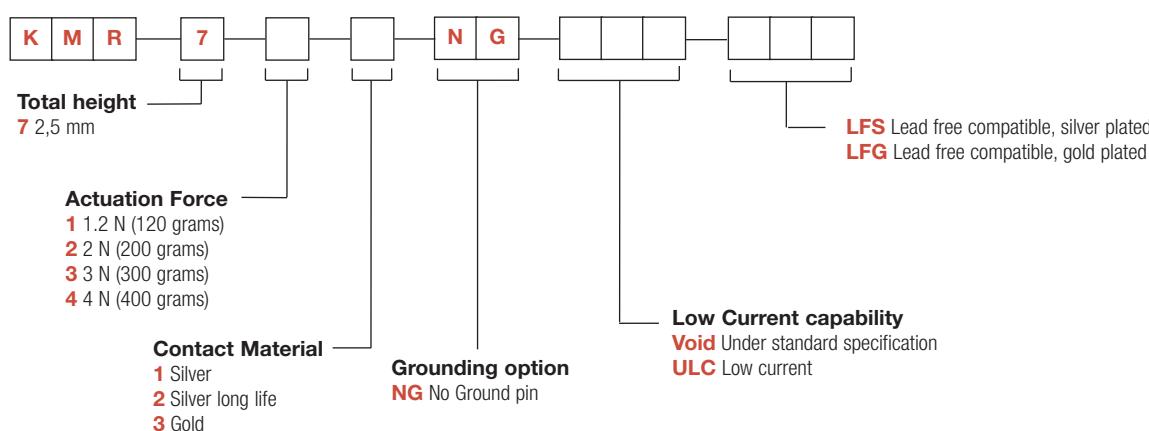
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



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

KMR 7 Series

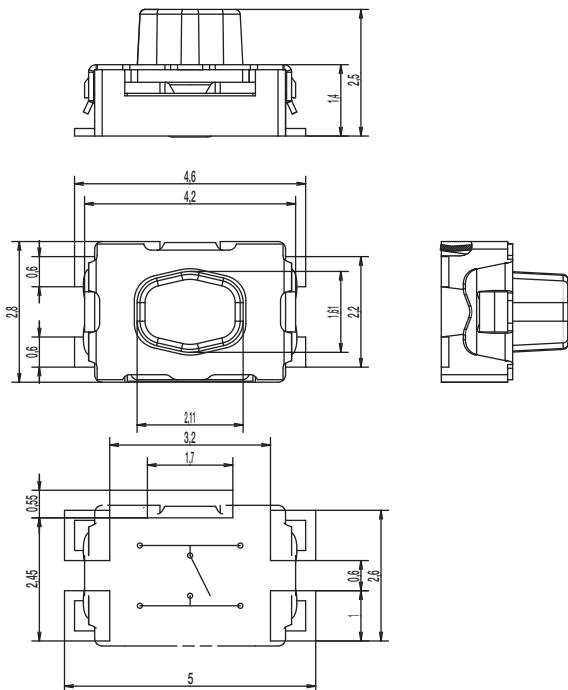
Microminiature SMT Top Actuated IP67

B

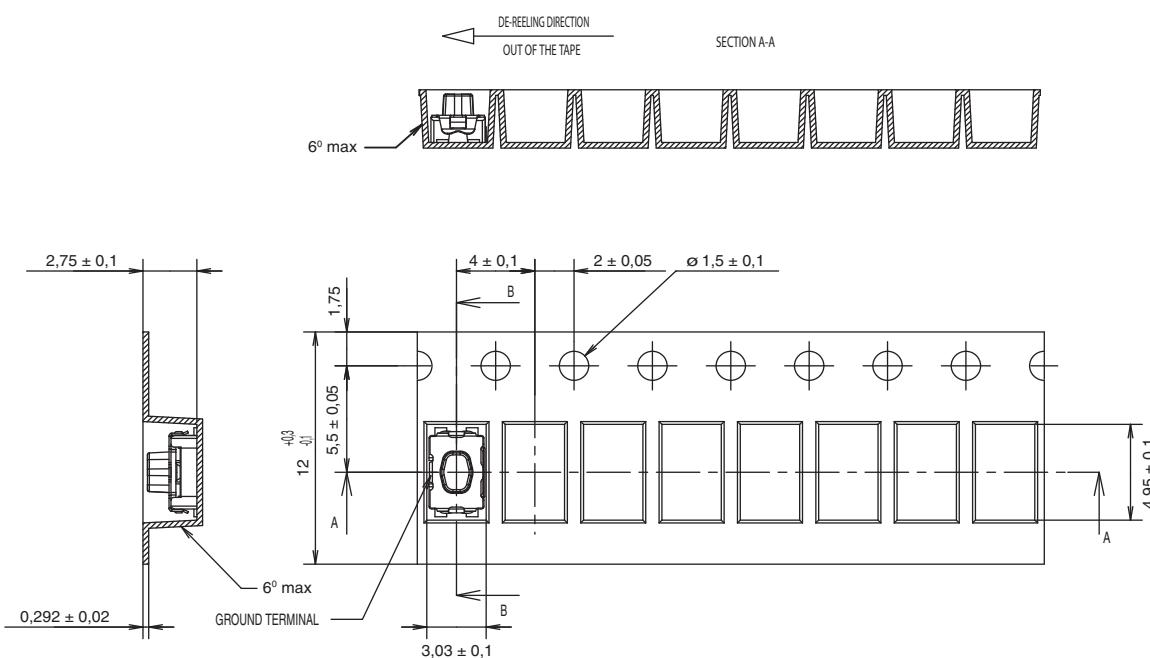
Tactile Switches

KMR 7 Series - 2.5 mm height

PCB layout shown with ground pin option



TAPE & REEL



KMR 8 Series

Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

- Automotive
- Mobile 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 See description below	Operating force N (grs)	Operating life (cycles)	Travel (mm)
KMR811G LFS	1.2 (120) ± 0.30	200,000	0.20 mm ± 0.1
KMR821G LFS	2.0 (200) ± 0.50	200,000	0.25 mm ± 0.1
KMR831G LFS	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1
KMR831NG ULC LFS	3.0 (300) ± 0.75	150,000	0.25 mm ± 0.1

TACTILE FEELING:

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

KMR 8 series with actuation force in 1.2N: ≥ 20%

Electrical

Silver

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

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

Environmental

Silver

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

Process

Infrared Reflow Soldering in accordance with IEC61760-1

Packaging

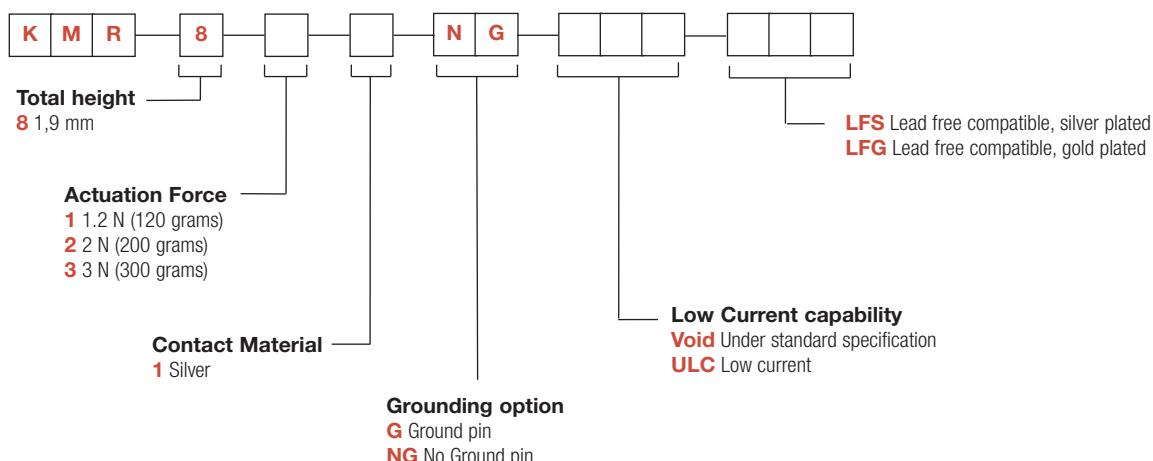
In reels of 7,000 pieces

External diameter 330 mm ± 2 mm

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

Part Number Description

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



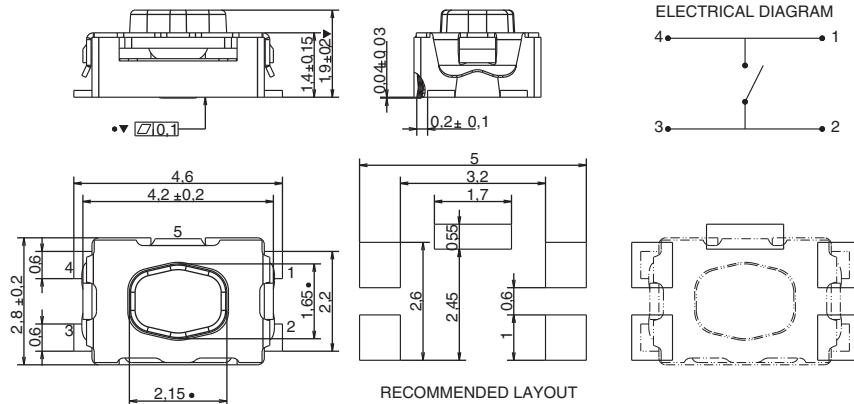
KMR 8 Series

Microminiature SMT Top Actuated

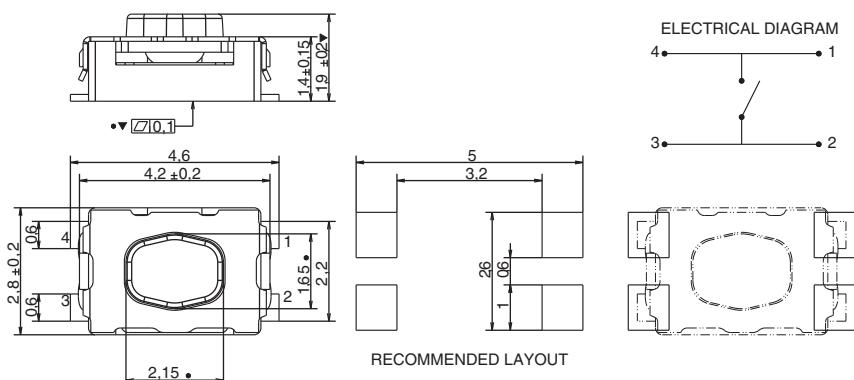
B

Tactile Switches

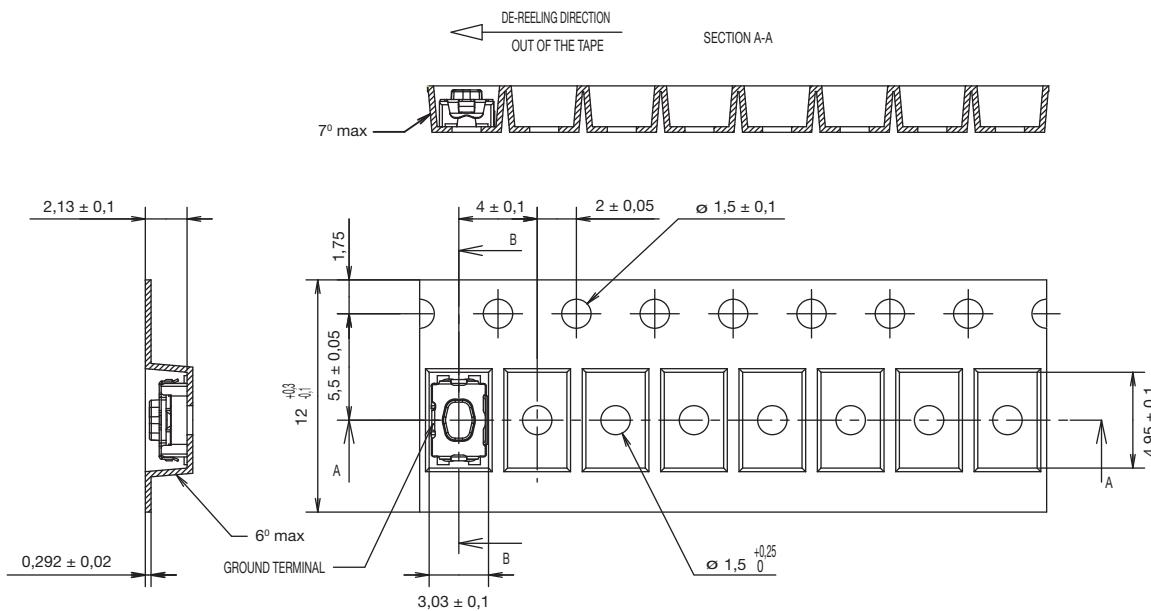
G - Ground Pin



NG - No Ground Pin



TAPE & REEL



KMS Series

Microminiature SMT Side Actuated

Features/Benefits

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

Typical Applications

- Mobile phones
- 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 ⁹ Ω	
BOUNCE TIME:	≤ 3 ms	

Environmental

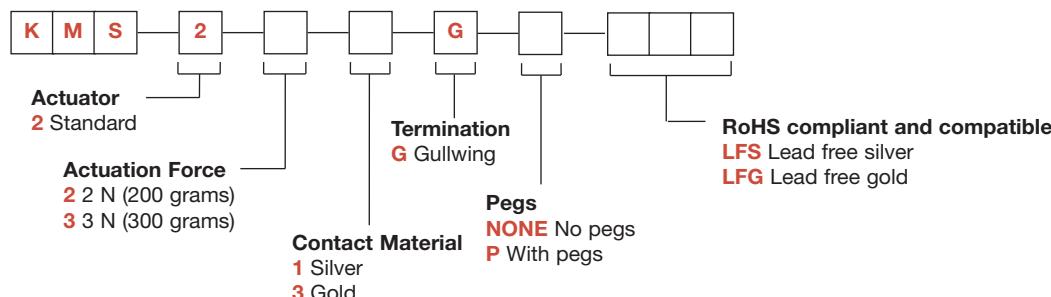
	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 85°C	-40°C to 125°C
STORAGE TEMPERATURE:	-55°C to 85°C	-55°C to 125°C

Process

Infared 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.



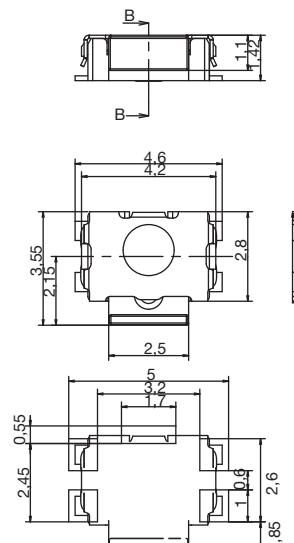
KMS Series

Microminiature SMT Side Actuated

Tactile Switches

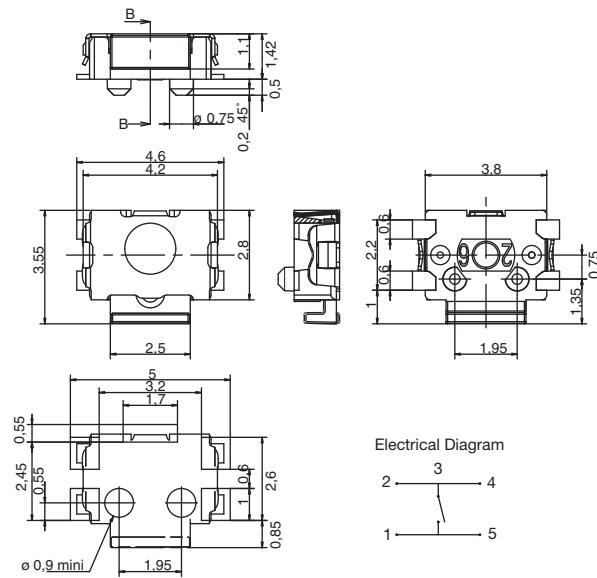
KMS

B



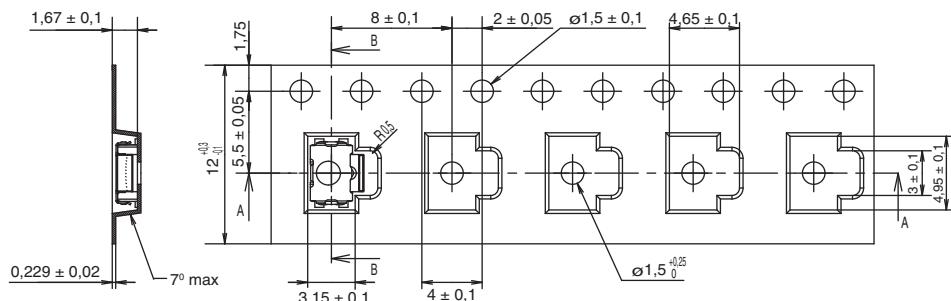
Electrical Diagram
2 — 3 — 4
1 — 5

KMS WITH PEGS

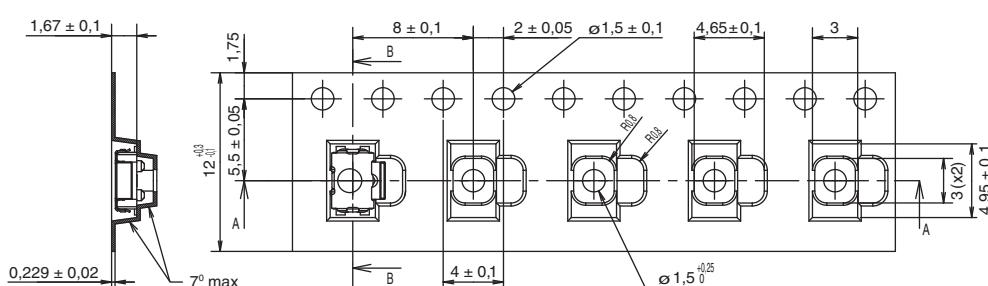


Electrical Diagram
2 — 3 — 4
1 — 5

TAPE & REEL



WITH PEGS



DIRECTION OF FEED
→



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

PTS 525 Series

Microminiature Tact Switch for SMT

Features/Benefits

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

Typical Applications

- **Consumer products**
- **Instrumentation**
- **Remote controls**



B

Tactile Switches

Specification

FUNCTION: Momentary action

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

Electrical

MAXIMUM VOLTAGE:	15 VDC
MAXIMUM CURRENT DC:	20 mA
DIELECTRIC STRENGTH:	250 VA C (1mn)
CONTACT RESISTANCE:	$\leq 100 \text{ m}\Omega$
INSULATION RESISTANCE:	$\geq 100 \text{ M}\Omega$
BOUNCE TIME:	$\leq 10 \text{ ms}$

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

Process

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

Packaging

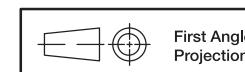
Switches in reels of:
5,000 pieces in 0.8 mm height
4,000 pieces in 1.5 mm height
Dimensions of reels according to EIA 481B
External diameter 330 mm

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

How To Order

Please see chart below for full part numbers.

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



Dimensions are shown: mm
Specifications and dimensions subject to change

PTS 525 Series

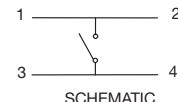
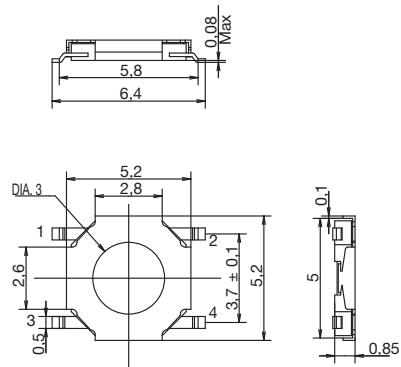
Microminiature Tact Switch for SMT



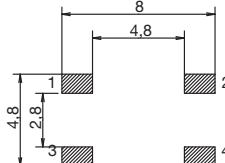
Tactile Switches

B

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

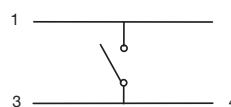
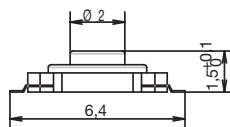


SCHEMATIC

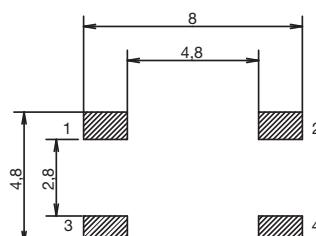
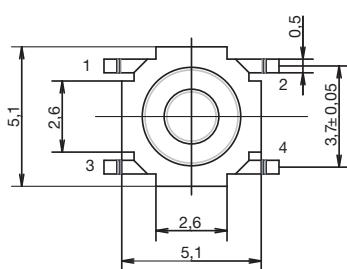


RECOMMENDED PCB LAYOUT

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

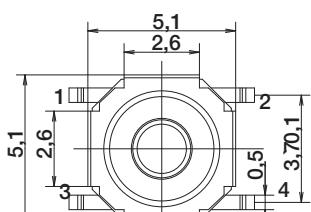
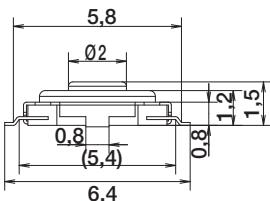


SCHEMATIC



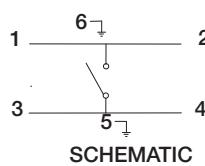
RECOMMENDED PCB LAYOUT

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

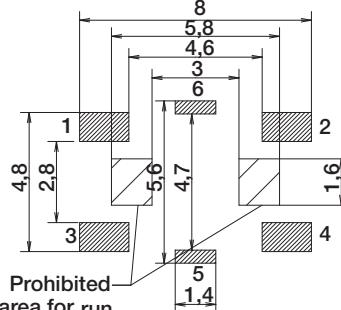


SEE DETAIL
B

DETAIL B
SCALE
20



SCHEMATIC

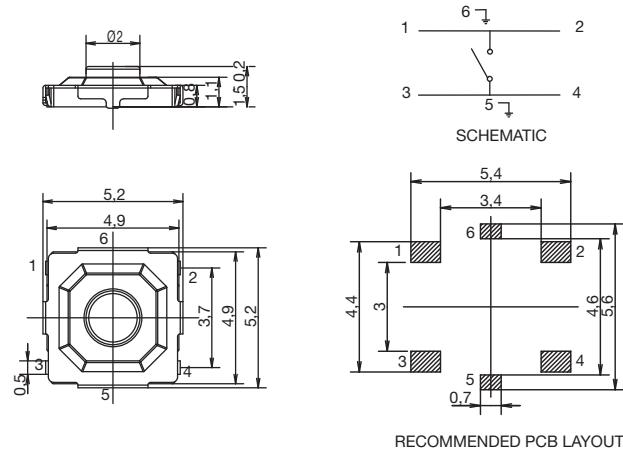


RECOMMENDED PCB LAYOUT

PTS 525 Series

Microminiature Tact Switch for SMT

PTS525 SMG15J SMTR2 LFS
PTS525 SKG15J SMTR2 LFS



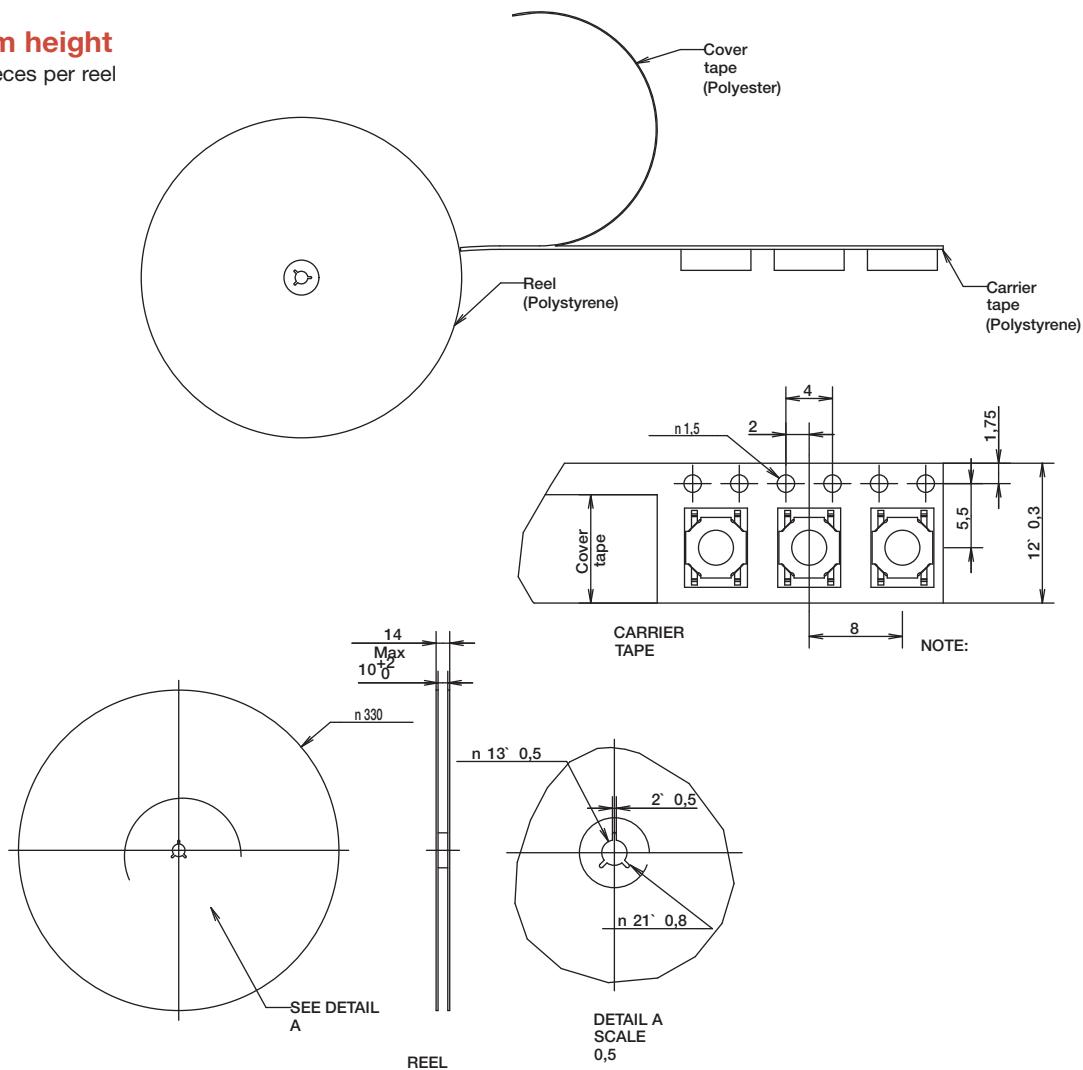
B

Tactile Switches

TAPE & REEL

0.8 mm height

5,000 pieces per reel



C&K

Dimensions are shown: mm
 Specifications and dimensions subject to change

PTS 525 Series

Microminiature Tact Switch for SMT

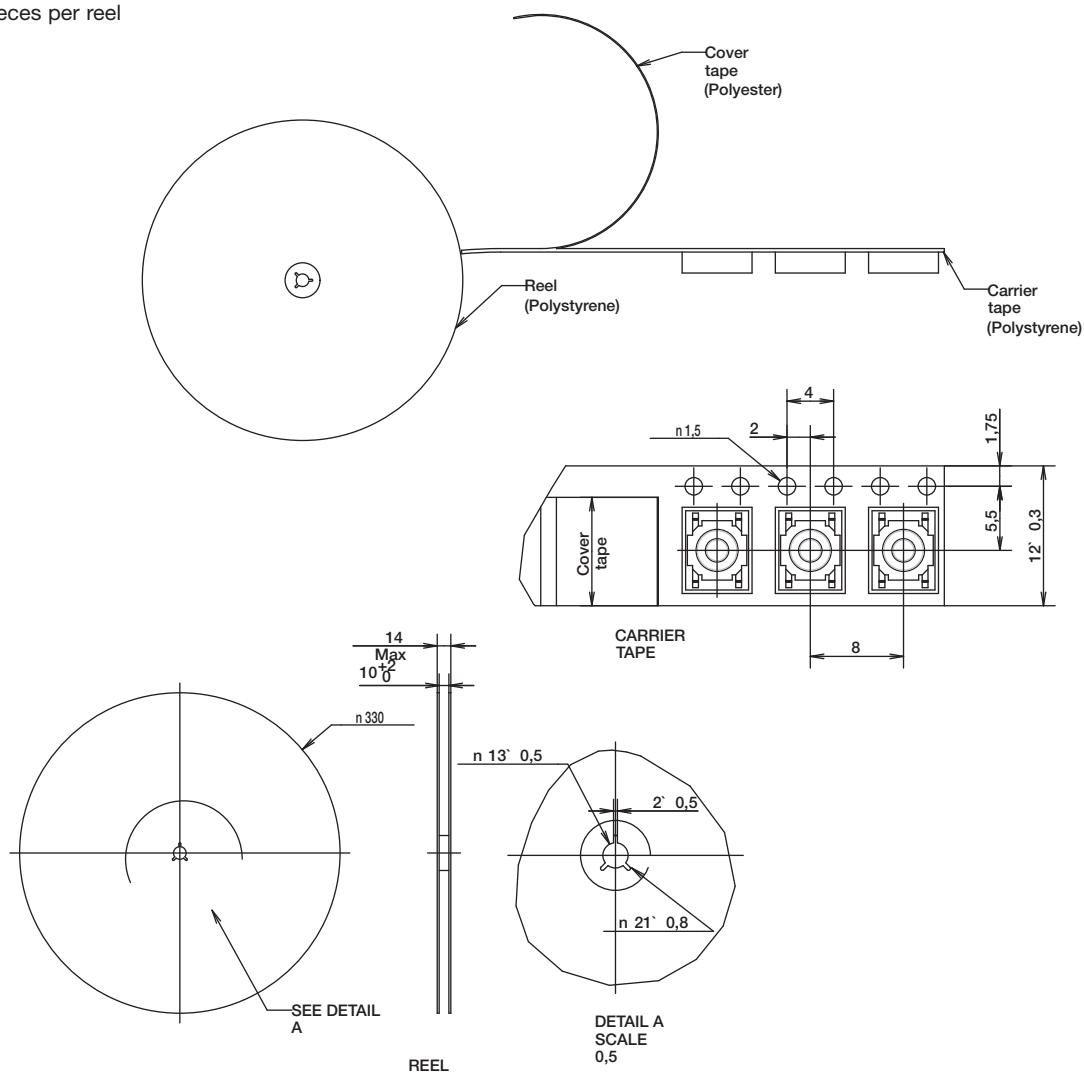
TAPE & REEL

Tactile Switches

A
B

1.5 mm height

4,000 pieces per reel



Dimensions are shown: mm
Specifications and dimensions subject to change

PTS 530 Series

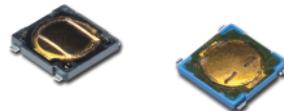
Ultra Low Profile SMT Top Actuated

Features/Benefits

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

Typical Applications

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



B

Tactile Switches

Specifications

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

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

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

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

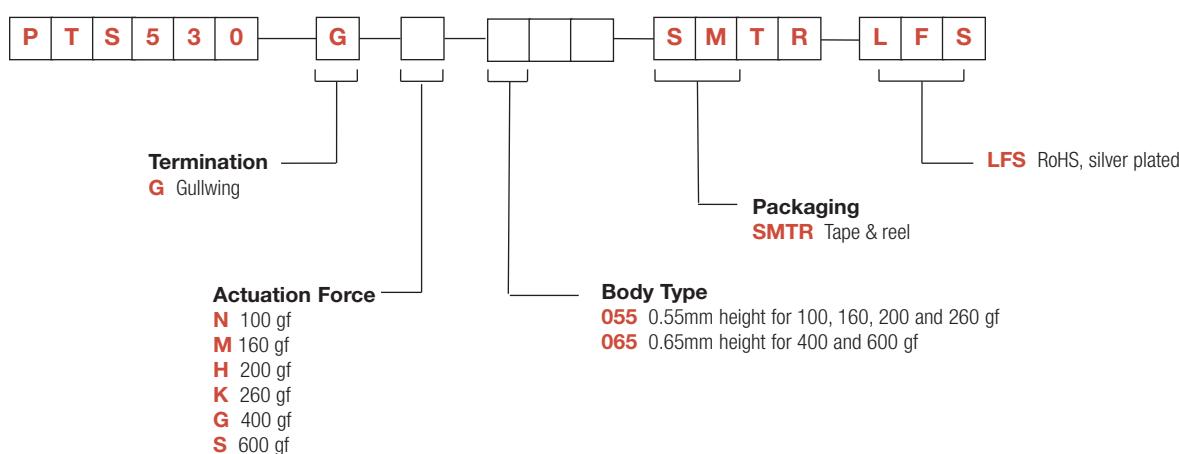
Packaging

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

How To Order

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

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

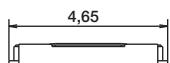


PTS 530 Series

Ultra Low Profile SMT Top Actuated

TERMINATION

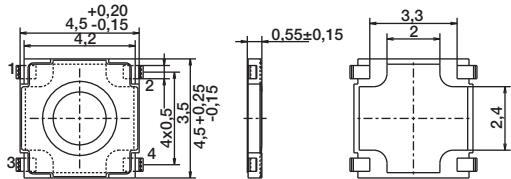
G GULLWING



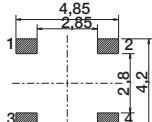
Tactile Switches

B

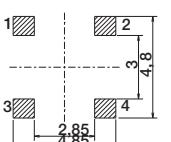
055 0,55 MM HEIGHT



SCHEMATIC



ALTERNATIVE PCB LAYOUT



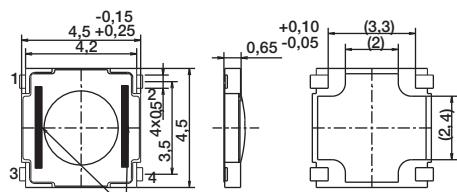
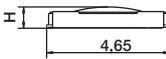
RECOMMENDED PCB LAYOUT

Actuation force identification lines:

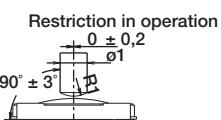
N: 100 gf	
M: 160 gf	No Lines
H: 200 gf	
K: 260 gf	

065 0,65 MM HEIGHT

PART NUMBER	HEIGHT
PTS 530 GS 065 SMTR LFS	0.72
PTS 530 GG 065 SMTR LFS	0.68

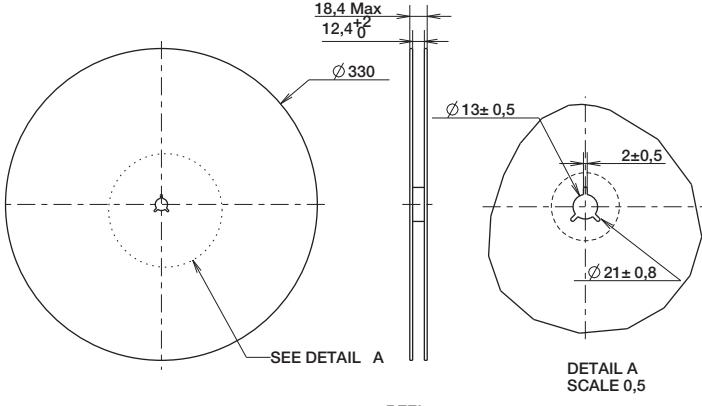
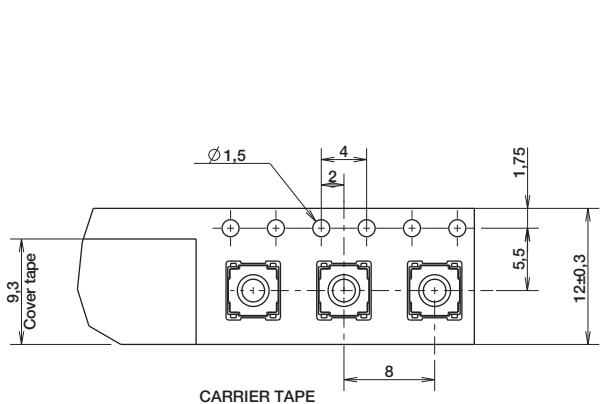


Force symbol lines for 600 gf
No symbol line for 400 gf



G: 400 gf	No Lines
S: 600 gf	

TAPE & REEL



PTS 540 Series

Ultra Low Profile SMT Top Actuated

Features/Benefits

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

Typical Applications

- MP3 accessories
- Bluetooth headset
- Remote controls



B

Tactile Switches

Specifications

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

Mechanical

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

Packaging

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -30°C to 85°C

Process

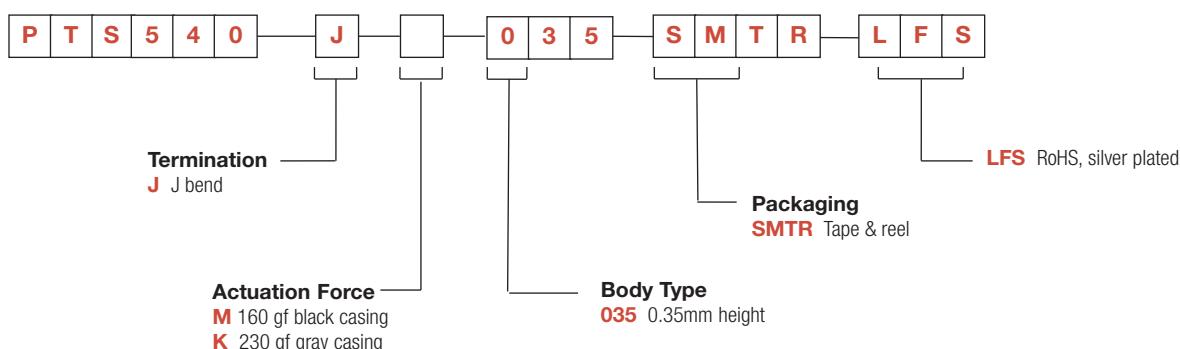
SOLDERING: This component is suited to the following methods:
Infrared Reflow Soldering in accordance with IEC61760-1

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

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.



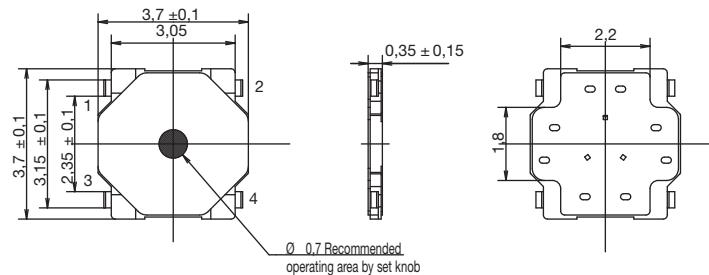
PTS 540 Series

Ultra Low Profile SMT Top Actuated

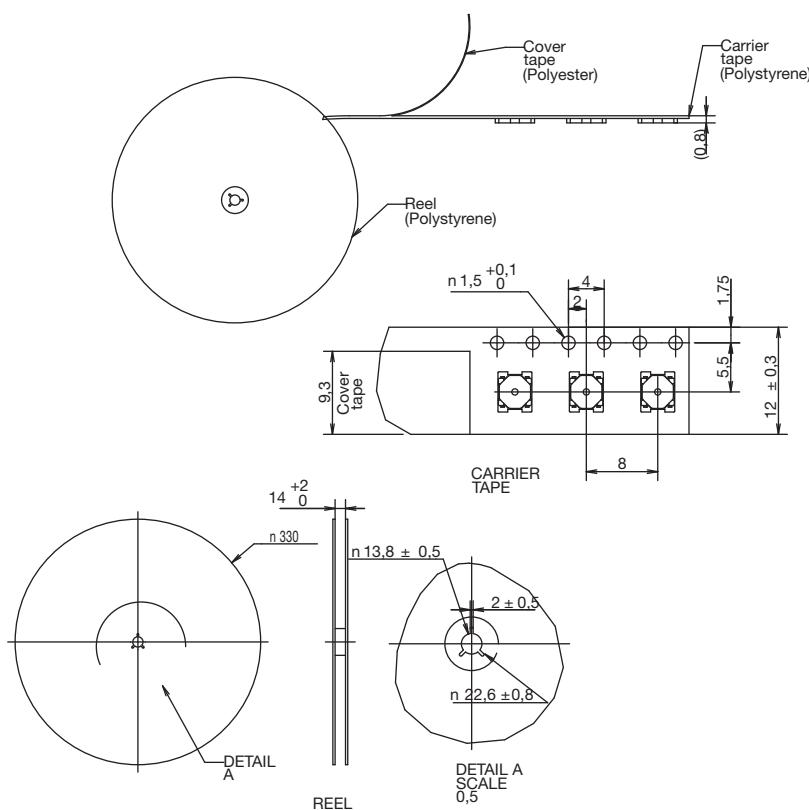
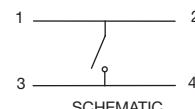
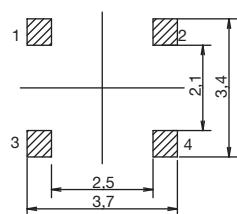
PTS 540

Tactile Switches

B



RECOMMENDED PCB



PTS 810 Series

Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

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



B

Tactile Switches

Specifications

FUNCTION: momentary action

CONTACT ARRANGEMENT: 1 make contact = SPST N.O.

TERMINALS: J type for SMT

TRAVEL: 160 & 260 gf: 0.15mm ± 0.1mm
400 & 600 gf: 0.20mm ± 0.1mm

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

Packaging

Switches in reels of 2,900 pieces.

Dimensions of reels according to EIA 481B

External diameter 330 mm

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

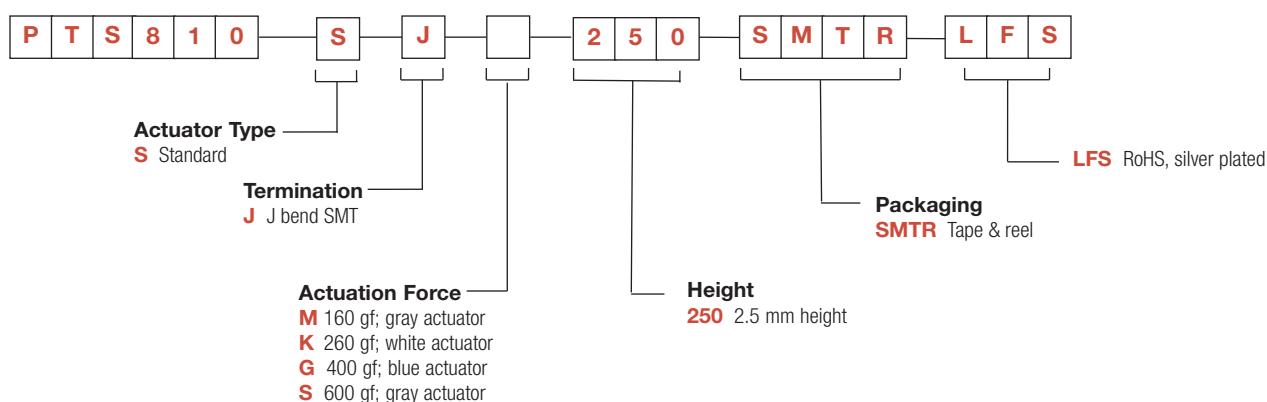
SOLDERING: This component is suited to the following methods:
Infrared Reflow Soldering in accordance with IEC61760-1

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

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.



PTS 810 Series

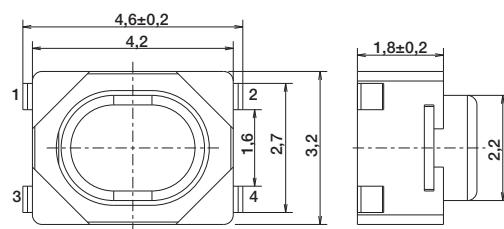
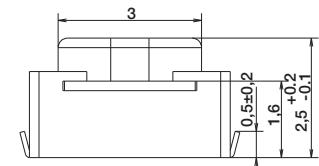
Microminiature SMT Top Actuated

Tactile Switches

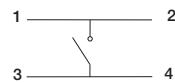
PTS810



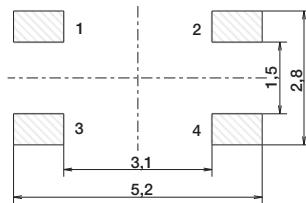
B



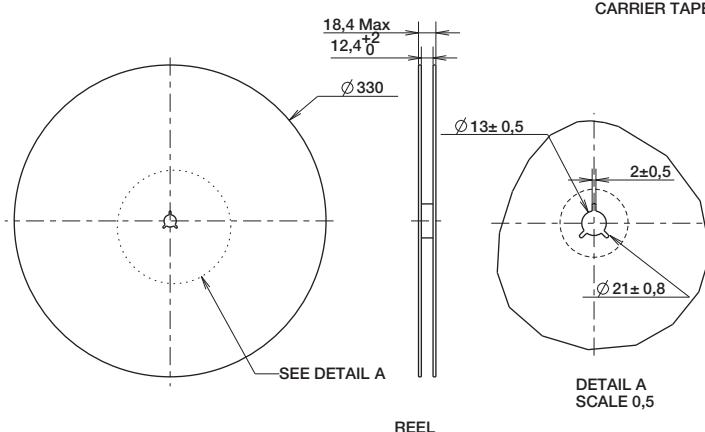
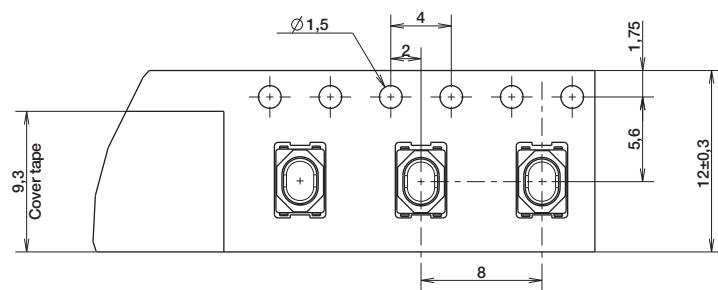
SCHEMATIC



RECOMMENDED PCB LAYOUT



TAPE & REEL



PTS 820 Series

Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

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



B

Tactile Switches

Specifications

FUNCTION: momentary action

CONTACT ARRANGEMENT: 1 make contact = SPST N.O.

TERMINALS: J type for SMT

TRAVEL: 0.2mm + 0.1mm / -0.05 mm

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

Packaging

Switches in reels of 2,500 pieces for 1.5 and 2.0 mm height

Switches in reels of 2,300 pieces for 2.5 mm height

Dimensions of reels according to EIA 481B

External diameter 330 mm

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

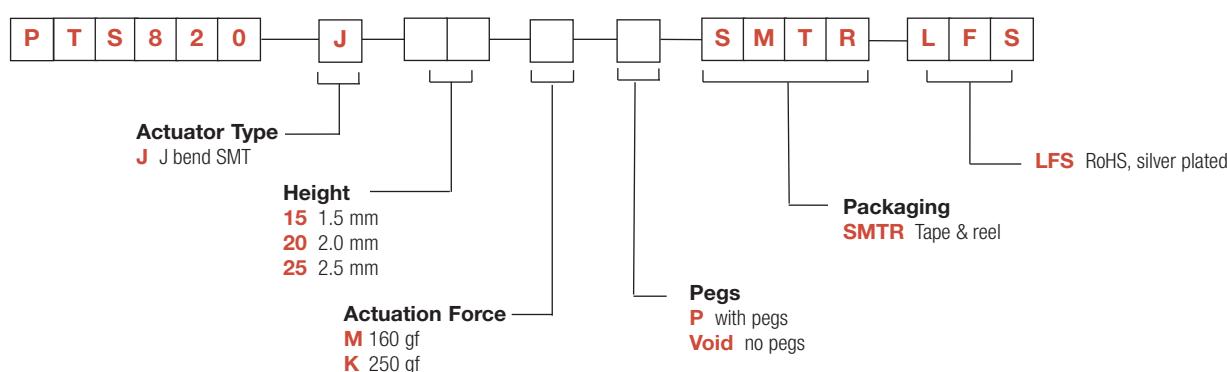
SOLDERING: This component is suited to the following methods:
Infrared Reflow Soldering in accordance with IEC61760-1

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

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.



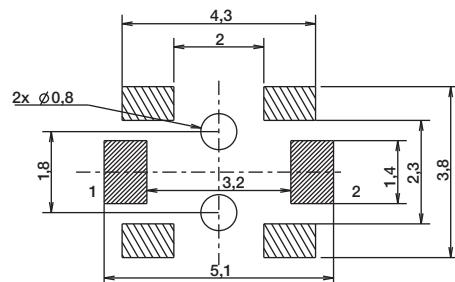
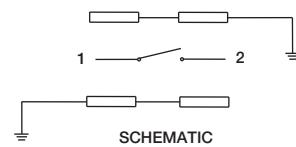
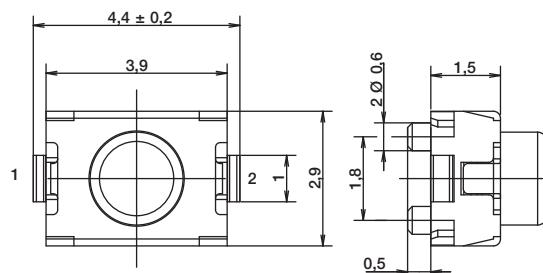
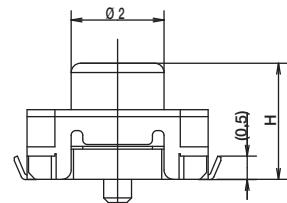
PTS 820 Series

Microminiature SMT Top Actuated

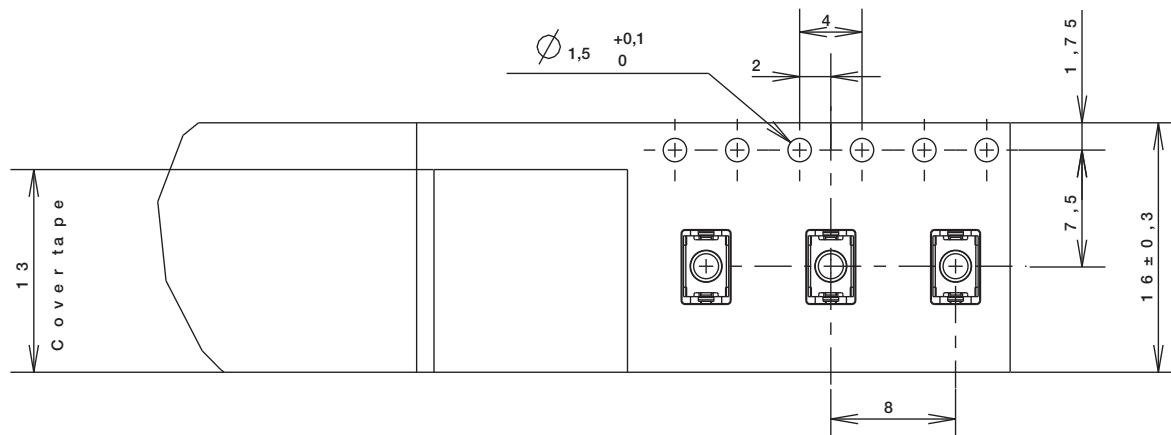
2.5 & 2.0 mm height (H) - version shown here with pegs

Tactile Switches

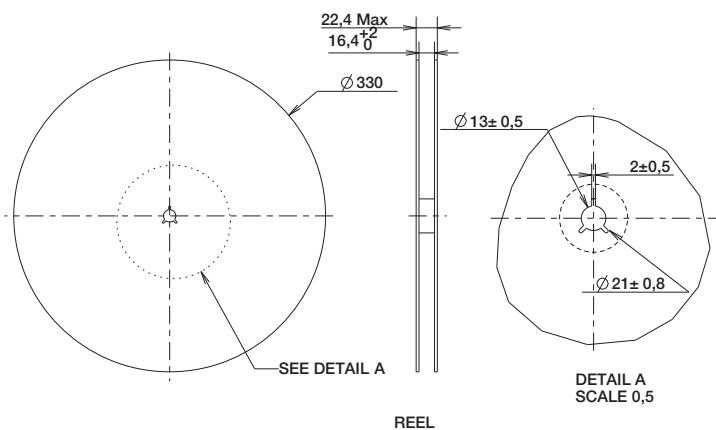
B



RECOMMENDED PCB LAYOUT



CARRIER TAPE



DETAIL A
SCALE 0,5

PTS 820 Series

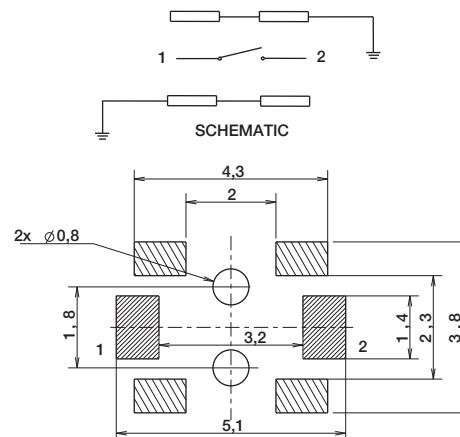
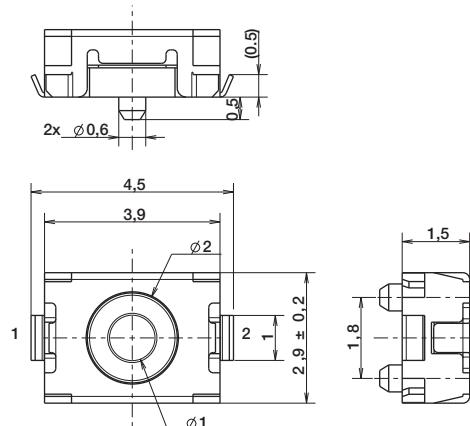
Microminiature SMT Top Actuated

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

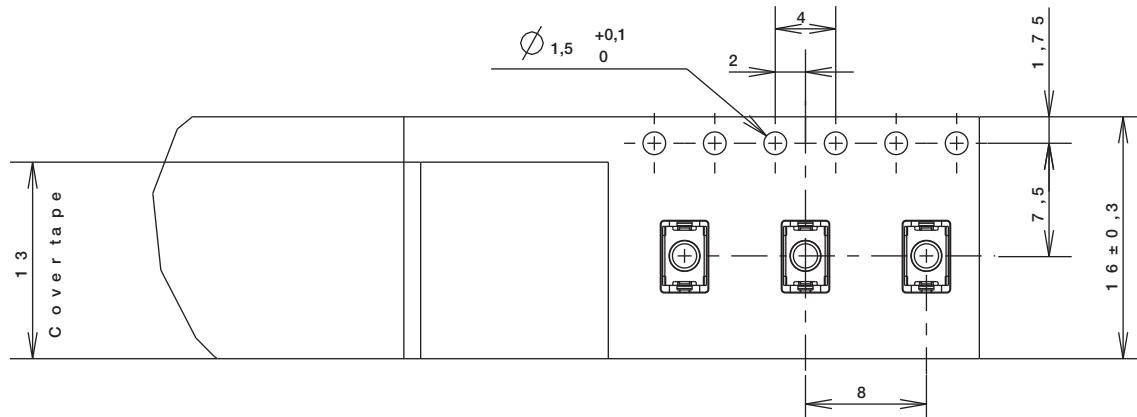


B

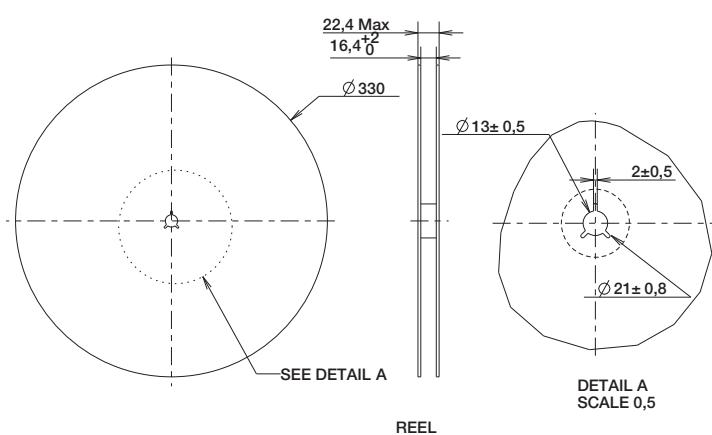
Tactile Switches



RECOMMENDED PCB LAYOUT



CARRIER TAPE



REEL

PTS 830 Series

Microminiature SMT Top Actuated

B

Tactile Switches



Features/Benefits

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

Typical Applications

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

Specifications

FUNCTION: momentary action

CONTACT ARRANGEMENT: 1 make contact = SPST N.O.

TERMINALS: G type for SMT

TRAVEL: 0.15 mm + 0.1 mm

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

Packaging

Switches in reels of 9,500 pieces

Dimensions of reels according to EIA 481B

External diameter 330 mm

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

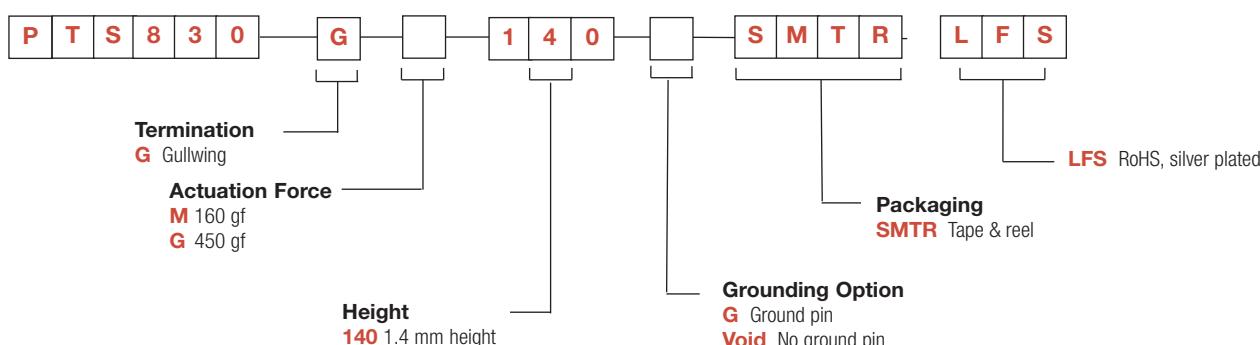
SOLDERING: This component is suited to the following methods:
Infrared Reflow Soldering in accordance with IEC61760-1

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

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.

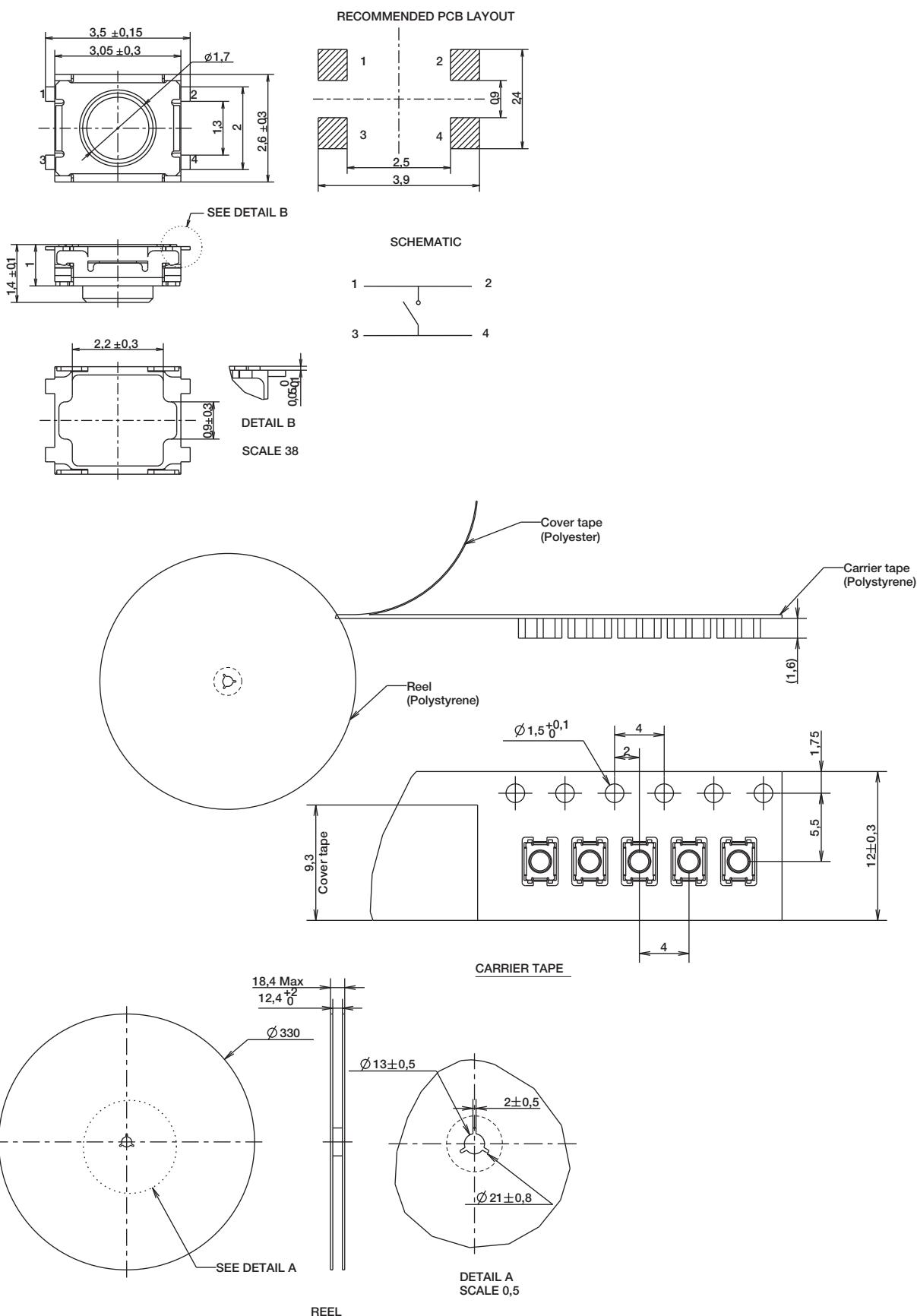
For any part number different from those listed above, please consult your local representative.



PTS 830 Series

Microminiature SMT Top Actuated

PTS830 GX 140 SMTR LFS



Tactile Switches

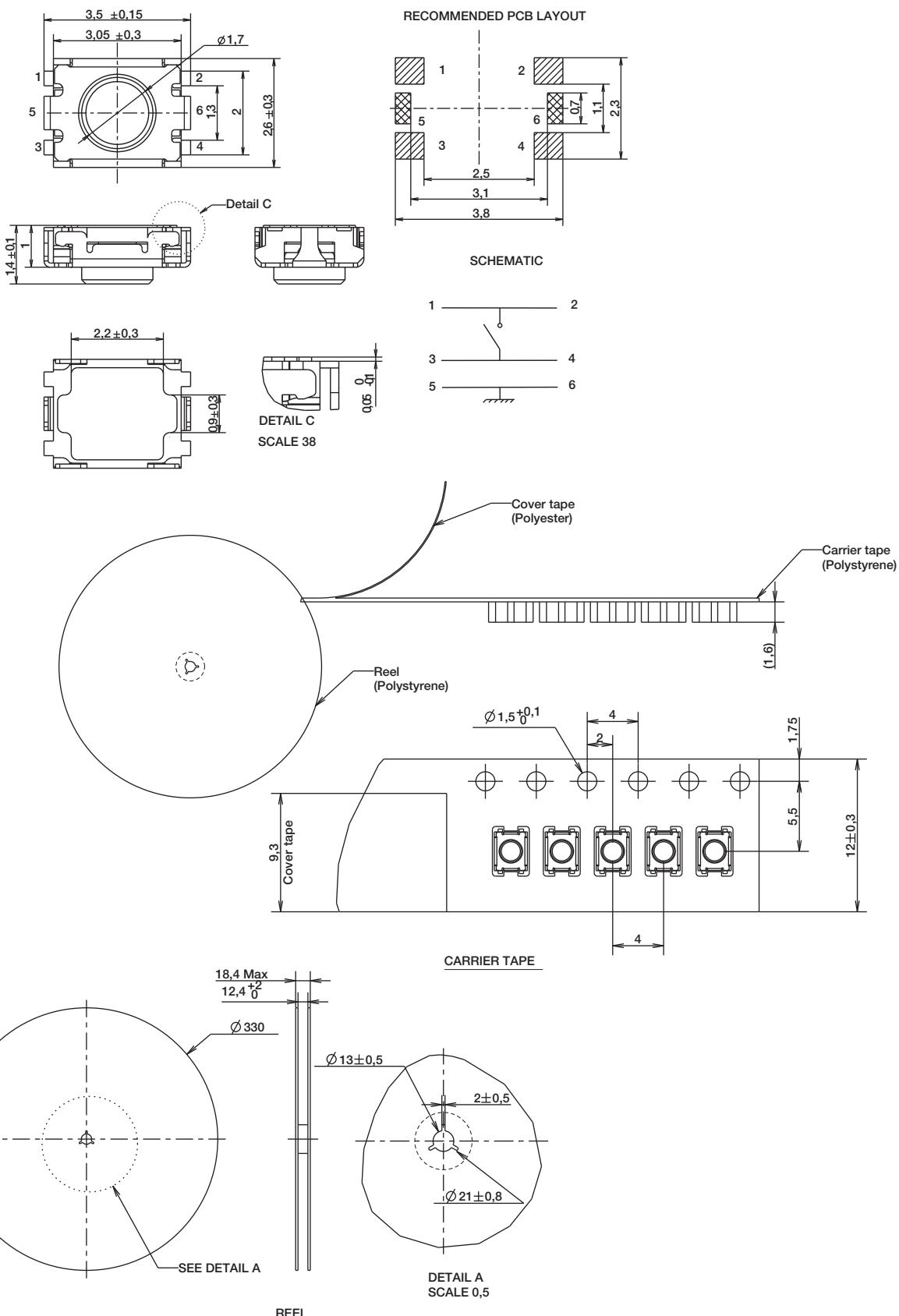
PTS 830 Series

Microminiature SMT Top Actuated

PTS830 GX 140 G SMTR LFS

Tactile Switches

B



**B**

Tactile Switches

PTS 840 Series

Microminiature SMT Side Actuated

B

Tactile Switches



Features/Benefits

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

Typical Applications

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

Specifications

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

Electrical

MAXIMUM VOLTAGE:	12 VDC
MAXIMUM CURRENT DC:	50 mA
DIELECTRIC STRENGTH:	250 VA C (1mn)
CONTACT RESISTANCE:	$\leq 500 \text{ m}\Omega$
INSULATION RESISTANCE:	$\geq 100 \text{ M}\Omega$
BOUNCE TIME:	$\leq 10 \text{ ms}$

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

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

Packaging

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

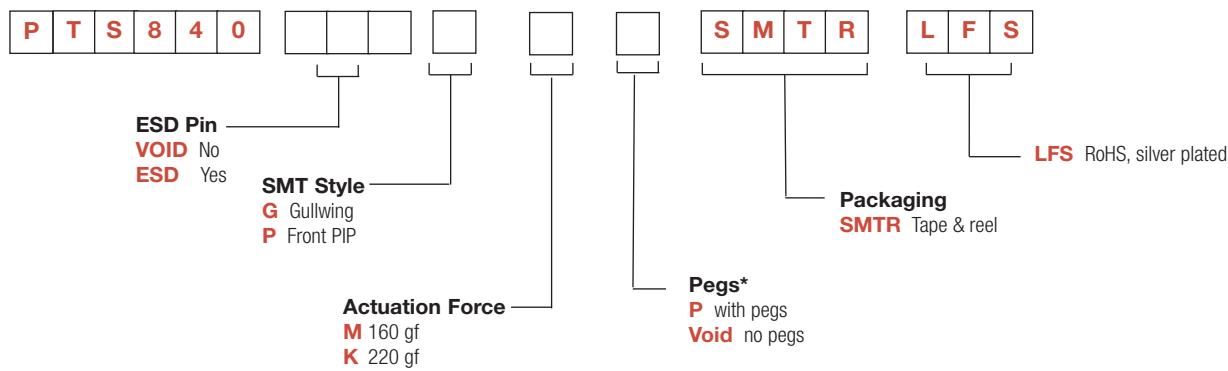
NOTE: Specifications listed above are for switches with standard options.
For information on specific and custom switches, consult Customer Service Center.

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

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.



* Peg option not valid for P SMT leads type

Design Recommendations

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

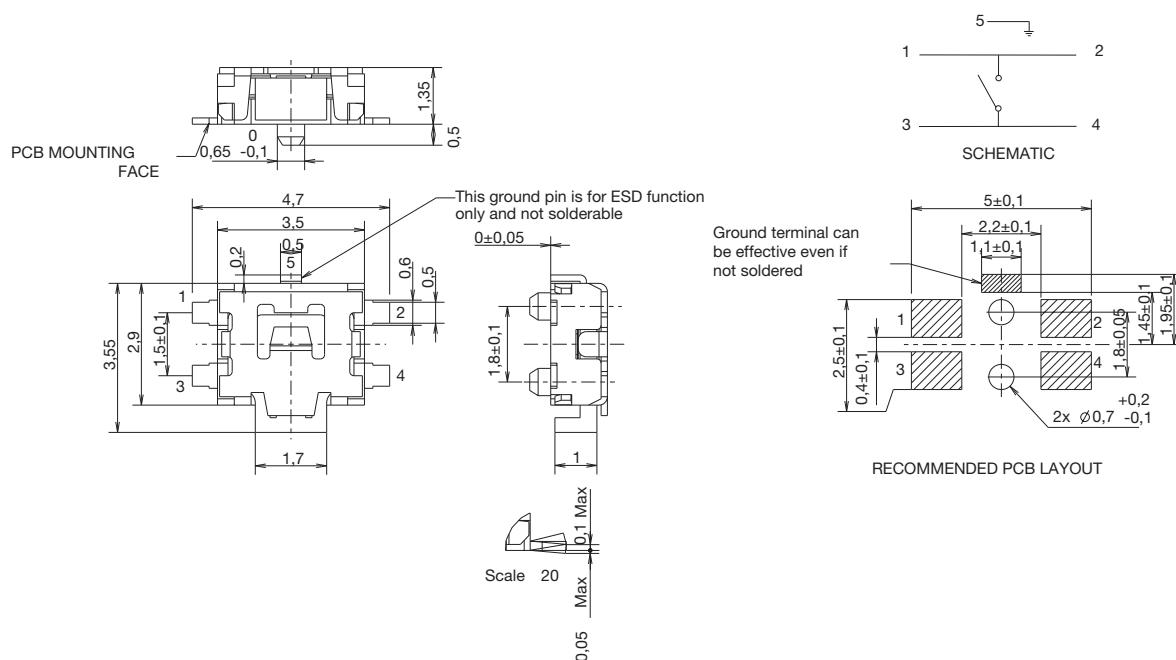


Dimensions are shown: mm
Specifications and dimensions subject to change

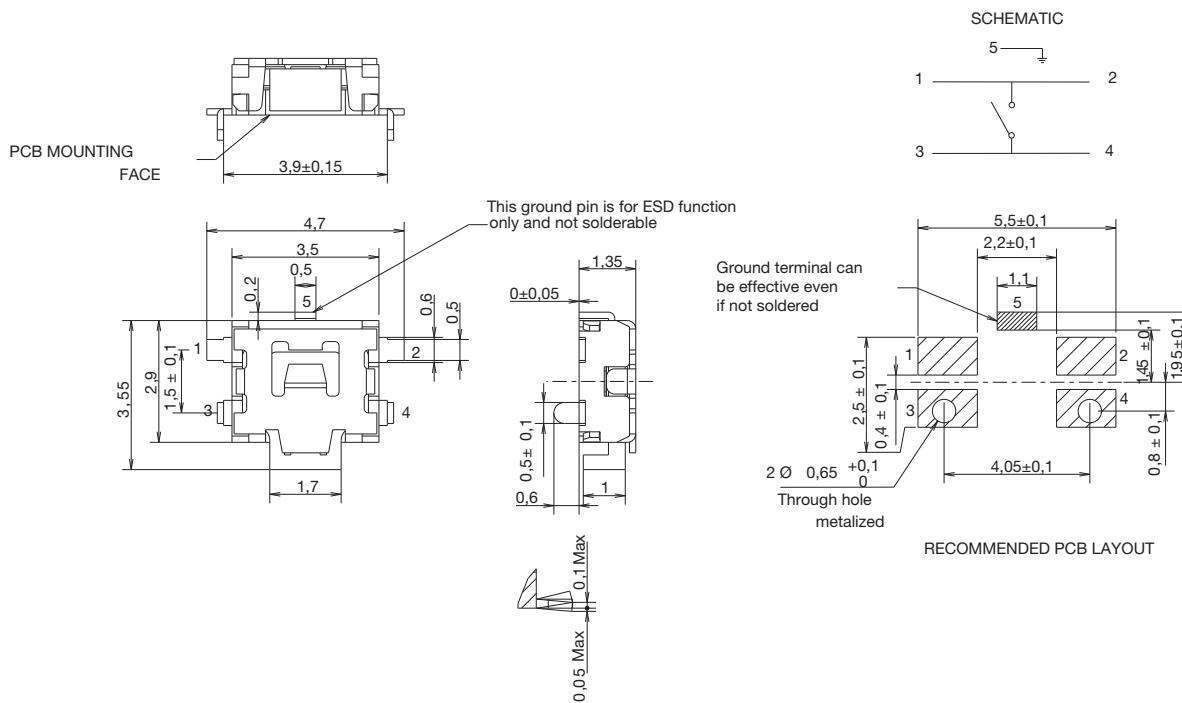
PTS 840 Series

Microminiature SMT Side Actuated

Standard G SMT Leads with ESD and Peg options



P SMT Leads with ESD option

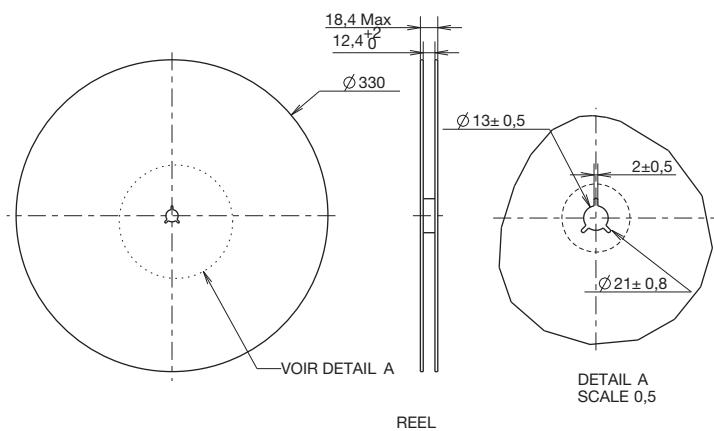
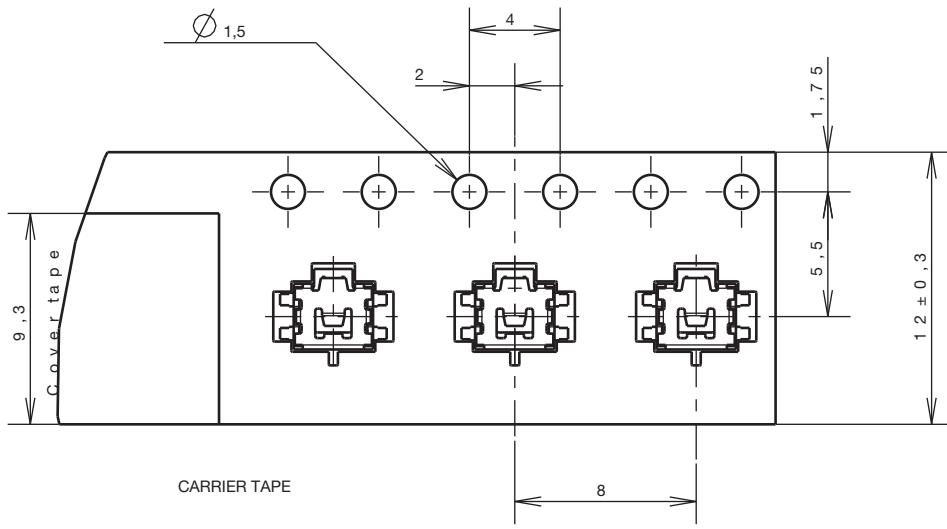


PTS 840 Series

Microminiature SMT Side Actuated

TAPE & REEL

Tactile Switches



KSR Series

Subminiature Tact Switch for SMT

Features/Benefits

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

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics
- Smart meters



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 (mm)
KSR211G LFS / KSR213G LFG	1,5 < 1,85 (185) < 2,2	100,000	0,25 ± 0,15
KSR221G LFS / KSR223G LFG	1,9 < 2,25 (225) < 2,6	100,000	0,3 ± 0,15
KSR231G LFS / KSR233G LFG	2,25 < 3,00 (300) < 3,75	100,000	0,35 ± 0,15
KSR251G LFS / KSR253G LFG	3,4 < 4,50 (450) < 5,6	100,000	0,5 ± 0,15
KSR221G NC LFS	1,5 < 2,25 (225) < 3	30,000	0,3 ± 0,15
KSR223G NC LFG	1,5 < 2 (200) < 2,5	30,000	0,3 ± 0,15

Overload: 20 Newtons

Detect switch versions are available. Please see Detect chapter
KSR2D/M series.

Packaging

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

Electrical

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

CONTACT RESISTANCE: ≤ 100 mΩ

INSULATION RESISTANCE: (100 V): 1G Ω (between terminals)

BOUNCE TIME: 1 ms max.

Environmental

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

Process

SOLDERING: Compatible with lead free reflow soldering process.

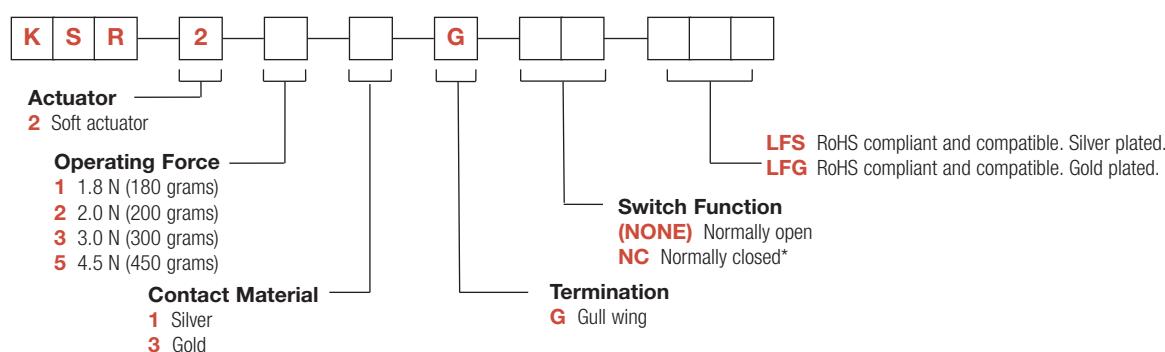
NOTE: Specifications listed above are for switches with standard options.
For information on specific and custom switches, consult Customer Service Center.

How To Order

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

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

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



*Available on KSR223G only.



Dimensions are shown: mm
Specifications and dimensions subject to change

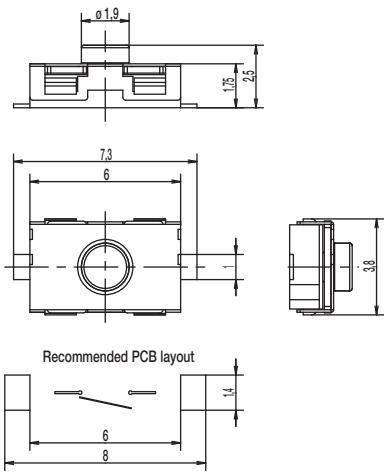
KSR Series Subminiature Tact Switch for SMT

Tactile Switches

KSR

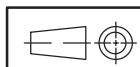
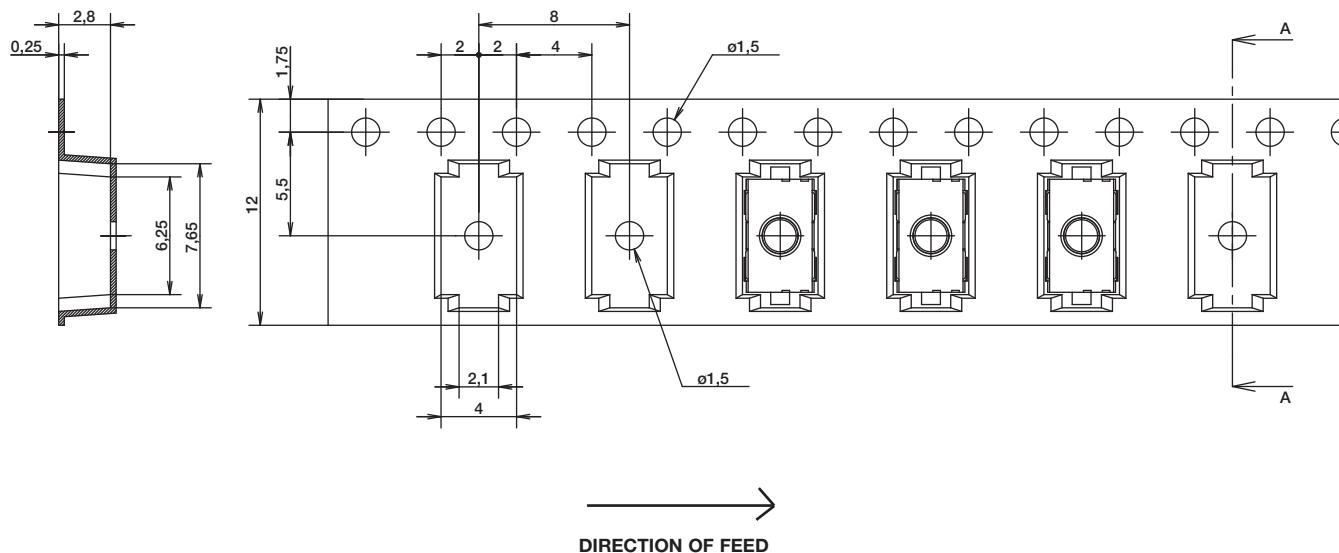


B



Recommended PCB layout

TAPE & REEL



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

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

Features/Benefits

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

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics



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 (mm)
Silver versions			
KSR212G LFS	1,5 < 1,85 (185) < 2,2	200,000	0,25 ± 0,15
KSR222G LFS	1,9 < 2,25 (225) < 2,6	200,000	0,3 ± 0,15
KSR232G LFS	2,25 < 3,00 (300) < 3,75	200,000	0,35 ± 0,15
KSR252G LFS	3,4 < 4,50 (450) < 5,6	200,000	0,5 ± 0,15
Gold versions			
KSR214G LFS	1,5 < 1,85 (185) < 2,2	200,000	0,25 ± 0,15
KSR224G LFS	1,9 < 2,25 (225) < 2,6	200,000	0,3 ± 0,15
KSR234G LFS	2,25 < 3,00 (300) < 3,75	200,000	0,35 ± 0,15
KSR254G LFS	3,4 < 4,50 (450) < 5,6	200,000	0,5 ± 0,15

OVERLOAD: 20 Newtons

Electrical

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

CONTACT RESISTANCE: ≤ 100 m Ω

INSULATION RESISTANCE (100 V): 1 G Ω (between terminals)

BOUNCE TIME: 1 ms max

Environmental

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

Process

SOLDERING: Compatible with lead free reflow soldering process.

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

For information on specific and custom switches, consult Customer Service Center.

Packaging

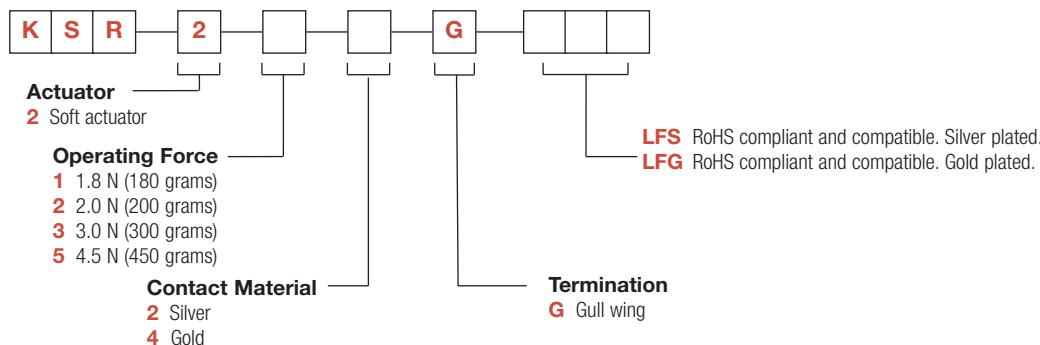
Switches are delivered on continuous tape, in reels of 2,500 pieces.

How To Order

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

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

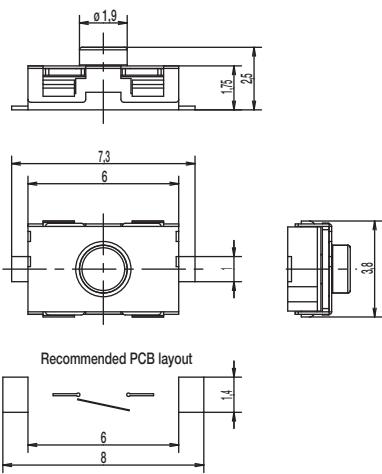
For any part number different from those listed above, please consult your local representative.



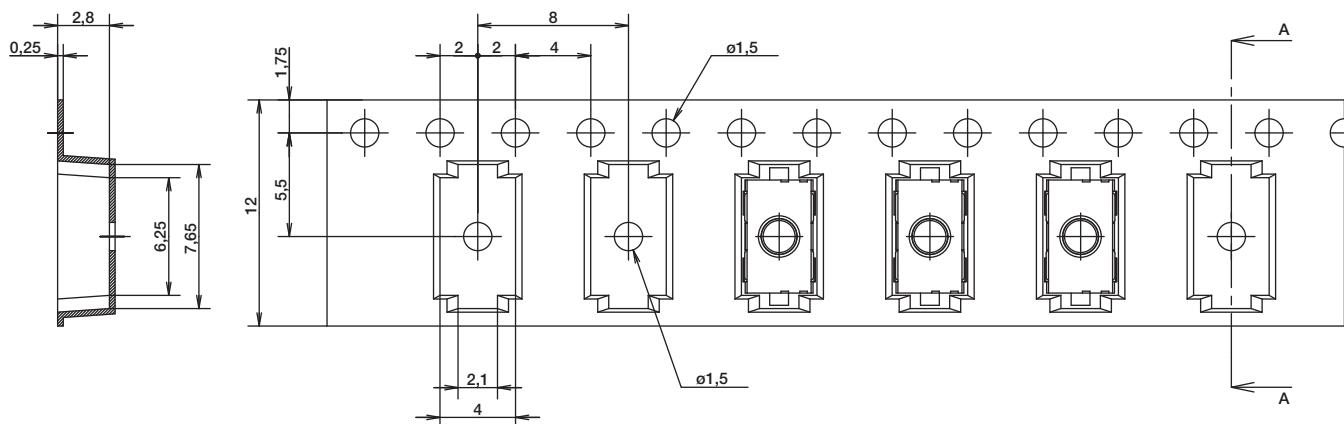
KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

Tactile Switches

KSR



TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change

KSS Series

Subminiature SMT Side Actuated

Features/Benefits

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

Typical Applications

- Cellular phone
- Industrial electronics
- Health diagnostic electronics



B

Tactile Switches

Specification

FUNCTION: momentary action

CONTACT ARRANGEMENT: N.O.

TERMINALS: Gullwing

IP40 sealed

Mechanical

OVERLOAD: 20N

TAUTILE FEELING: 2 and 4N: 25% min.
2.5N: 30% min.

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

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

Electrical

	Silver	Gold
MAXIMUM POWER:	1 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA

DIELECTRIC STRENGTH: ≥ 250 VDC

CONTACT RESISTANCE: < 100 mΩ

INSULATION RESISTANCE (100 VDC): ≥ 10⁹ 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

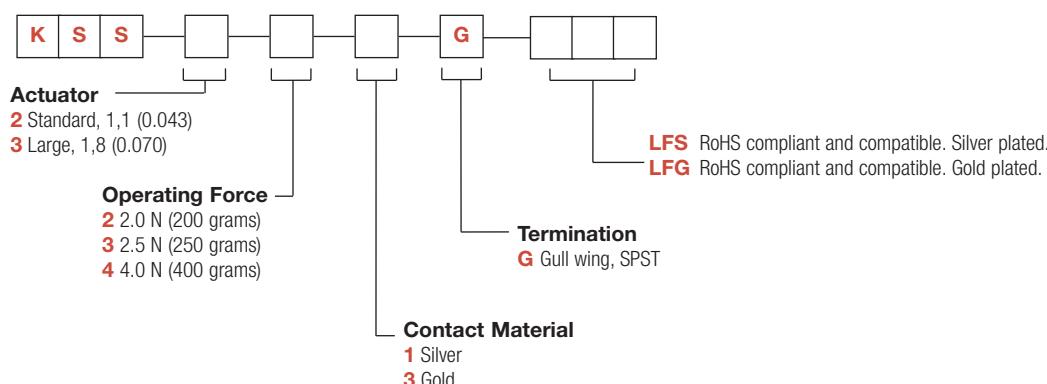
Tape and reels in reels of 3,000 pieces.
External diameter 330mm ± 2mm.

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.



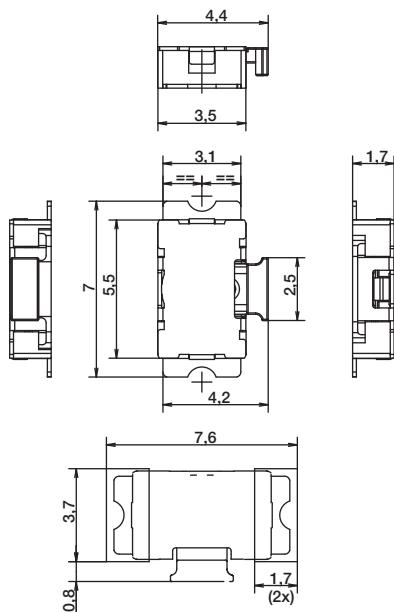
KSS Series

Subminiature SMT Side Actuated

Tactile Switches

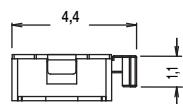
KSS

B

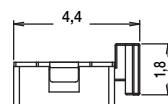


ACTUATOR

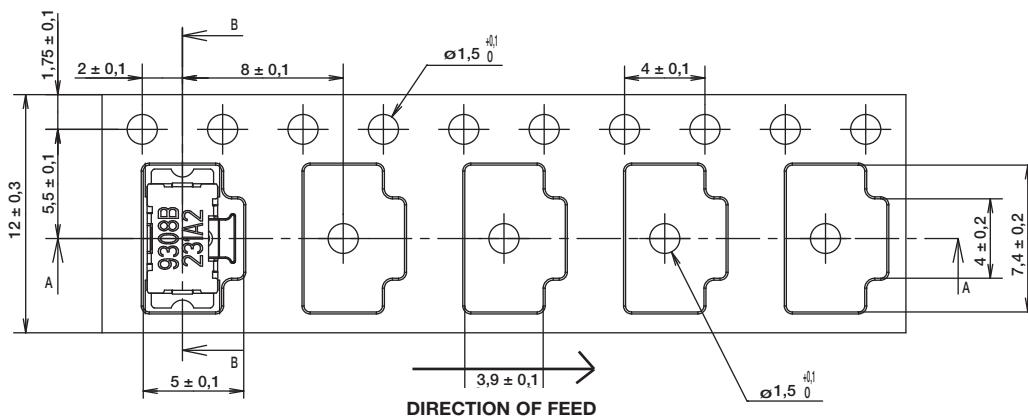
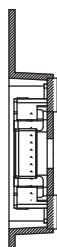
2 STANDARD, 1,1 (0.043)



3 LARGE, 1,8 (0.070)



TAPE & REEL



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

KSC Series

Sealed Tact Switch for SMT

Features/Benefits

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

Typical Applications

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



Specification

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

Liability Limitation

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

Electrical

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

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms

CONTACT RESISTANCE: ≤ 100mΩ

INSULATION RESISTANCE (100 V): ≥ 10M Ω

BOUNCE TIME: ≤ 1 ms

* Ultra low current with 10 µA - 1 VDC version are available upon request for KSC2 and KSC4

Environmental

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

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

Tape and Reel (see series for quantity information)

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

B

Tactile Switches

KSC Product Range

KSC1	KSC2	KSC3	KSC4	KSC5	KSC6	KSC7	KSC8	KSC9	KSC10
Without actuator	Soft actuator	Hard actuator	Soft actuator	Hard actuator	Hard actuator	Soft actuator	Hard actuator	Hard actuator	Soft actuator
H = 2.5 mm	H = 3.5 mm	H = 3.5 mm	H = 5.2 mm	H = 5.6 mm	H = 7.7 mm	H = 4.3 mm	H = 4.9 mm	H = 7.7 mm compatible with button	
IP67	IP67	IP67	IP67	IP50	IP67	IP67	IP67	IP67	IP67



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

C&K

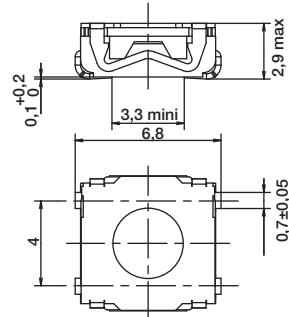
Dimensions are shown: mm
Specifications and dimensions subject to change

KSC Series

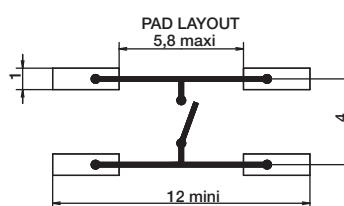
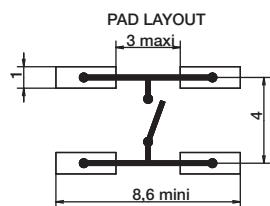
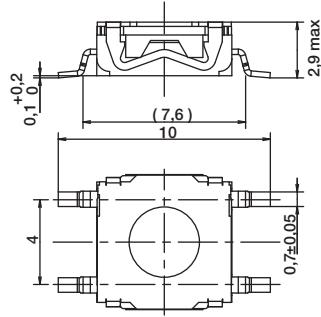
Sealed Tact Switch for SMT

Tactile Switches

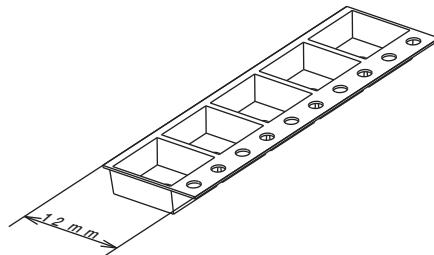
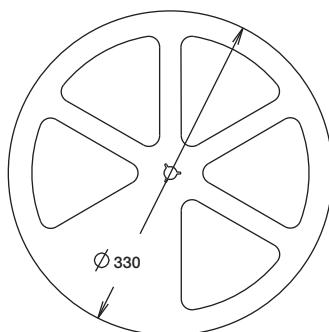
J J BEND



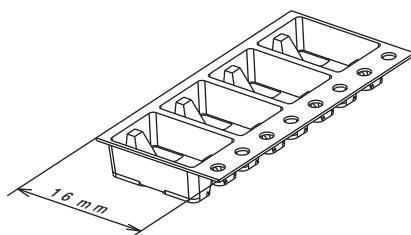
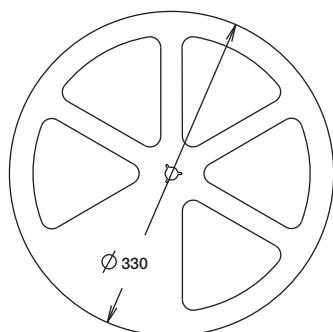
G GULLWING



12 MM



16 MM



12 mm	Pieces	16 mm	Pieces
KSC1J	2,000	KSC1G	2,000
KSC2J	2,000	KSC2G	2,000
KSC3J	2,000	KSC3G	2,000
		KSC4J & G	1,000
		KSC5J & G	1,000
		KSC6J & G	750
		KSC7J & G	1,000
		KSC8J & G	1,000
		KSC9J & G	750
		KSC10J & G	1,000



Dimensions are shown: mm
Specifications and dimensions subject to change

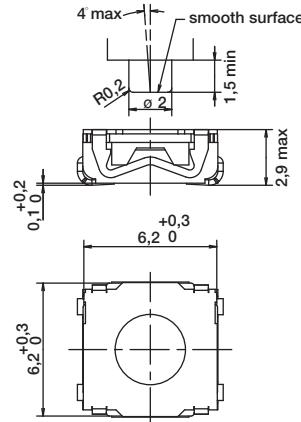
KSC1 Series

Sealed Tact Switch for SMT

KSC1 without actuator 2,5 mm high



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



Packaging

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

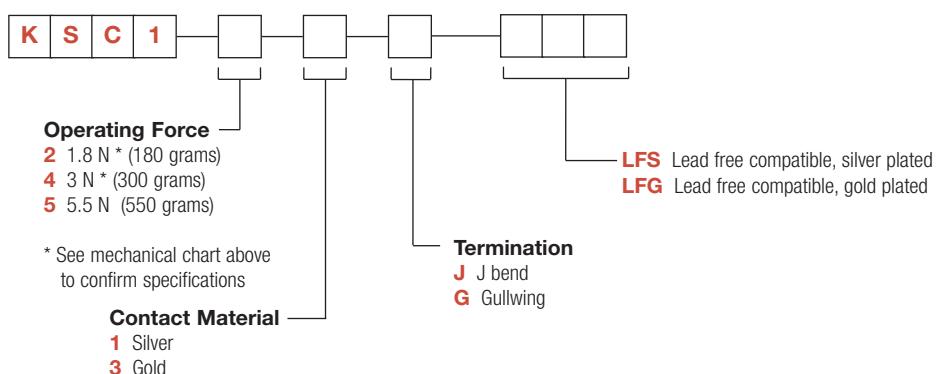

B

Tactile Switches

How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change



KSC2 Series

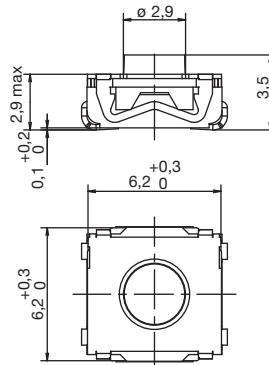
Sealed Tact Switch for SMT

Tactile Switches

B



Type	Operating force FA (Newtons)	Operating life (operations)	Travel (mm)
KSC201	1.6 ± 0.6	5,000,000	0.3 ± 0.2
KSC221	2 ± 0.5	500,000	0.35 + 0.3/- 0.1
KSC222	2 ± 0.5	1,000,000	0.35 ± 0.15
KSC241	3.5 ± 0.9	300,000	0.5 ± 0.2
KSC251	5.55 ± 1.45	300,000	0.5 ± 0.2
KSC231 SPD	3.5 ± 0.9	300,000	0.5 ± 0.2
KSC241 SPD	3.55 ± 0.9	300,000	0.5 ± 0.2
KSC251 SPD	6.2 ± 1.55	100,000	0.6 ± 0.2



Packaging

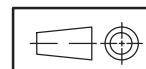
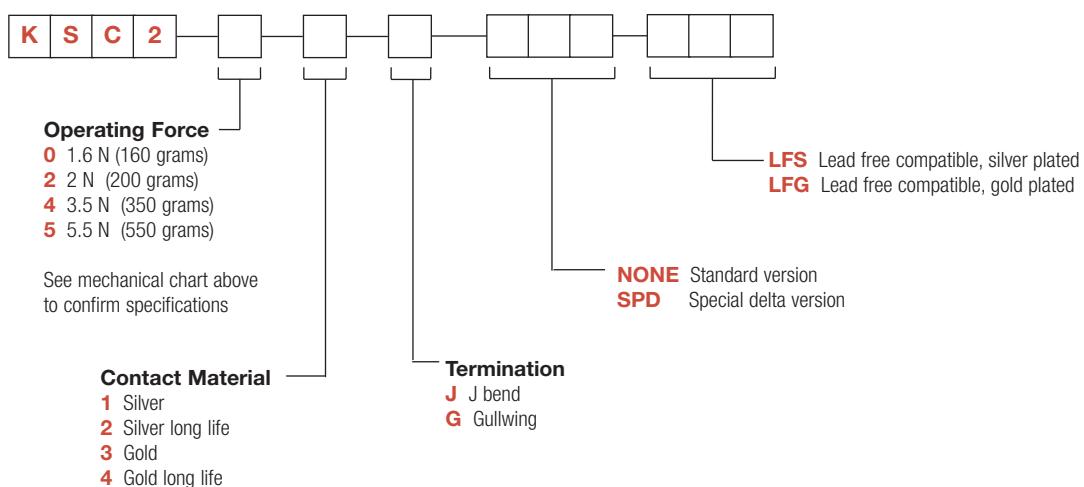
Switches delivered on continuous tape & reels of 2,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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

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



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

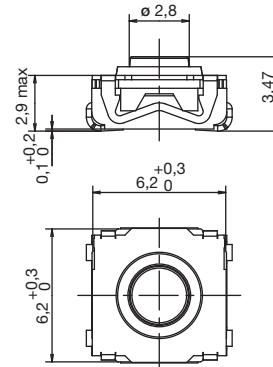
KSC3 Series

Sealed Tact Switch for SMT

KSC3 hard actuator 3,5 mm high



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



Packaging

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

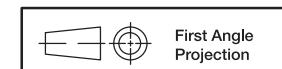
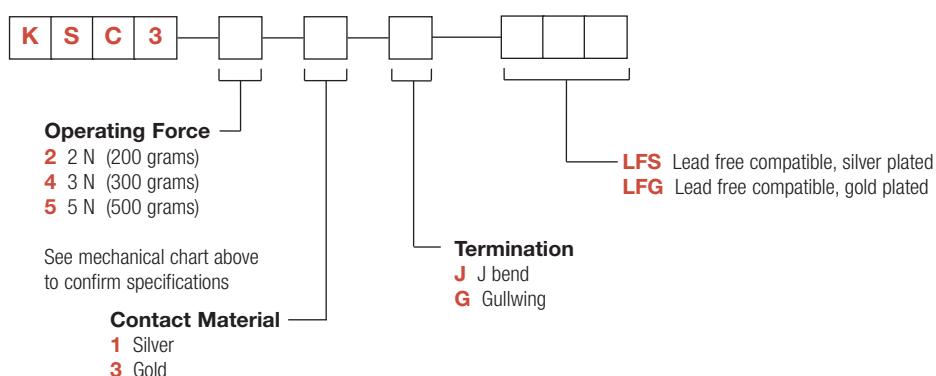

B

Tactile Switches

How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

KSC4 Series

Sealed Tact Switch for SMT

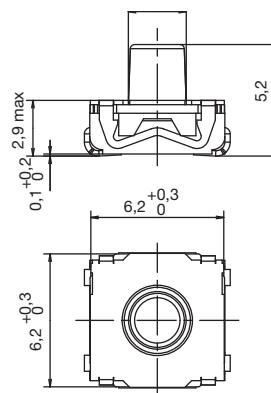
Tactile Switches

B



KSC4 soft actuator 5,2 mm high

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



Packaging

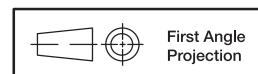
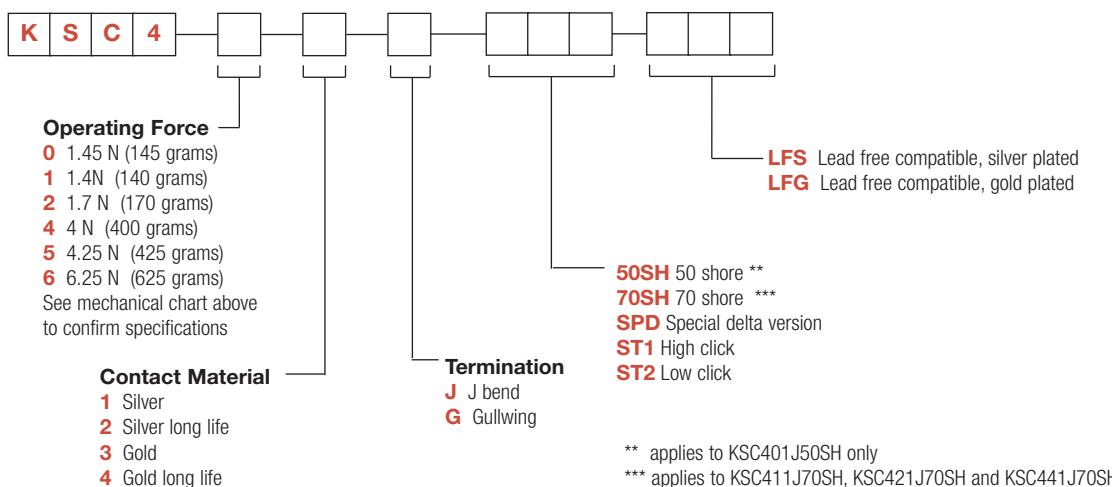
Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

KSC5 Series

Tact Switch with Rocker Option for SMT

KSC5 hard actuator 5,6 mm high



Type	Operating force axial FA N (grams)	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
KSC521	2 ± 0.5	1.2 - 2.6	0.25 ± 0.15	0.5 ± 0.25	100,000	10,000
KSC541	3 ± 0.75	1.8 - 3.8	0.25 ± 0.15	0.5 ± 0.25	100,000	10,000

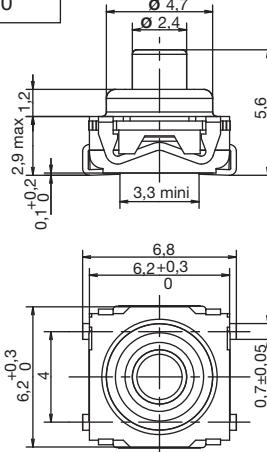


B

Tactile Switches

Packaging

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

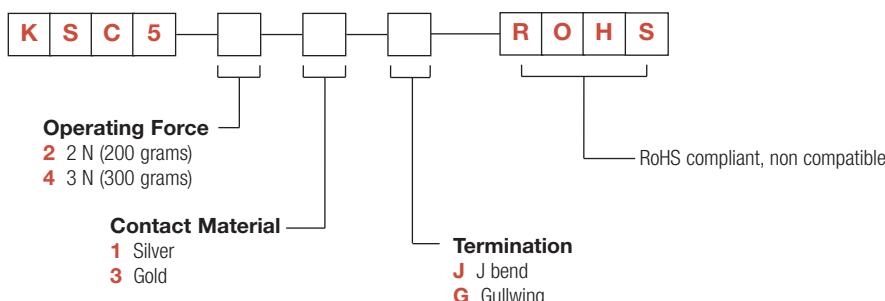


How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

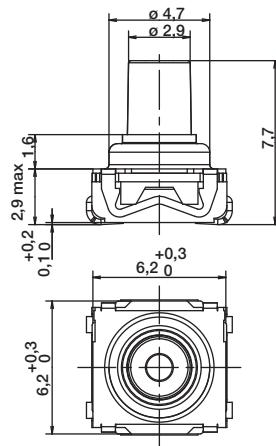
KSC6 Series

Sealed Tact Switch for SMT

KSC6 hard actuator 7,7 mm high



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



Packaging

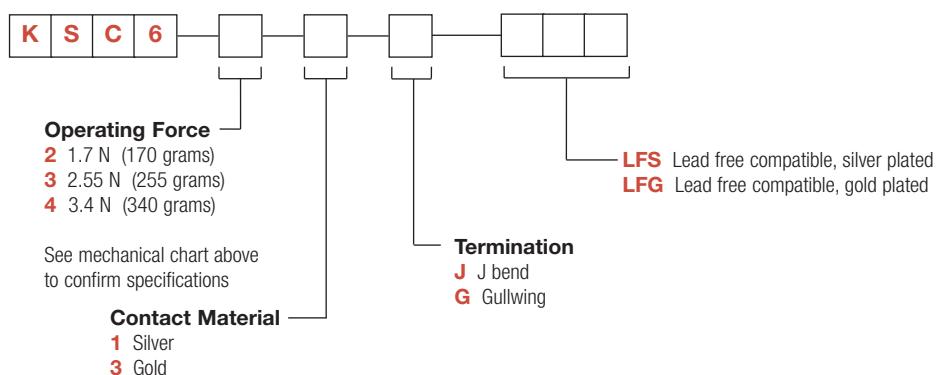
Switches delivered on continuous tape & reels of 750 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

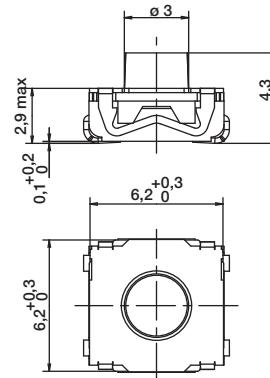
KSC7 Series

Tact Switch with Rocker Option for SMT

KSC7 soft actuator 4,3 mm high



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



Packaging

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



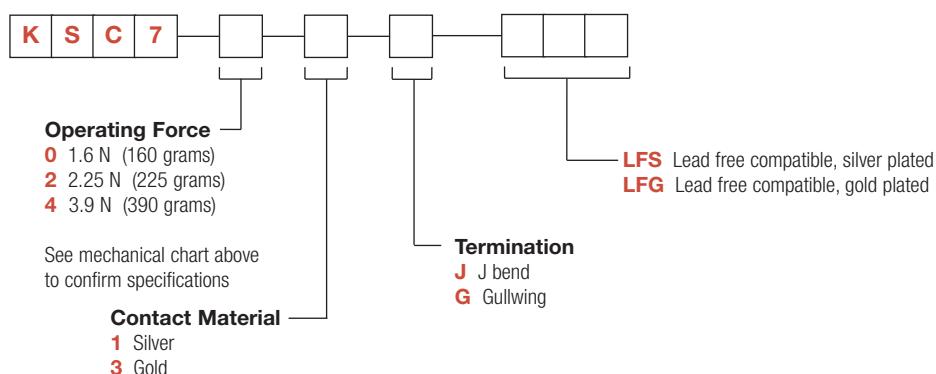
B

Tactile Switches

How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change



KSC8 Series

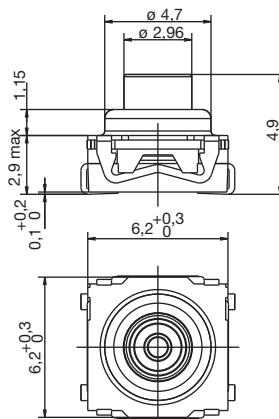
Sealed Tact Switch for SMT

KSC8 hard actuator 4,9 mm high



B

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



Packaging

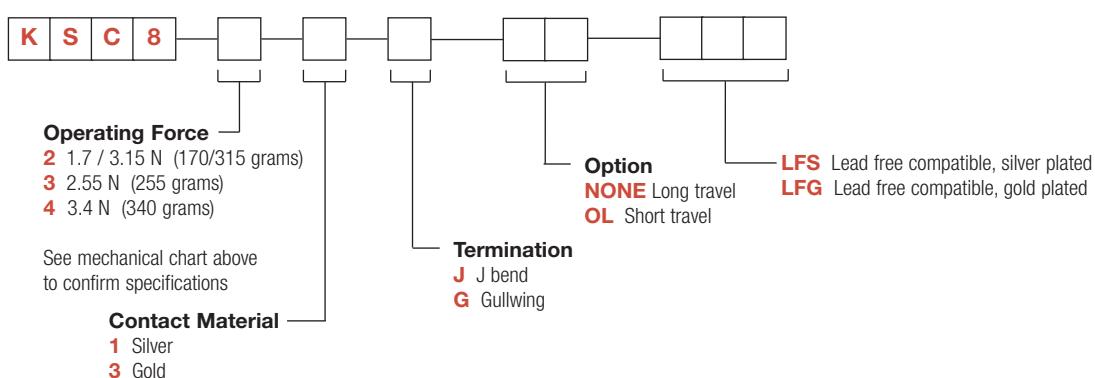
Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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

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



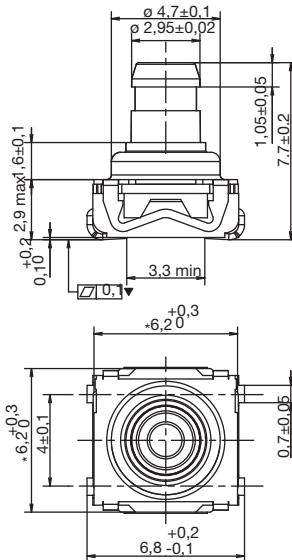
Dimensions are shown: mm
Specifications and dimensions subject to change

KSC9 Series Sealed Tact Switches for SMT

KSC9 hard actuator 7,7 mm high



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



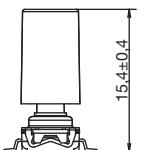
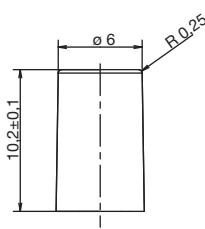
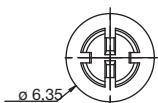
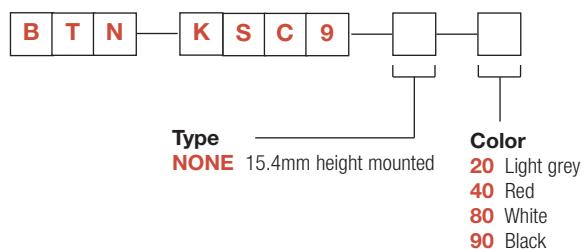
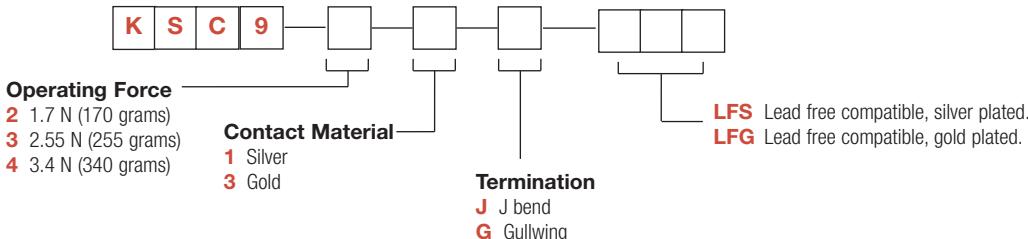
Packaging

Switches delivered on continuous tape & reels of 750 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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



SWITCH WITH CAP



Dimensions are shown: mm
Specifications and dimensions subject to change

KSC10 Series

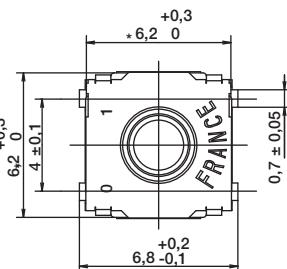
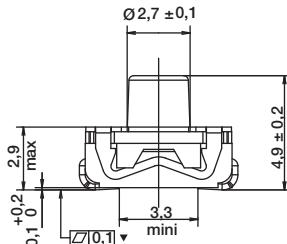
Sealed Tact Switches for SMT

KSC10 soft actuator 4,9 mm high



B

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



Tactile Switches

Packaging

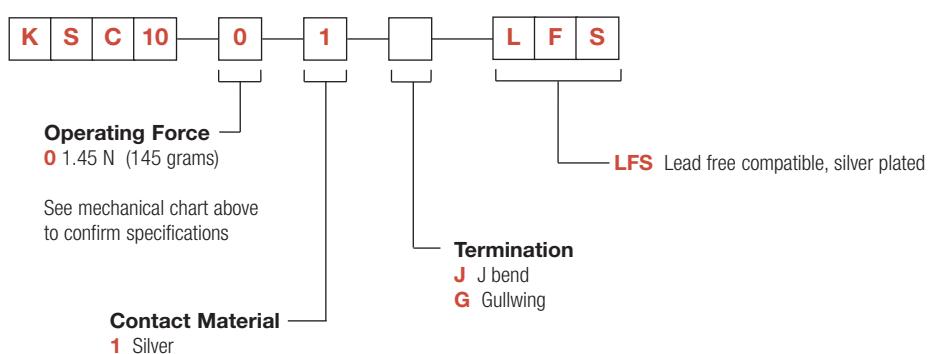
Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481 / IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

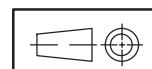
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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

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



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



First Angle Projection

*Dimensions are shown: mm
Specifications and dimensions subject to change*

KSC4V2 Series Side Actuated Sealed Tact Switch

Features/Benefits

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

Typical Applications

- **Automotive**
 - **Industrial electronics**
 - **Network equipment**
 - **Telecommunications**



Specification

FUNCTION: momentary action

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

CONTACT AND
TERMINAL SITE

MINALS:
2 pin in paste signal terminals
3 SMD ground terminals

Mechanical

Type	Force (N)	Operating Life (operations)	Travel (mm)
KSC441V2SPDLFS	3.5 ± 1.0	300,000	0.7 ± 0.2
KSC421V270SHLFS	1.55 ± 0.45	300,000	0.5 ± 0.2

NOTE: Basic version is based on KSC441V2 SPDEITA | ES.

Other configurations of haptics are available upon demand.

MISI ISE OVERLOAD: 40N with back support

SHEAR FORCE:10N without back support

Electrical

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

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms

CONTACT RESISTANCE: $\leq 100 \text{ m}\Omega$

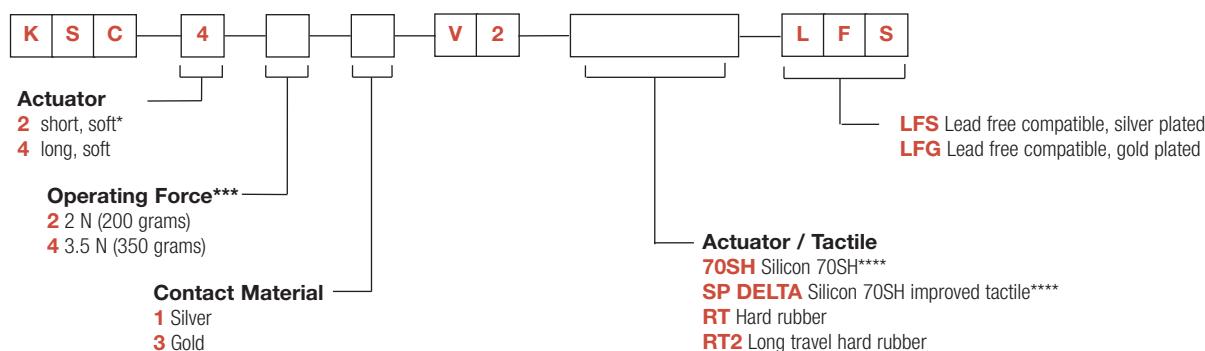
INSULATION RESISTANCE (100 V, initial stage): > 10⁹ Ω

INSULATION RESISTANCE
BOUNCE TIME: < 1 ms

How To Order

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

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

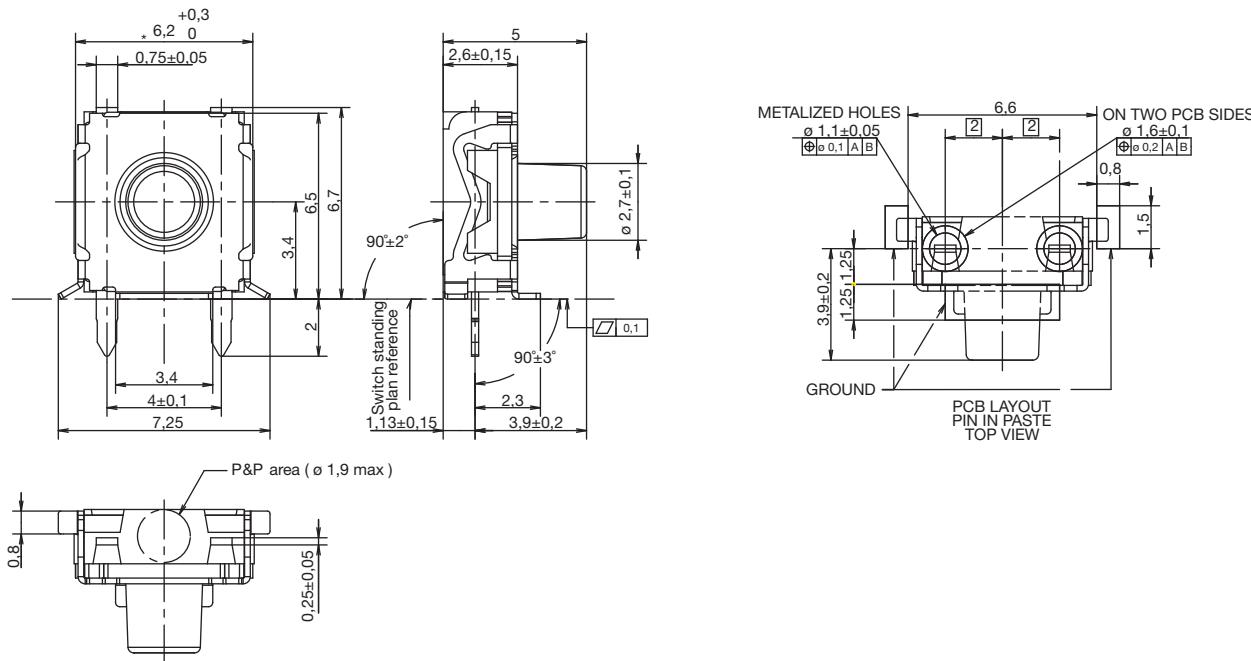


* KSC2 version available upon demand
*** Force available upon demand (variant version)
**** Available for KSC4 only

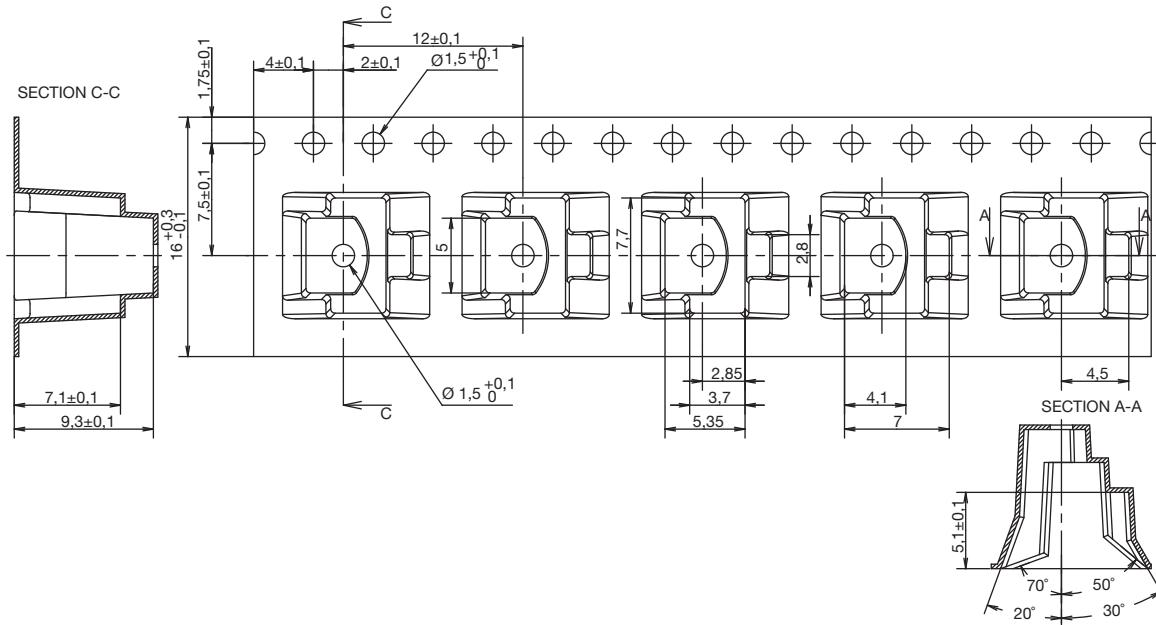
KSC4V2 Series

Side Actuated Sealed Tact Switch

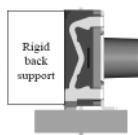
Tactile Switches



TAPE AND REEL



INTEGRATION



Dimensions are shown: mm
Specifications and dimensions subject to change

KSE Series Low Profile Tact Switch

Features/Benefits

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

Typical Applications

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



B

Tactile Switches

Specification

FUNCTION: momentary action

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

TERMINALS: J bend & Gullwing type for SMT

Mechanical

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

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

Packaging

In reels of 2,000 pieces

Dimensions of reels according to EIA RS481 or IEC 2863.

External diameter 330 mm ± 2 mm.

Electrical

MAXIMUM POWER: 1 VA

MINIMUM/MAXIMUM VOLTAGE: 20 mV / 32 VDC

MINIMUM/MAXIMUM CURRENT: 1 mA / 50 mA

DIELECTRIC STRENGTH: (50 Hz, 1 min.): ≥ 250 V

CONTACT RESISTANCE: ≤ 100 mΩ

INSULATION RESISTANCE: (100 V): ≥ 10⁹ Ω

BOUNCE TIME: ≤ 1 ms

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

STORAGE TEMPERATURE: -55°C to 85°C

Process

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

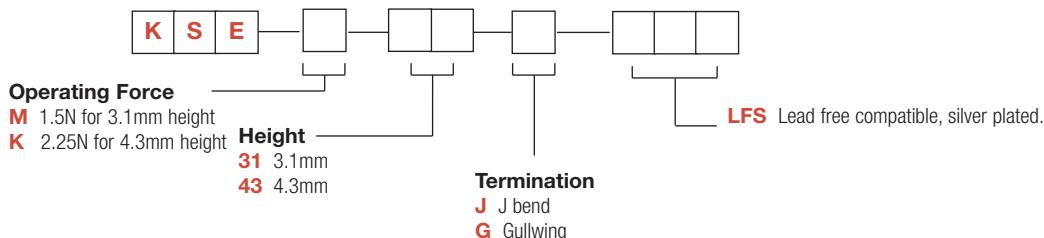
- Cleaning according to typical washing processes.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

NOTE:

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

How To Order

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

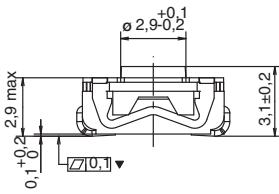


KSE Series

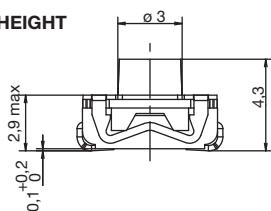
Low Profile Tact Switch

HEIGHT

31 3.1 MM HEIGHT

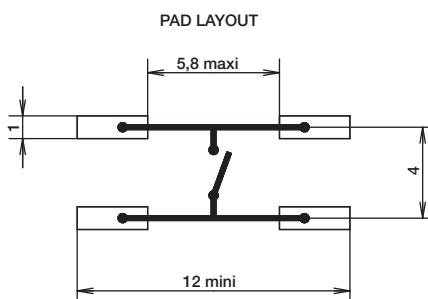
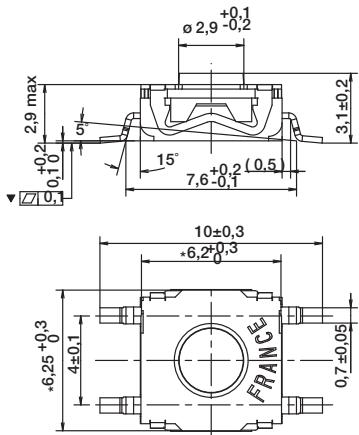


43 4.3 MM HEIGHT

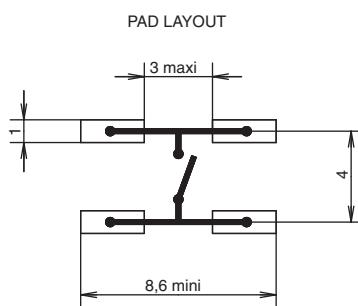
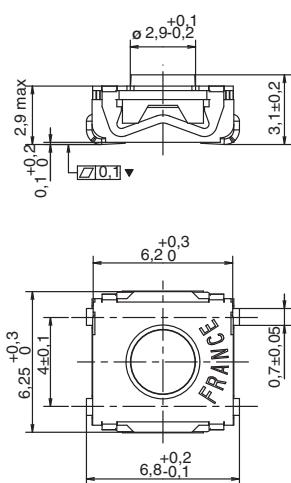


TERMINATION

G GULLWING



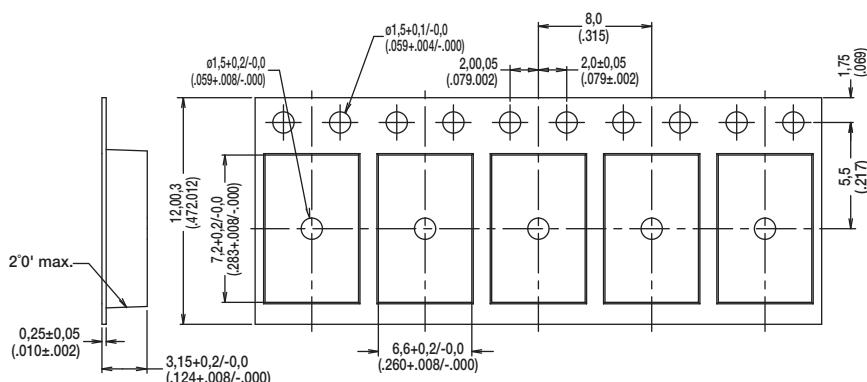
J J BEND



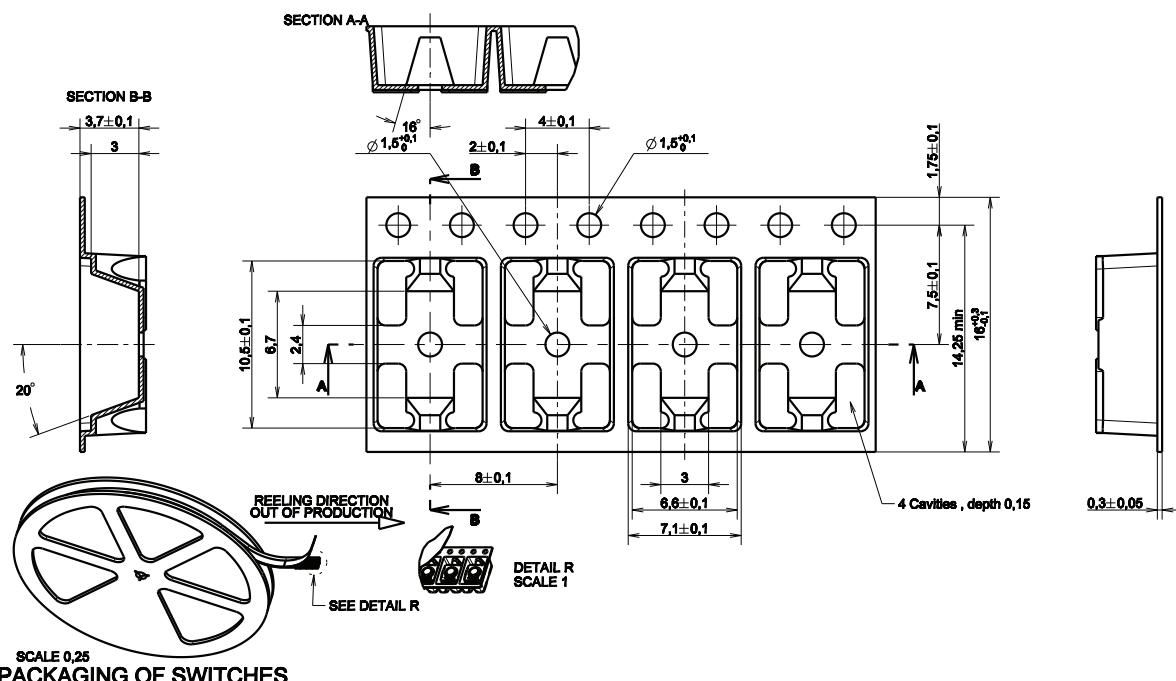
KSE Series Low Profile Tact Switch

TAPE & REEL

12 mm height



16 mm height



B

Tactile Switches

KT Series

Full SMT Top & Side Actuated Sealed Tact Switch



B

Tactile Switches

Features/Benefits

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

Typical Applications

- Telecommunications
- Computer products
- Instrumentation
- Power supply

Specification

CONTACT ARRANGEMENT: SPST, N.O.

TERMINALS: SMT termination

Electrical

CONTACT RATING: 1.0 VA max. @ 32 V AC or DC max.

ELECTRICAL & MECHANICAL LIFE: 100,000 make-and-break cycles at full load.

DIELECTRIC STRENGTH: 250 Vrms min. @ sea level.

CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: 10⁹ Ω min.

Environmental

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

Process

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

DEGREE OF PROTECTION: IP57; protection against harmful dust deposits, full-scale voltage protection.

Packaging

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

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

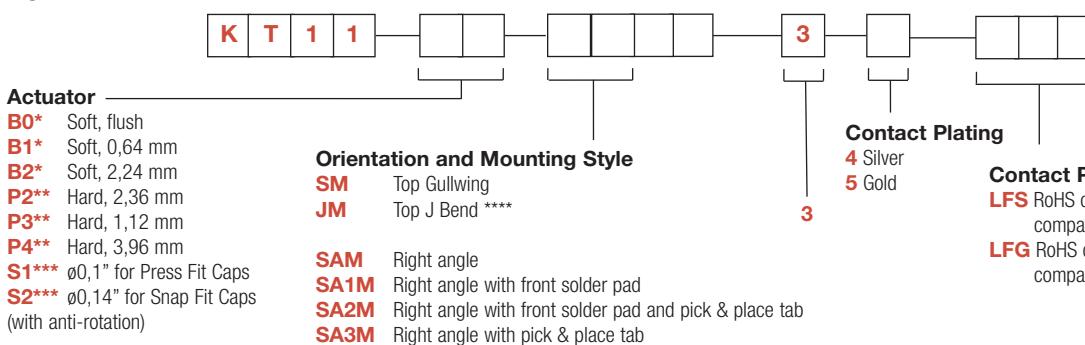
How To Order

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

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

SWITCH



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

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

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

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

BUTTON

To order buttons in bulk



Button Color

- 90** Black
- 80** Ivory (natural)
- 40** Red



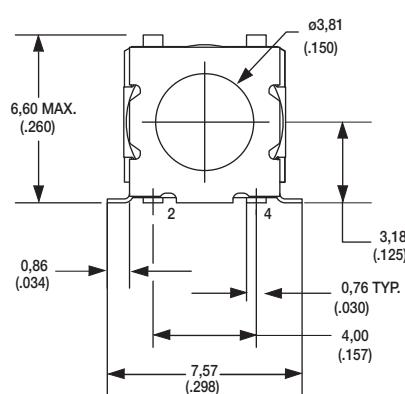
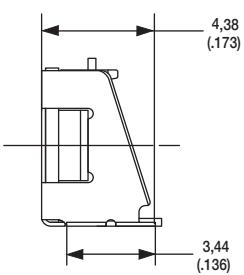
Dimensions are shown: mm
Specifications and dimensions subject to change

KT Series

Full SMT Top & Side Actuated Sealed Tact Switch

SERIES

KT11

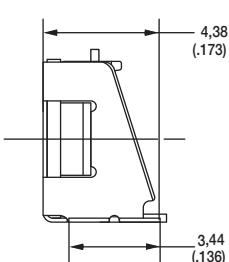


B

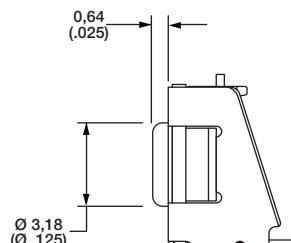
Tactile Switches

ACTUATOR

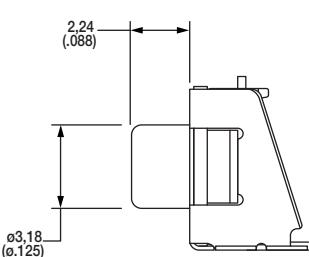
B0 SOFT, FLUSH*



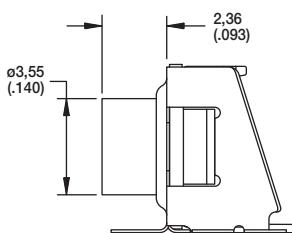
B1 SOFT, 0,64 mm*



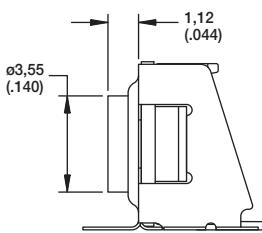
B2 SOFT, 2,24 mm*



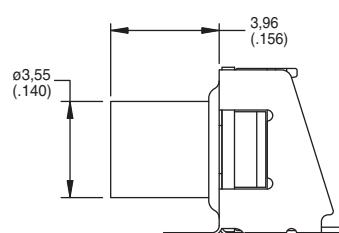
P2 HARD, 2,36 mm



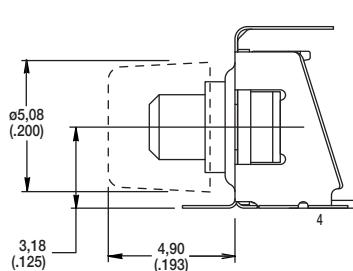
P3 HARD, 1,12 mm



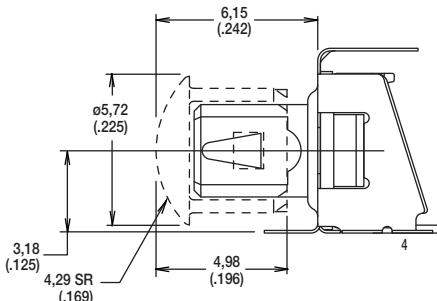
P4 HARD, 3,96 mm**



S1 Ø0,1" FOR PRESS FIT CAPS***



S2 Ø0,14" FOR SNAP FIT CAPS***

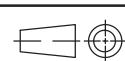


* B0, B1 & B2 available with A, A1 & A3 mounting bracket only.

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

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

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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

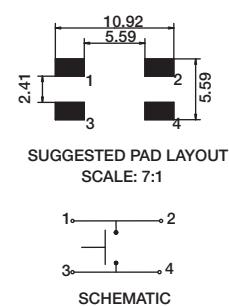
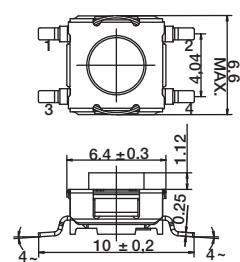
C&K

KT Series

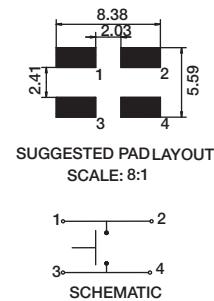
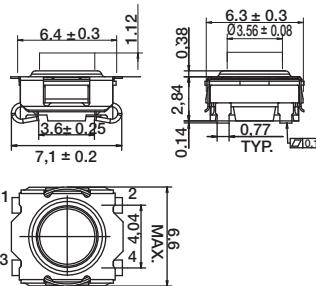
Full SMT Top & Side Actuated Sealed Tact Switch

ORIENTATION & MOUNTING STYLE

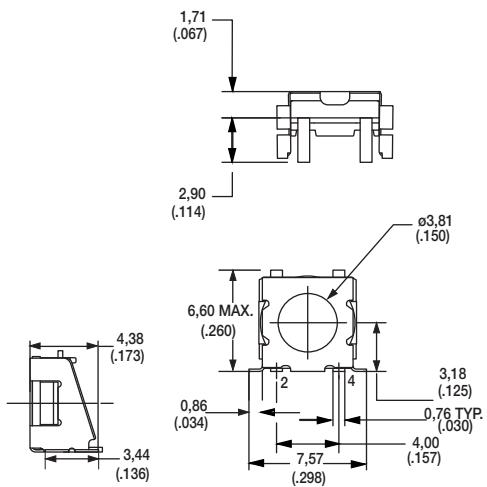
SM TOP GULLWING



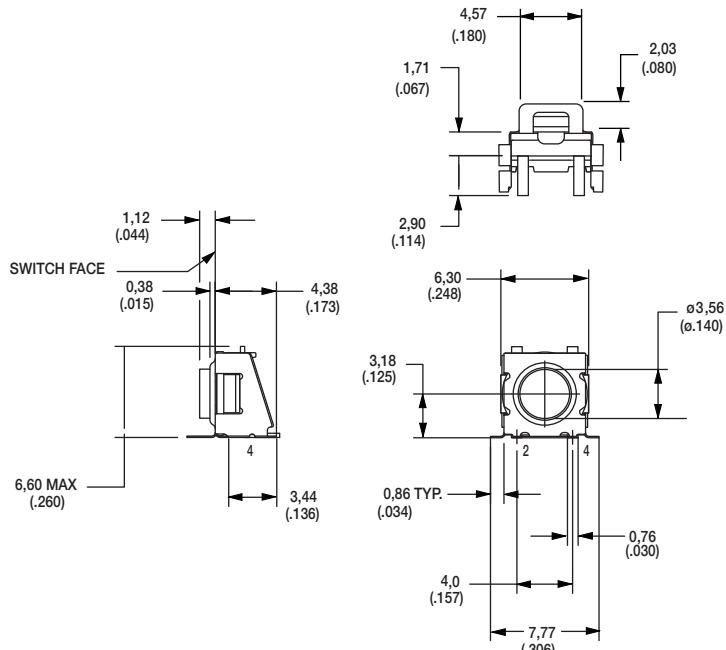
JM TOP J BEND



SAM RIGHT ANGLE



SA1M RIGHT ANGLE WITH FRONT SOLDER PAD



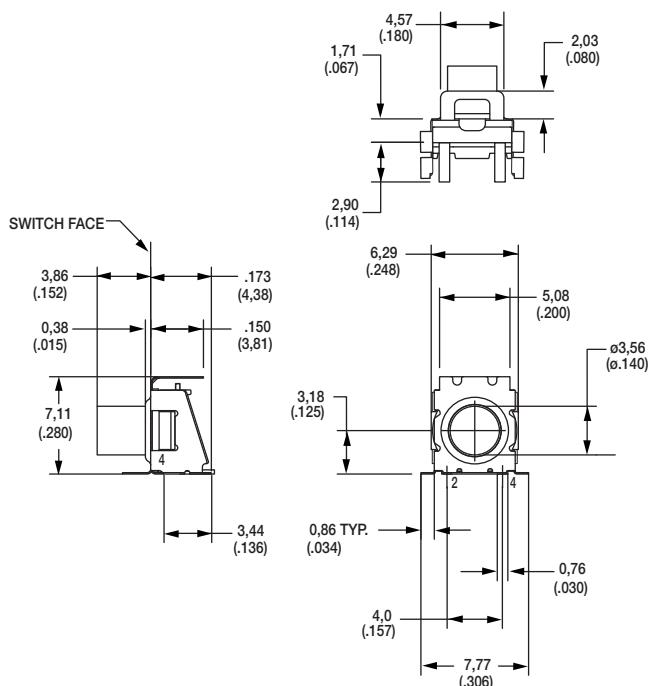
First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

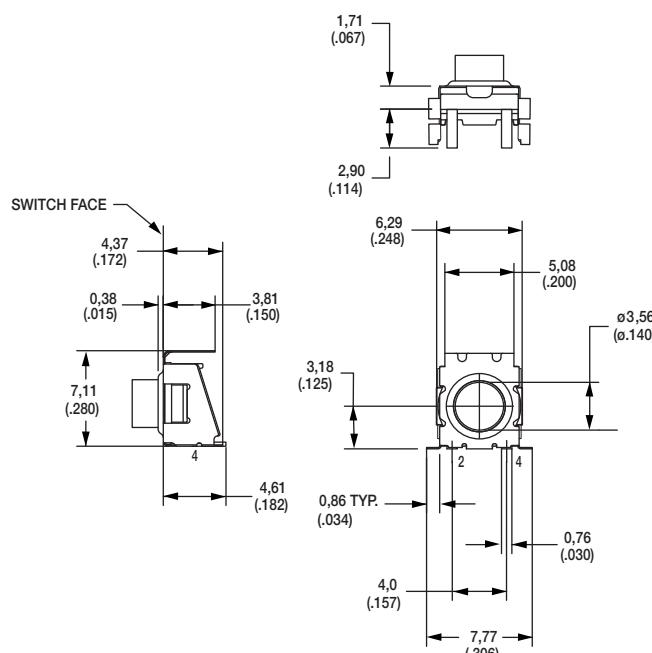
KT Series

Full SMT Top & Side Actuated Sealed Tact Switch

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



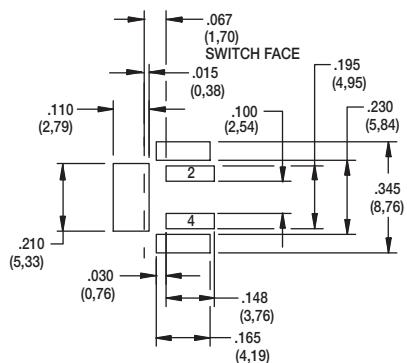
SA3M RIGHT ANGLE WITH PICK & PLACE TAB



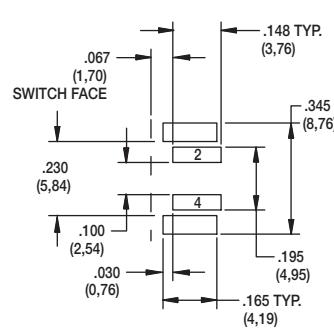
B

Tactile Switches

PAD LAYOUT
SA1M & SA2M MOUNTING BRACKET



PAD LAYOUT
SAM & SA3M MOUNTING BRACKET



2 —————●————— 4

SCHEMATIC



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KT Series

Full SMT Top & Side Actuated Sealed Tact Switch

BUTTON

BUTTON

To order buttons in bulk



B

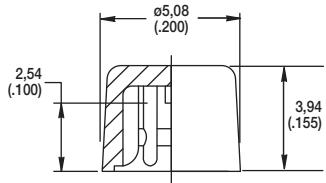
Tactile Switches

02 PRESS FIT

PART NUMBER	Internal Part Number	Button Color
BTN KT11 02 80	5081 01000	Ivory (Natural)
BTN KT11 02 90	5081 02000	Black
BTN KT11 02 40	5081 03000	Red

Materials: Nylon

Finish: Gloss

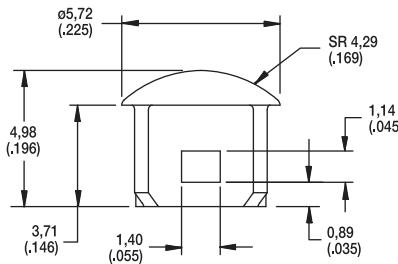


03 SNAP FIT, HIGH TEMPERATURE

PART NUMBER	Internal Part Number	Button Color
BTN KT11 03 80	685B 01000	Ivory (Natural)
BTN KT11 03 90	685B 02000	Black

Materials: Nylon

Finish: Gloss





B

Tactile Switches

Features

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

Typical Applications

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



Specification

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

Electrical

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

Mechanical

Type	Operating force FA' Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
K5AT WH 43GP	4.0 (400)	100,000	0,5 (0,8)

¹ Tolerances of operating force FA is ± 25%.

Packaging

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

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

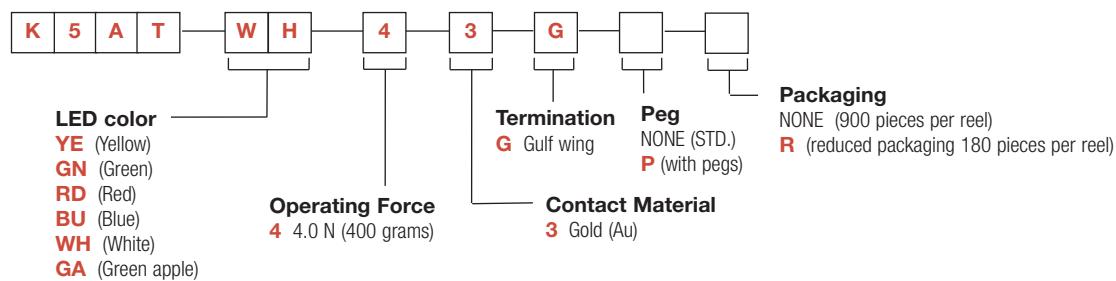
SOLDERING: Compatible with the lead free soldering profile.
 No washing

Materials

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

How To Order

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

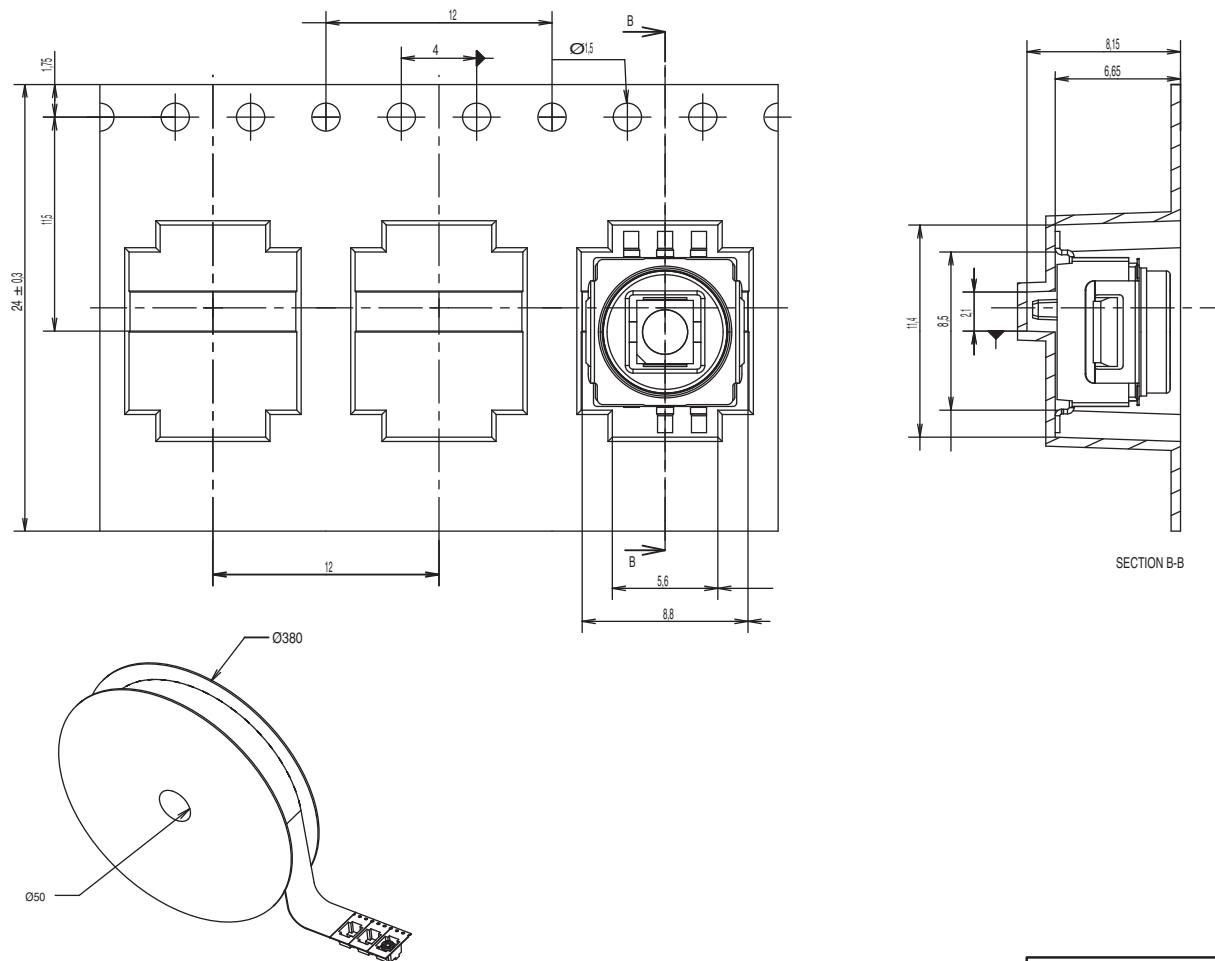
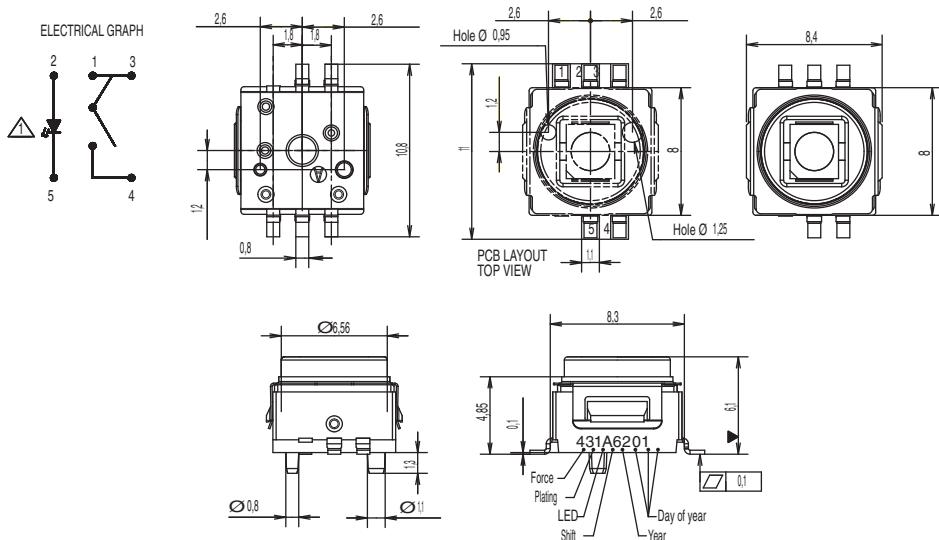


K5AT Illuminated SMT Tact Switch

K5AT

Tactile Switches

B



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

Lighted SMT Tact Switch with Rugged LED Mounting Process



B

Tactile Switches

Features

- LED assembly without soldering
- Various LED options
- No light perturbation
- Sound haptic
- Various climatic classes

Typical Applications

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



Specification

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

Mechanical

Type	Actuation Force (N)	Operating Life (operations)	Total Travel (mm)
K8xx41G LFS	4.0	300,000	0.45±0.15

Tolerances on actuation force is ± 0.25%.

SEALING LEVEL: IP40

Illumination Colors

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

Packaging

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

Electrical

	Silver	Gold
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	0.1 mA
DIELECTRIC STRENGTH:	(50 Hz, 1 min.) ≥ 250 Vrms	
CONTACT RESISTANCE:	< 100mΩ	
INSULATION RESISTANCE:	(100 V, initial stage) > 10 ⁹ Ω	
BOUNCE TIME:	< 10 ms	

Environmental

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

Process

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

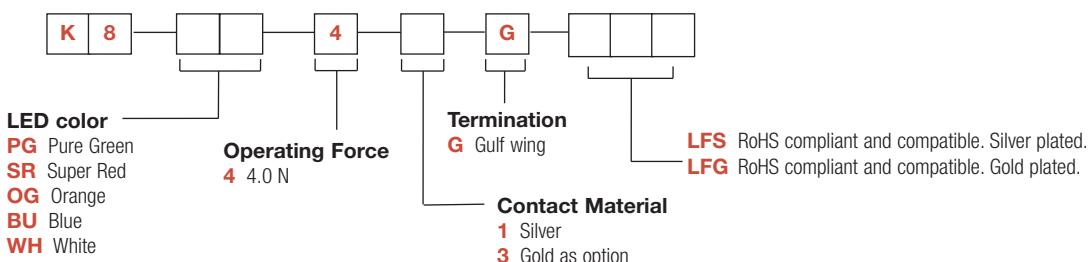
NOTE:

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

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

How To Order

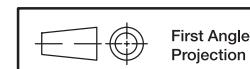
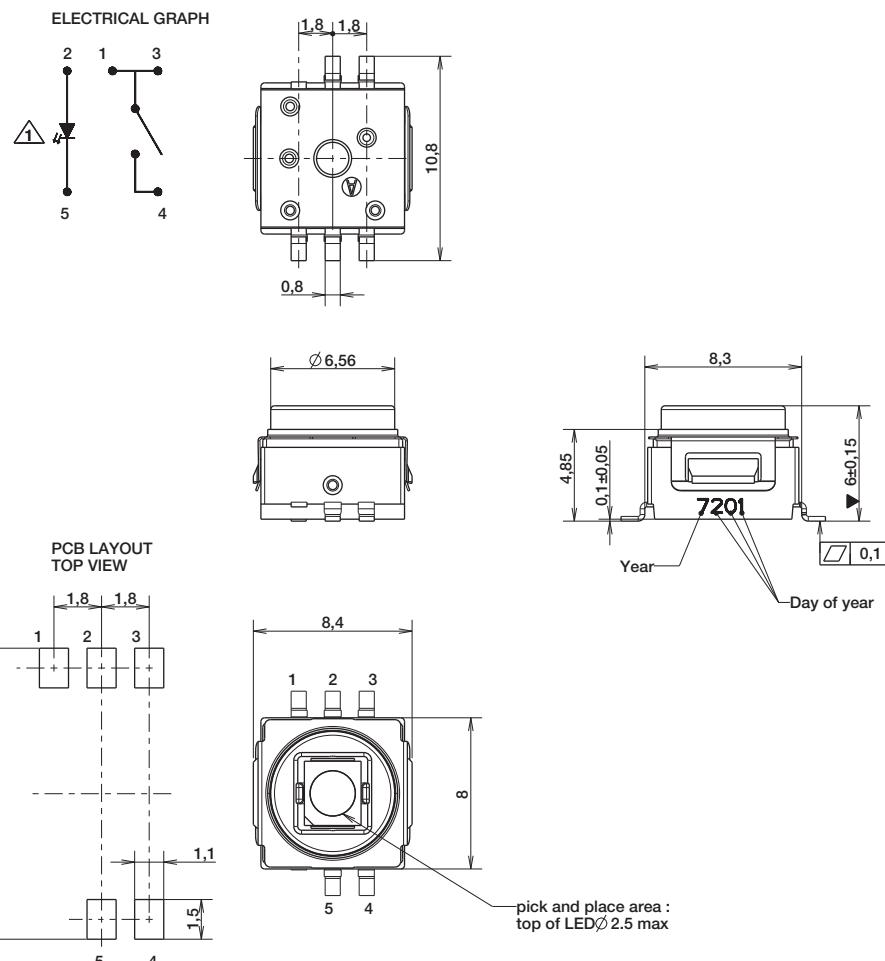
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



K8

Lighted SMT Tact Switch with Rugged LED Mounting Process

PART NUMBER	REF LED	EMITTED COLOR	LUMINOUS INTENSITY (mcd) If = 20 mA		CHROMATICITY COORDINATES OR PEAK WAVE LENGTH (typ) If = 20 mA		FORWARD VOLTAGE V If = 20 MA	
			min	typ	X	Y	min	max
K8WH41G	LW T67C-S2U1-5K8L	WHITE	224	560	0,33	0,33	3	4.1
K8BU41G	LB T67C-P2R1-35	BLUE	56	140	465 nm		3	4.1
K8PG41G	LP T676-L1M2-25	PURE GREEN	11.2	28	562 nm		1.8	2.4
K8SR41G	LP T676-Q1R2-1	SUPER RED	71	180	645 nm		1.8	2.3
K8OG41G	LO T676-R1S2-24	ORANGE	112	280	610 nm		1.85	2.35



Dimensions are shown: mm
Specifications and dimensions subject to change

K8

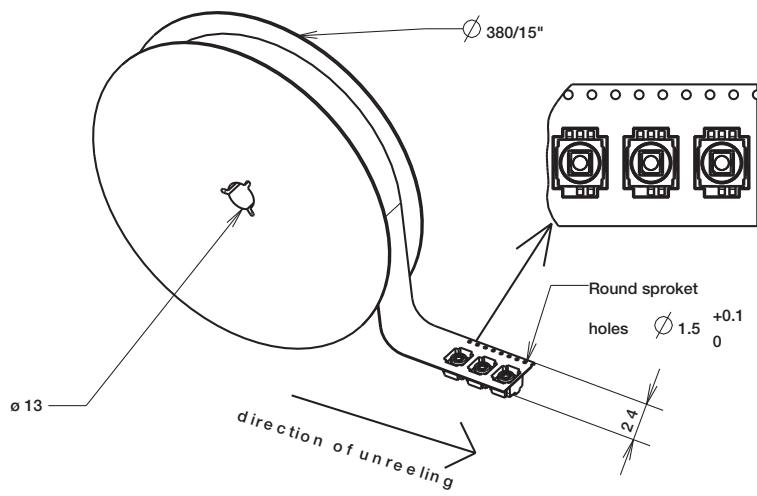
Lighted SMT Tact Switch with Rugged LED Mounting Process

TAPE & REEL



B

Tactile Switches



C&K

Dimensions are shown: mm
Specifications and dimensions subject to change

K5V Illuminated 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

Specification

FUNCTION: momentary action

CONTACT ARRANGEMENT: Normally Open + Normally Closed

TERMINALS:

THT: Through hole terminals with positioning pegs

SMT: Surface mount terminals with positioning pegs

PM: Panel mount solder terminals with wire hole

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

Mechanical

Version	Operating force FA ¹ Newtons (grams)	Operating life (operations)	Travel (total travel) mm(mm)
THT, SMT, PM	4.0 (400)	25,000	1.2 (2.4)

¹ Tolerances of operating force FA is ± 25%.

Packaging

THT:

60 pieces per tray; 1800 pieces per box

SMT:

330 pieces per reel (reel ø 360mm); 1320 pieces per box

PM:

60 pieces per tray; 2100 pieces per box

Process

SMT

Soldering: Compatible with the lead free soldering profile
No washing

THT

Soldering: Compatible with the lead free soldering profile
No washing

PM

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

Materials

LEAD FREE

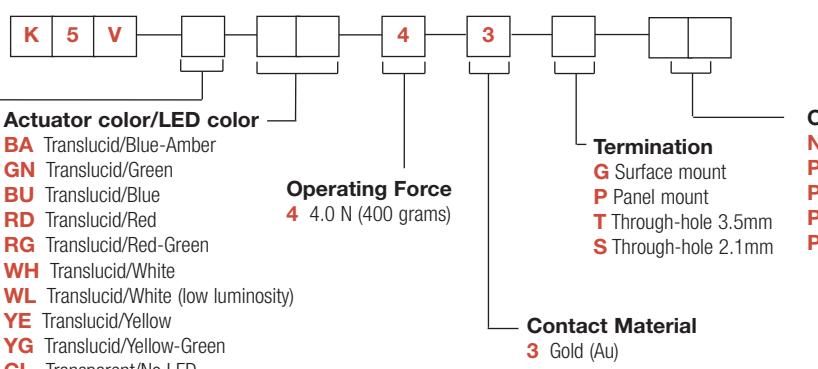
CONTACTS: Au over Ni

SOLDERING: Au over Ni

HOUSING: Thermoplastic UL94 V0

How To Order

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

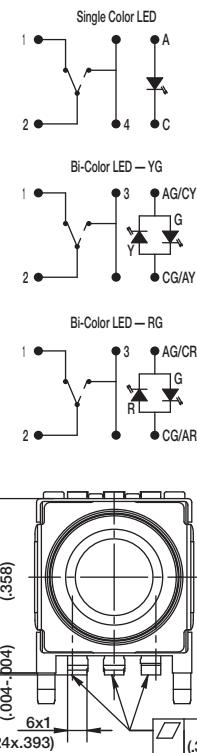
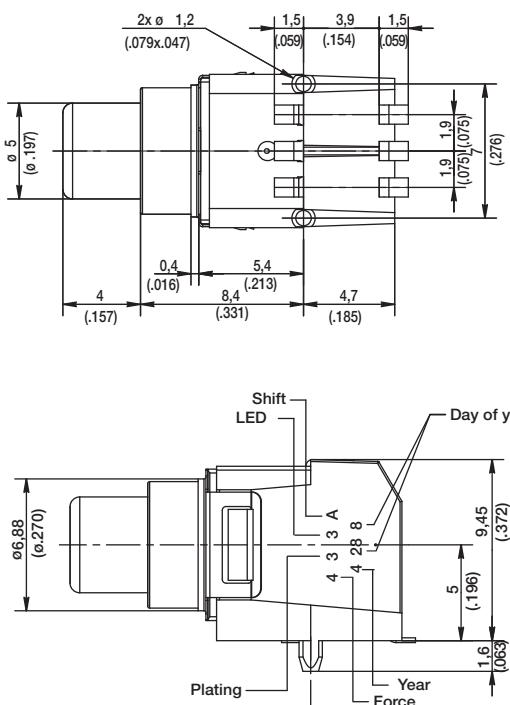


Option

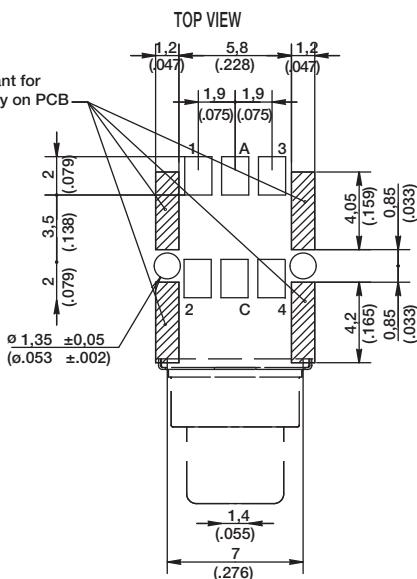
- NONE** No option
- P3** Terminal 3 is cut
- P4** Terminal 4 is cut
- P13** Terminal 1 & 3 is cut
- P14** Terminal 1 & 4 is cut

K5V Illuminated Tact Switch

K5V SMT

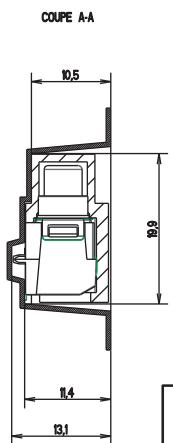
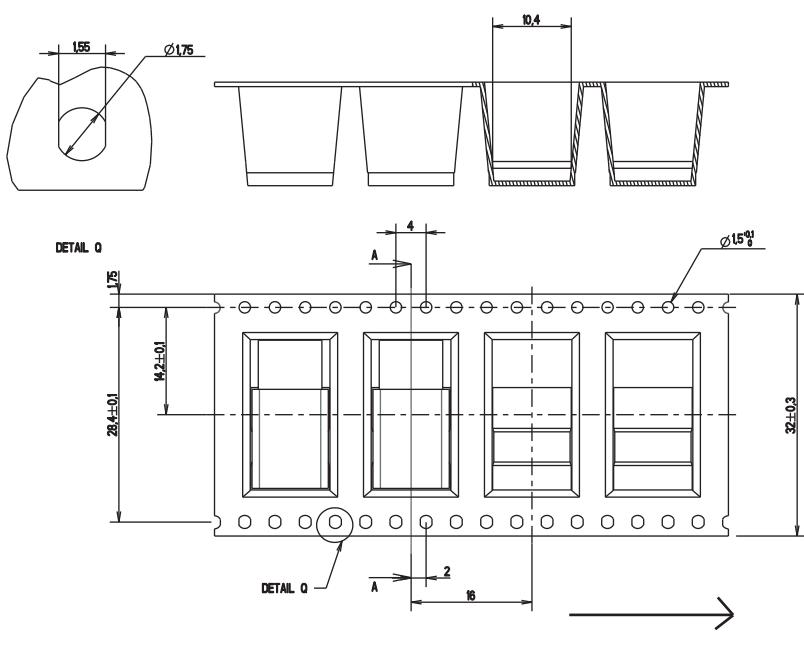


RECOMMENDED PCB LAYOUT (WITH HOLES)



Tactile Switches

TAPE & REEL



Direction of feed

*Dimensions are shown: mm
Specifications and dimensions subject to change*

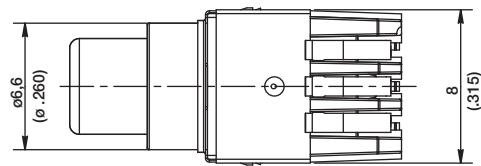
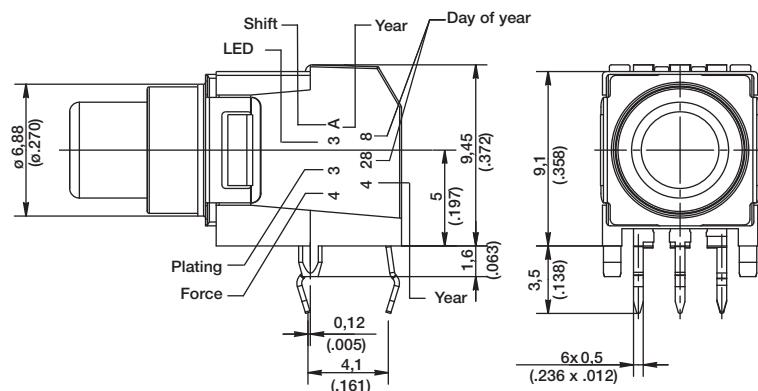
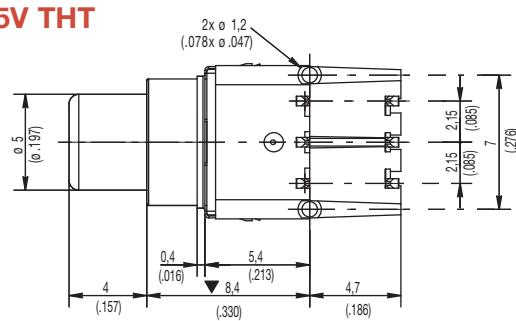
www.ckswitches.com

C&K

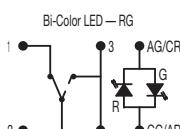
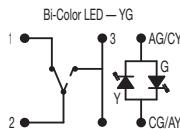
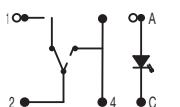
K5V Illuminated Tact Switch

Tactile Switches

K5V THT

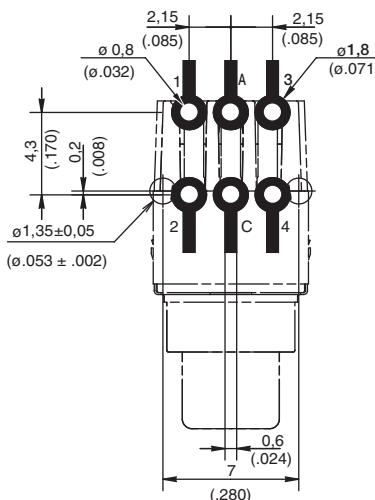


ELECTRICAL DIAGRAM

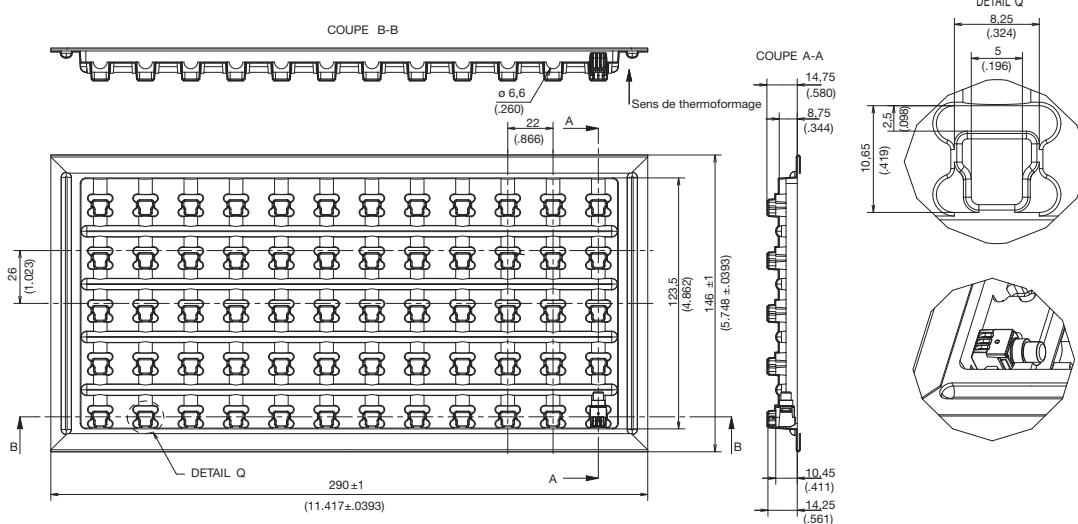


RECOMMENDED PCB LAYOUT (WITH HOLES)

TOP VIEW



TRAY

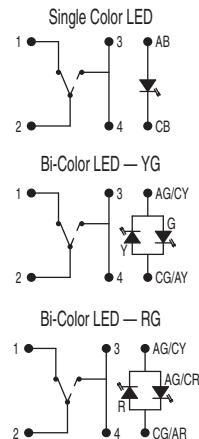


Dimensions are shown: mm
Specifications and dimensions subject to change

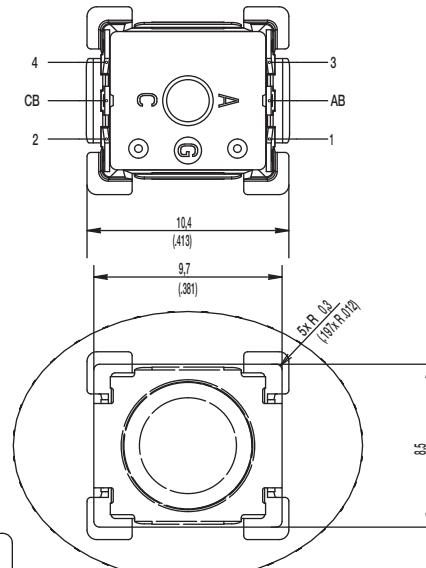
K5V Illuminated Tact Switch

K5V PM

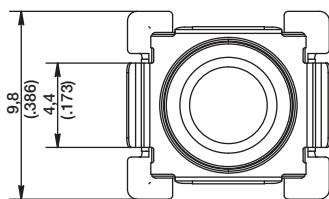
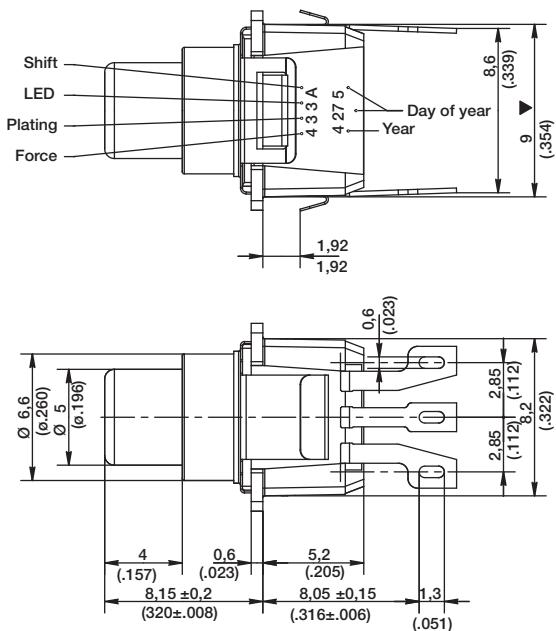
ELECTRICAL DIAGRAM



TERMINAL REFERENCES



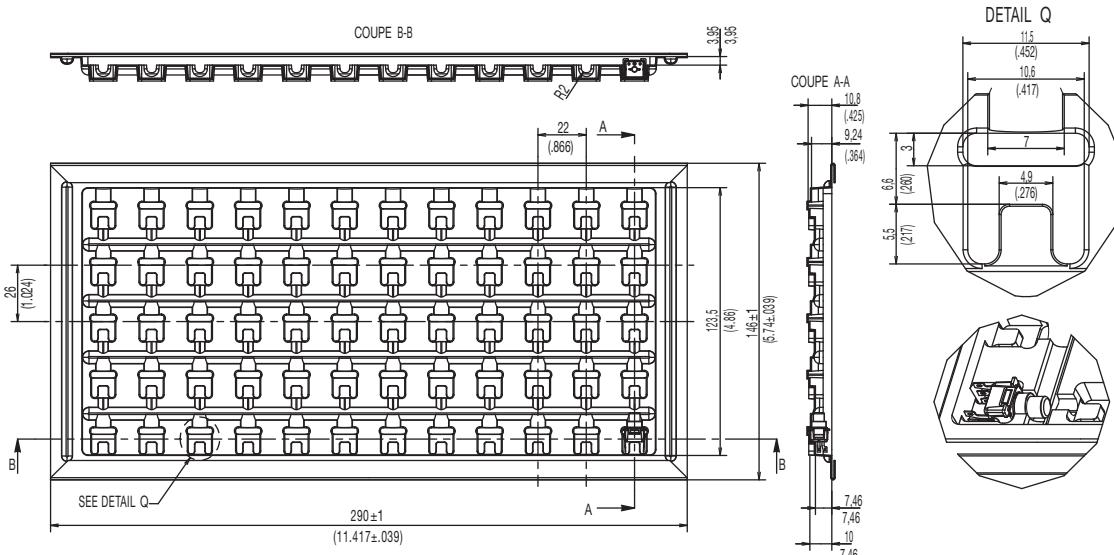
PRODUCT IDENTIFICATION AND DATE CODES



Tactile Switches

TRAY

SUITABLE FOR PANEL THICKNESS OF 1.8MM MAX



C&K

Dimensions are shown: mm
Specifications and dimensions subject to change

KSF & KSFI Series

Soft Actuated Tact Switch

B

Tactile Switches



Features/Benefits

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

Typical Applications

- Low profile keyboards
- Automotive interfaces
- Industrial control

Specification

FUNCTION: momentary action

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

TERMINALS: THT pins

Mechanical

Type	Force (N)	Operating life (operations)	Travel (mm)
KSF0M211LFTR	1.5 ± 0.5	100,000	0.25 ± 0.1
KSF0M311LFTR	1.9 ± 0.5	100,000	0.25 ± 0.1
KSF0M411LFTR	3.0 ± 0.75	100,000	0.25 ± 0.1
KSF0M511LFTR	5.2 ± 1.0	100,000	0.25 ± 0.1
KSFI0V91170SH LFTR	3.4 ± 1.5	100,000	0.65 ± 0.25
KSF0M212 LFT	1.6 ± 0.4	300,000	0.25 ± 0.1
KSF10M412 70SHLFT	3.2 ± 0.8	100,000	0.75 ± 0.25

Overload resistance: 40N, 1 time

Sealing: IP60 or IP67

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

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

Electrical

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

DIELECTRIC STRENGTH (50 Hz, 1 min.): > 250 Vrms

CONTACT RESISTANCE: < 100 m Ω

INSULATION RESISTANCE (100 V, initial stage): > 10⁹ Ω

BOUNCE TIME: < 1 ms

Environmental

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

Process

SOLDERING

Packaging

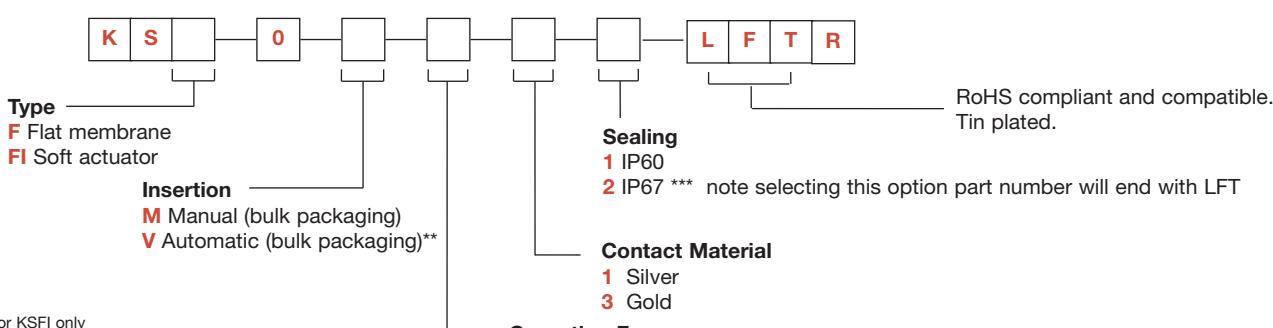
In boxes of 250 pieces (V type) or 500 pieces (M type).

How To Order

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

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

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



* valid for KSFI only

** valid for KSFI MK1 series only

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

C&K

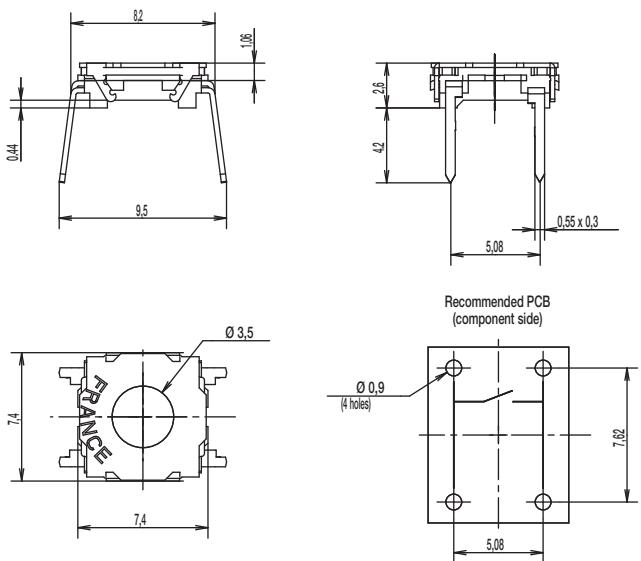
26 jul 16

Dimensions are shown: mm
Specifications and dimensions subject to change

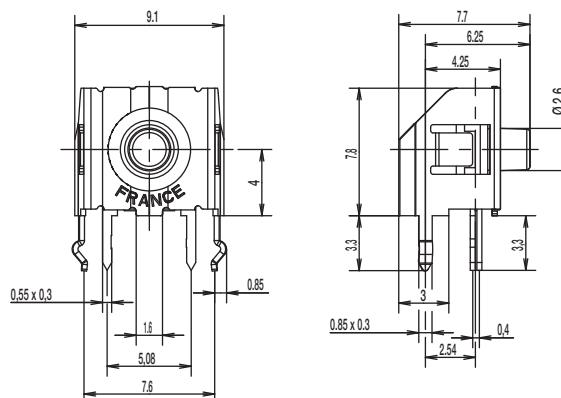
KSF & KSFI Series Soft Actuated Tact Switch



KSF

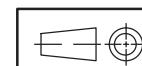


KSFI 0V



B

Tactile Switches



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

KSA & KSL Series Sealed Tact Switch

B

Tactile Switches



Features/Benefits

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

Typical Applications

- Automotive
- Industrial
- Telecommunication networks

Specification

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

Mechanical

Type	Actuation force N	Operating life (operations)	Travel to make
KSA0M211	1,4 ± 0,4	100,000	0,5 ± 0,2
KSA0M311	1,4 ± 0,4	1,000,000	0,5 ± 0,2
KSA0M411	3 ± 0,75	100,000	0,6 ± 0,2
KSA0M511	5 ± 1,5	100,000	0,7 ± 0,2
KSA0M911	3 ± 0,75	500,000	0,6 ± 0,2
KSLOM211	1,4 ± 0,4	100,000	0,5 ± 0,2
KSLOM311	1,4 ± 0,4	1,000,000	0,5 ± 0,2
KSLOM411	3 ± 0,75	100,000	0,6 ± 0,2
KSLOM511	5 ± 1,5	100,000	0,7 ± 0,2
KSLOM911	3 ± 0,75	500,000	0,6 ± 0,2

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

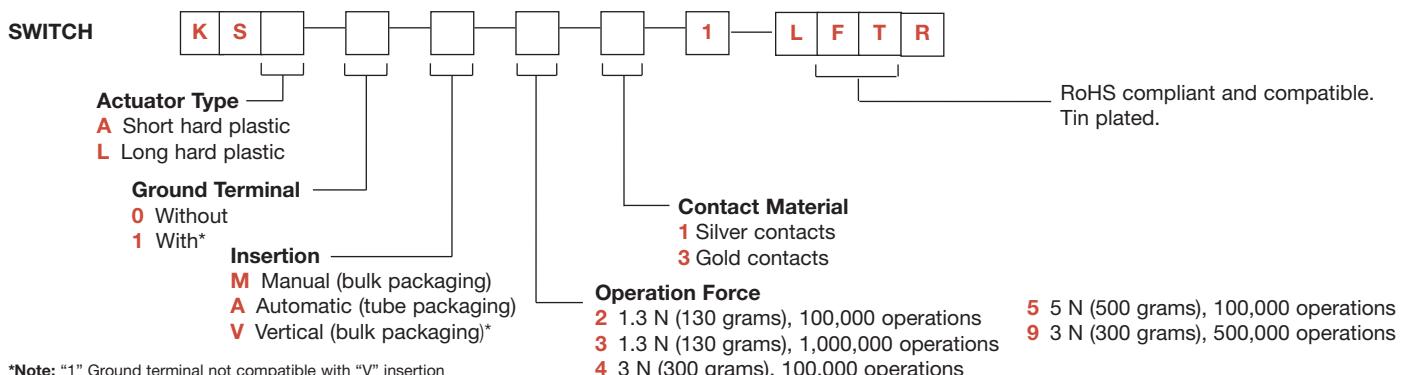
This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment. Please contact your sales representative to get contractual specification package.

How To Order

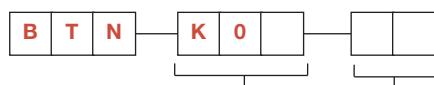
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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.



Button Style

- | | |
|--|---------------------------------------|
| K01 10 mm square snap-on | K06 10 x 2,5 mm snap-on handle |
| K02 Ø8 mm round snap-on | K07 5 mm square |
| K03 8,5 x 3,8 mm single floating | K08 9,9 x 5 mm rectangular |
| K04 18,5 x 3,8 mm double floating | K09 Ø6,2 mm round |
| K05 5 mm square | |

Button Color

- | | |
|----------------------|---------------------|
| 10 Dark gray | 60 Blue |
| 20 Light gray | 70 Gray-blue |
| 30 Yellow | 80 Ivory |
| 40 Red | 90 Black |
| 50 Green | |

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

Dimensions are shown: mm

Specifications and dimensions subject to change

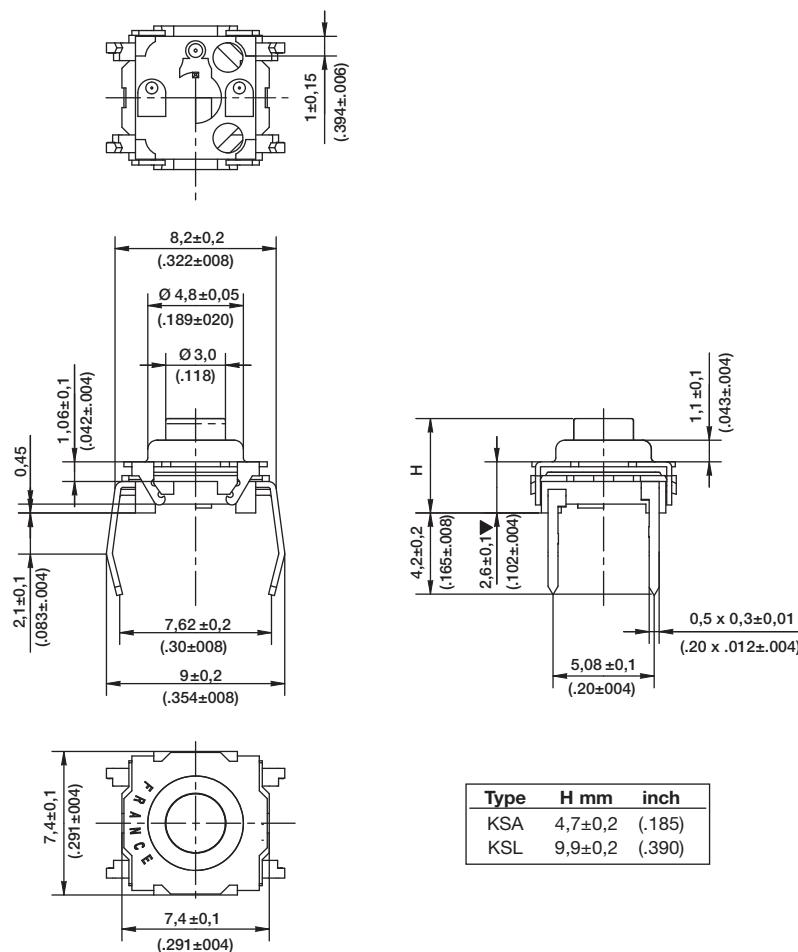
C&K

26 jul 16

KSA & KSL Series Sealed Tact Switch

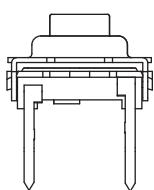
ACTUATOR TYPE

KSA & KSL

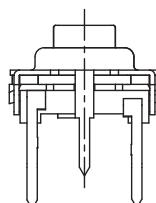


GROUND TERMINAL

0 WITHOUT



1* WITH



*Not compatible with "V" insertion



*Dimensions are shown: mm
Specifications and dimensions subject to change*

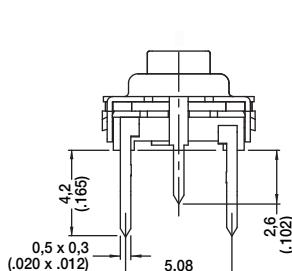
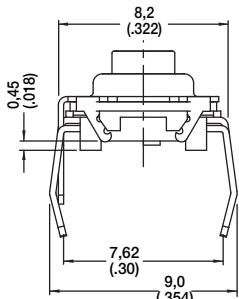
C&K

26 jul 16

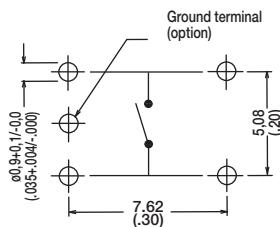
KSA & KSL Series Sealed Tact Switch

INSERTION

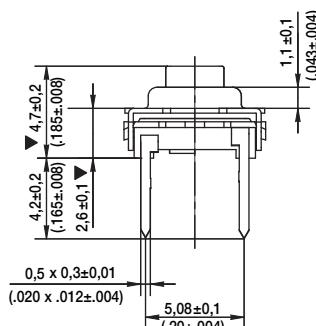
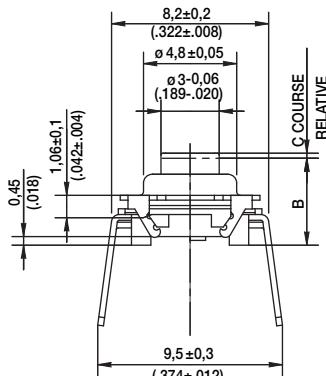
M MANUAL (BULK PACKAGING)



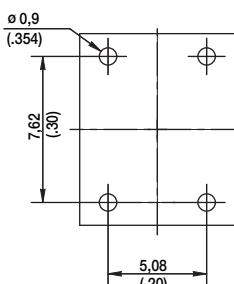
PCB LAYOUT



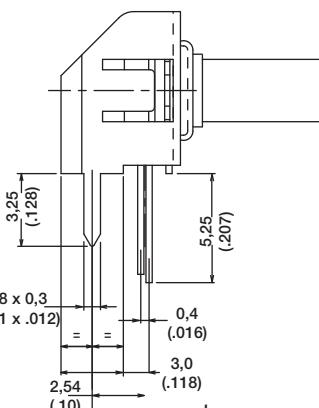
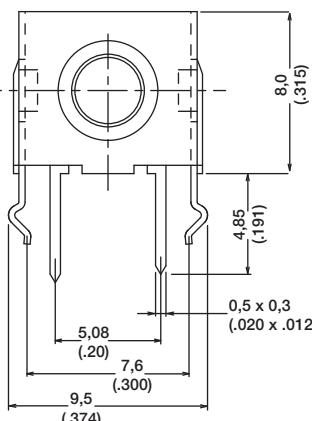
A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)



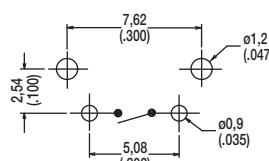
PCB LAYOUT



V VERTICAL



PCB LAYOUT



DIMENSION L

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

OPERATING FORCE

OPTION CODE	OPERATING FORCE
2	1.3 N (130 grams) 100,000 operations
3	1.3 N (130 grams) 1,000,000 operations
4	3.0 N (300 grams) 100,000 operations
5	5.0 N (500 grams) 100,000 operations
9	3.0 N (300 grams) 500,000 operations



Dimensions are shown: mm
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

SEALING

OPTION CODE	SEALING
1	Sealing level IP60

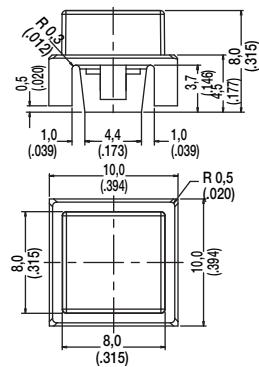
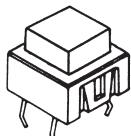
Tactile Switches

BUTTONS

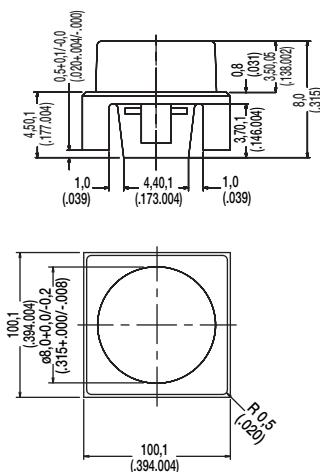
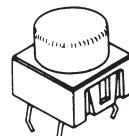
Buttons must be ordered separately and will be supplied in bulk.

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

K01



K02



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



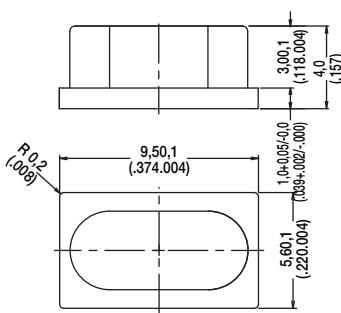
26 jul 16

KSA & KSL Series Sealed Tact Switch

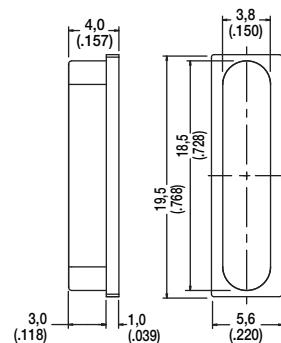
K03



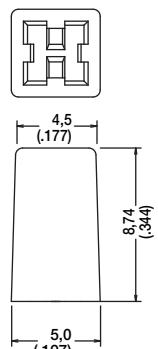
Tactile Switches



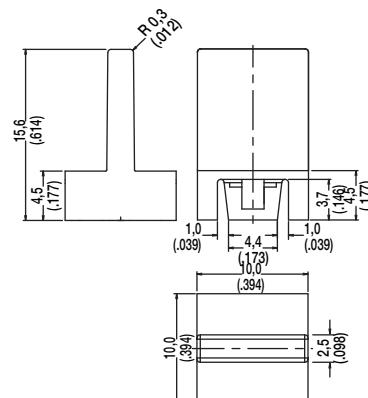
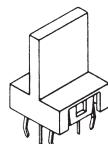
K04



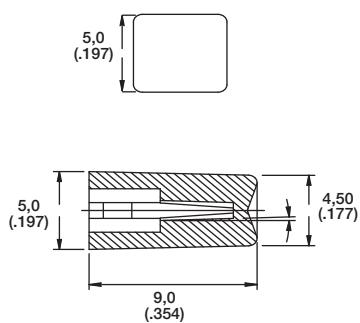
K05



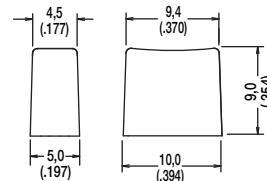
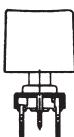
K06



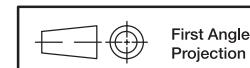
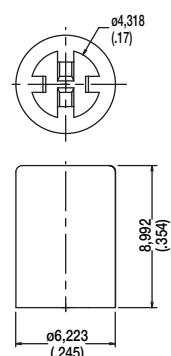
K07



K08



K09



First Angle Projection

Dimensions are shown: mm
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



B

Tactile Switches

Specification

CONTACT ARRANGEMENT: SPST, N.O.

TERMINALS: PC pins

SEALING: IP65

Double overmold on terminals

Mechanical

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

Packaging

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

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

For information on specific and custom switches, consult Customer Service Center.

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

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

Electrical

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

Environmental

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

Process

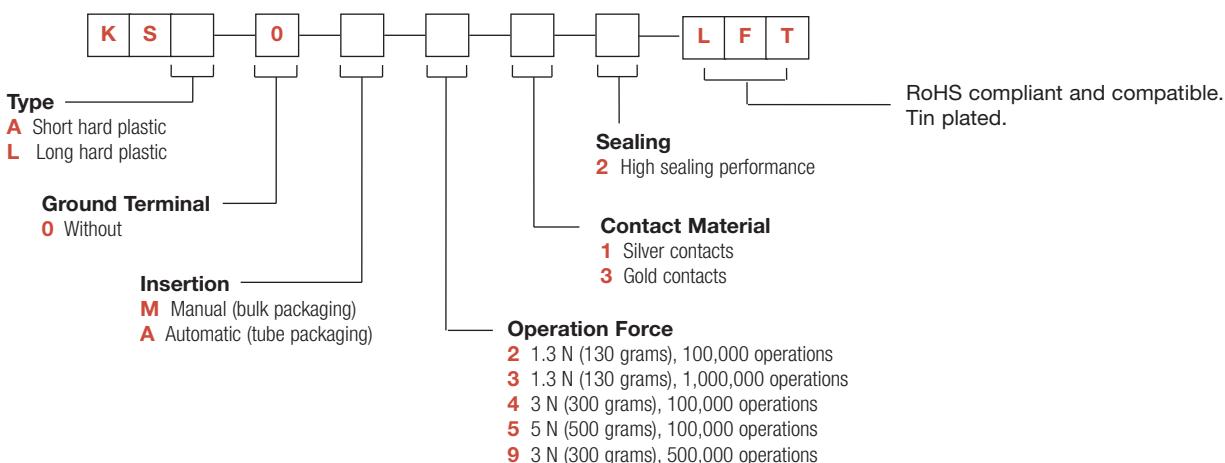
Wave soldering compatible with lead free soldering profile.

How To Order

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

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

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



KSA & KSL MKII Series

High Performance Sealed Tact Switch

TYPE ■■■■■■■■■■

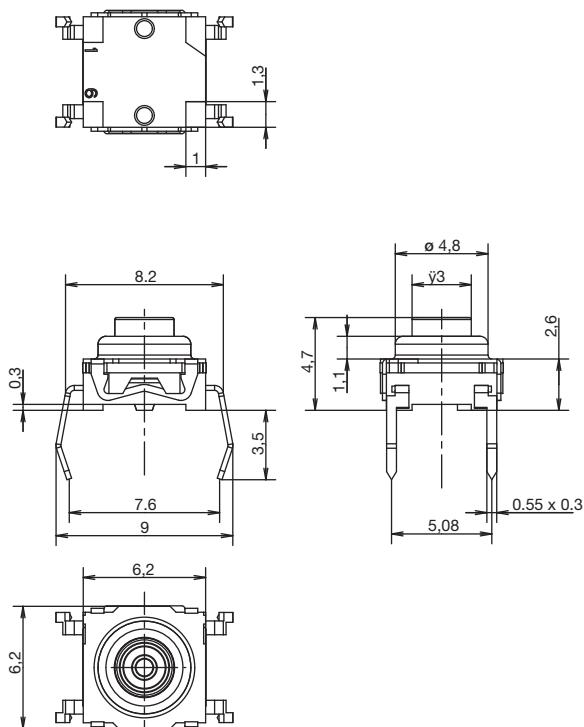
KSA & KSL

MANUAL INSERTION

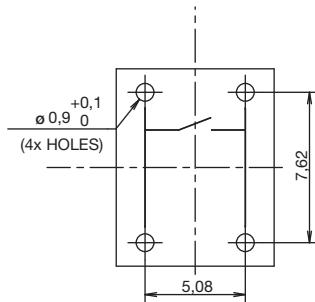


Tactile Switches

B

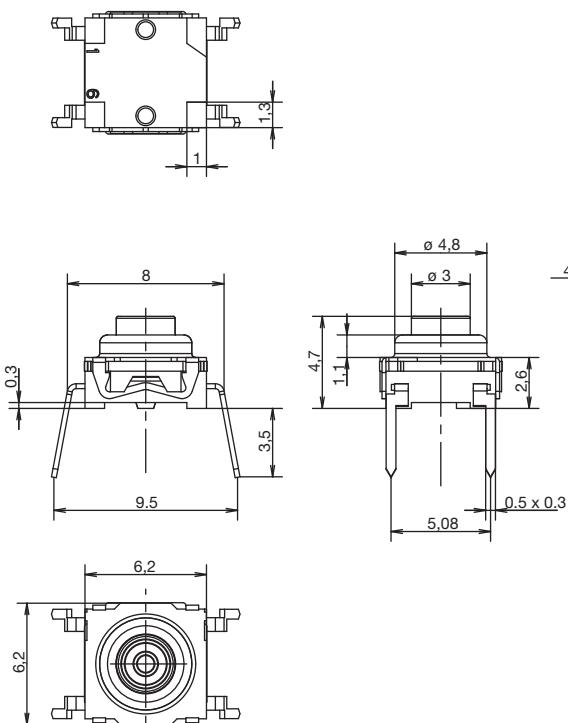


Recommended PCB
(component side)

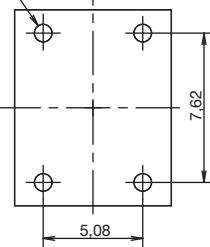


KSA & KSL

AUTOMATIC INSERTION



PCB LAYOUT



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

KSJ Series Spherical Actuator Tact Switches

Features/Benefits

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

Typical Applications

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



B

Specification

FUNCTION: Momentary action

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

DISTANCE BETWEEN BUTTON CENTERS (min.): 7.62 (0.300)

TERMINALS: PC pins

SEALING: IP60

Environmental

Silver Gold

OPERATING TEMPERATURE: -40°C to 85°C -40°C to 125°C

STORAGE TEMPERATURE: -40°C to 85°C -55°C to 125°C

Packaging

Delivered in boxes of 250 pieces.

Mechanical

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

Electrical

Silver Gold

MAXIMUM POWER:	1 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA
DIELECTRIC STRENGTH (50 Hz, 1 min.):	≥ 250 Vrms	
CONTACT RESISTANCE:	≤ 100 m Ω	
INSULATION RESISTANCE (100V):	$\geq 10^9$ 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.

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

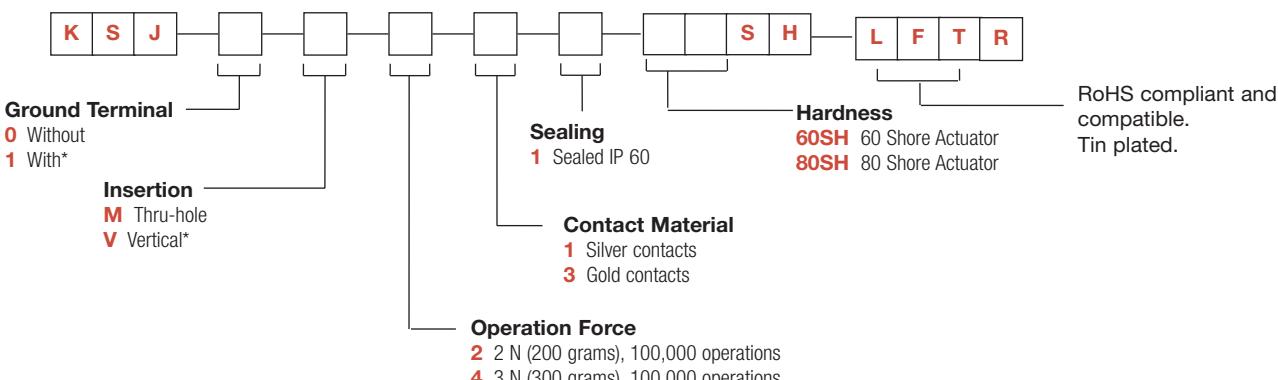
* Please contact your C&K representative for any question regarding the product intergration.

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 represenative.



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



26 jul 16

B-91

Dimensions are shown: mm
Specifications and dimensions subject to change

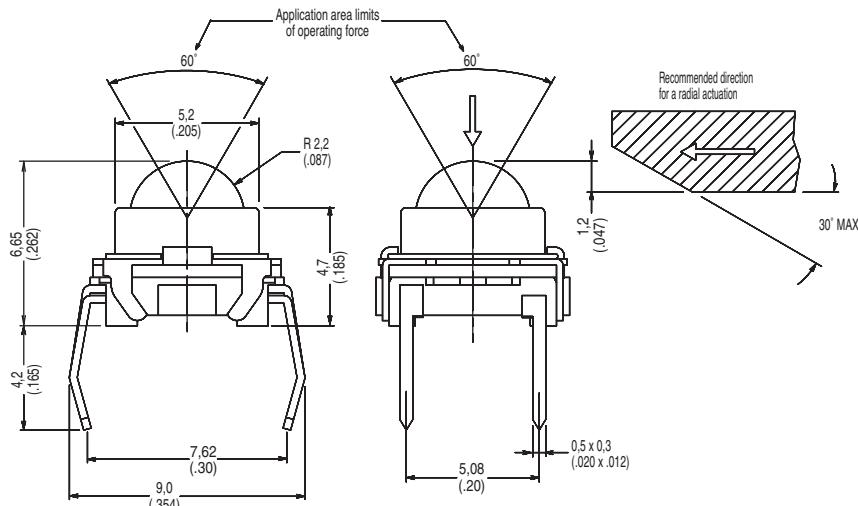
www.ckswitches.com

Tactile
Switches

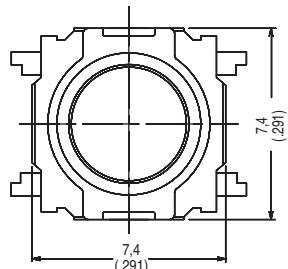
KSJ Series Spherical Actuator Tact Switches

Tactile Switches

KSJ

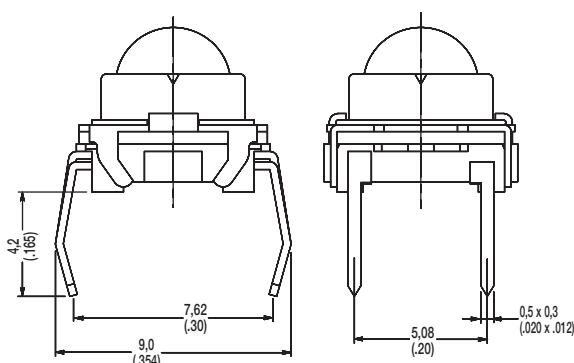


KSJ0M211

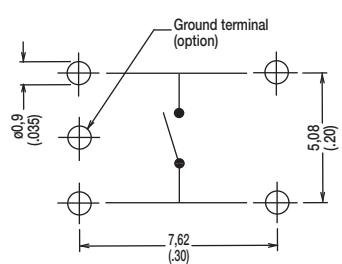


INSERTION

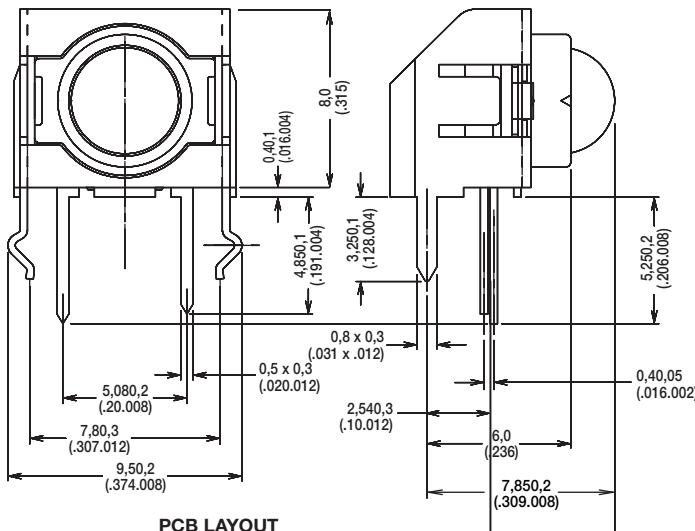
M THRU-HOLE



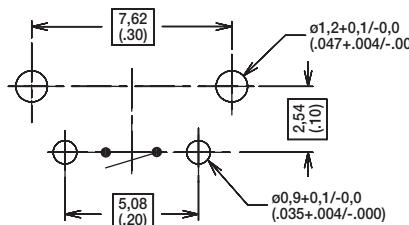
PCB LAYOUT



V VERTICAL



PCB LAYOUT



Dimensions are shown: mm

Specifications and dimensions subject to change

C&K

26 jul 16

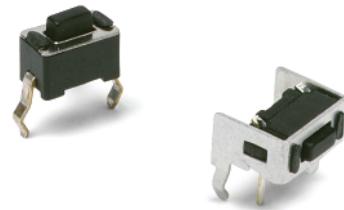
PTS635 Series 3,5 mm Tact Switches

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



B

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: $10^{11}\Omega$ 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

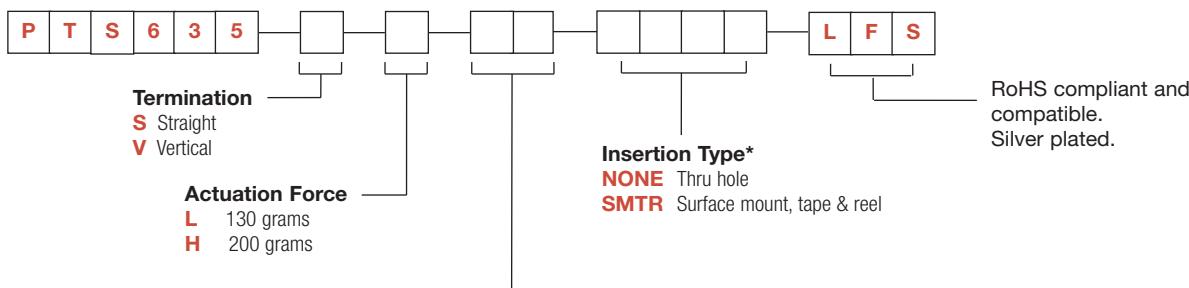
Bulk packaging.

Tape & reel for:

PTS635Sx43SMTR, 1700 pcs per reel

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.



Actuator Height to PCB / Ground Pin

- | | |
|-----------|-------------------------------|
| 43 | 4,3 (.169), Thru-hole and SMT |
| 50 | 5,0 (.197), Thru-hole |
| 31 | 3,15 (.124), Vertical |
| 39 | 3,85 (.151), Vertical |

* SMTR only available with PTS635 43 Actuator Height options.

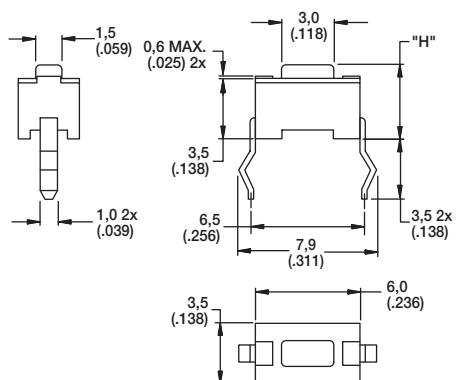
PTS635 Series 3,5 mm Tact Switches

SERIES ■■■■■ ■■■■■

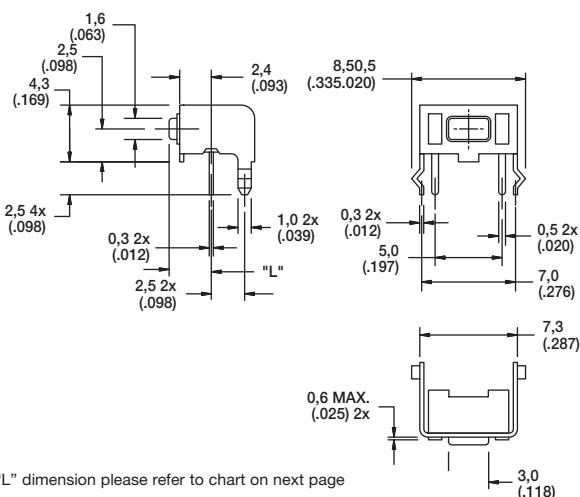
PTS635

Tactile Switches

B



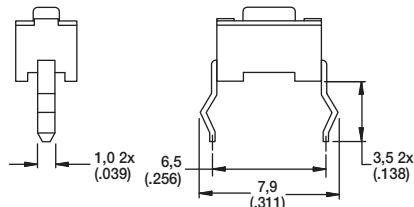
For "H" dimension please refer to chart on next page



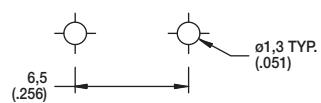
For "L" dimension please refer to chart on next page

TERMINATION ■■■■■ ■■■■■

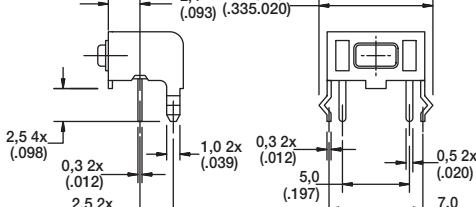
S STRAIGHT



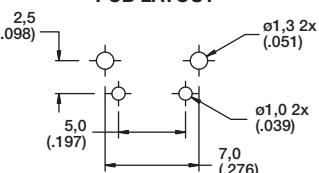
PCB LAYOUT



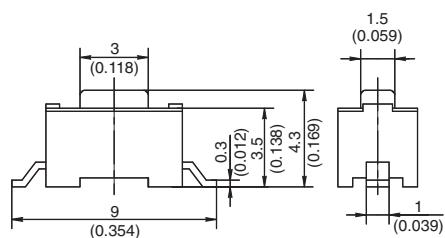
V VERTICAL



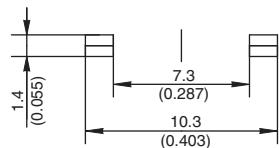
PCB LAYOUT



SMT 43



PCB LAYOUT



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

PTS635 Series

3,5 mm Tact Switches

ACTUATION FORCE

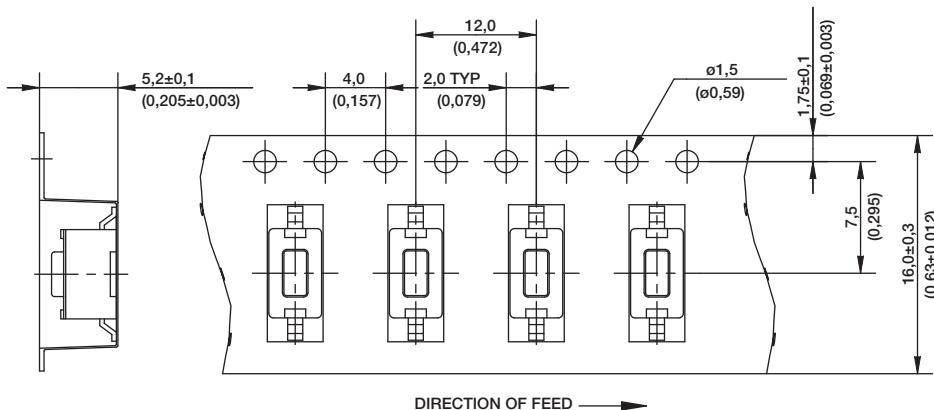
OPTION CODE	FORCE
L	130 grams
H	200 grams

ACTUATOR HEIGHT

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

INSERTION TYPE

SMTR 43



Dimensions are shown: mm
Specifications and dimensions subject to change



B

Tactile Switches

PTS641 Series

SMT Top Actuated Switches

B
Tactile Switches



Features/Benefits

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

Typical Applications

- Metering
- White goods
- Home and garden equipment

Specification

FUNCTION: Momentary action

CONTACT ARRANGEMENT: 1 make contact = SPST N.O.

TERMINALS: G type for SMT

Mechanical

TRAVEL:

0.20 mm ±0.15 mm for 160 & 250 gf

0.30 mm ±0.15 mm for 320 gf

OPERATING LIFE: 100,000 cycles

OPERATION FORCE:

160 gf ±50 gf blue actuator

250 gf ±50 gf red actuator

320 gf ±80 gf black actuator

Packaging

Switches in reels of 1,500 pieces.

Dimensions of reels according to EIA 481B

External diameter 330 mm

Electrical

MAXIMUM VOLTAGE: 12 VDC

MAXIMUM CURRENT DC: 50 mA

DIELECTRIC STRENGTH: 250 VA C (1mn)

CONTACT RESISTANCE: 100 m Ω

INSULATION RESISTANCE: ≥ 100 M Ω

BOUNCE TIME: < 5 ms

Environmental

OPERATING TEMPERATURE: -20°C to 85°C

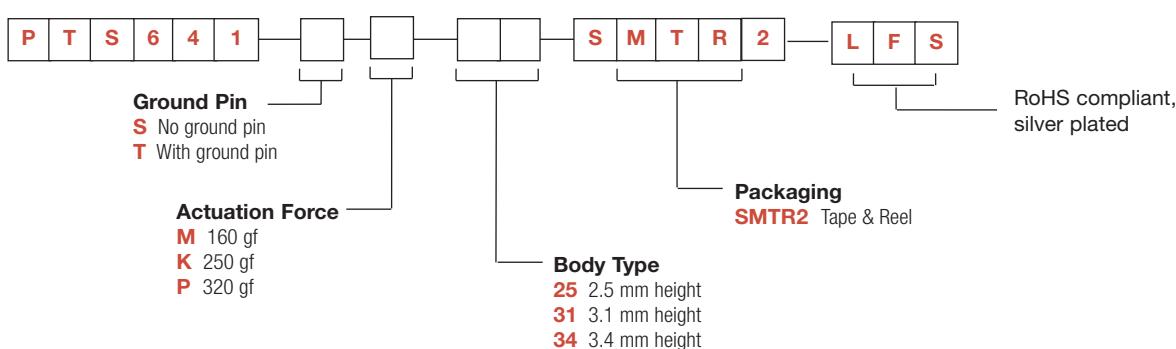
Process

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

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

How To Order

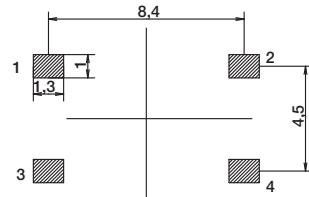
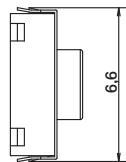
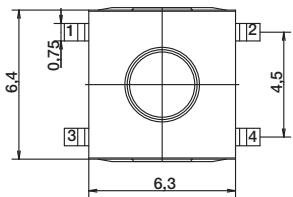
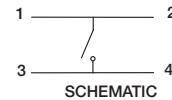
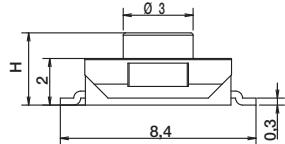
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



PTS641 Series

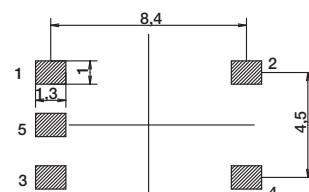
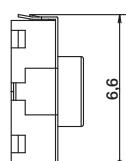
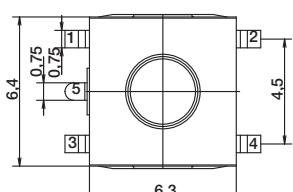
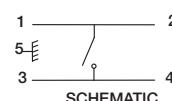
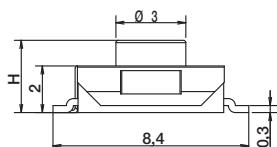
SMT Top Actuated Switches

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



RECOMMENDED PCB LAYOUT

GROUND PIN H = 2.5, 3.1, or 3.4 mm



RECOMMENDED PCB LAYOUT



Tactile Switches

PTS645 Series

6 mm Tact Switches

B

B

Tactile 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: 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: 10¹¹ Ω min.

Environmental

OPERATING TEMPERATURE: -20°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.

Packaging

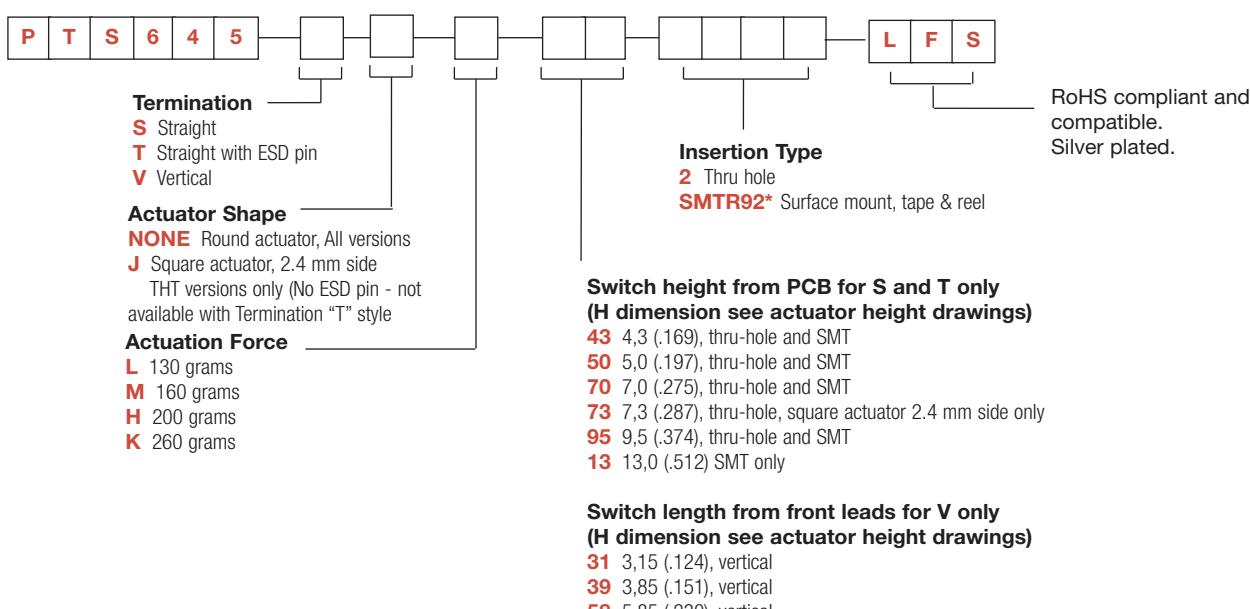
Bulk packaging.

Tape & reel for the SMT type:

Reels of 1,000 pieces for 4,3 and 5,0 mm height
Reels of 700 pieces for 7,0 mm height
Reels of 500 pieces for 9,5 mm height
Reels of 400 pieces for 13,0 mm height

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 straight type termination without ESD pin is available in SMT type.

Dimensions are shown: mm

Specifications and dimensions subject to change

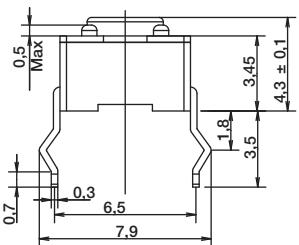
C&K

PTS645 Series

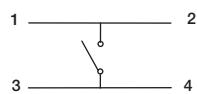
6 mm Tact Switches

TERMINATION

S STRAIGHT



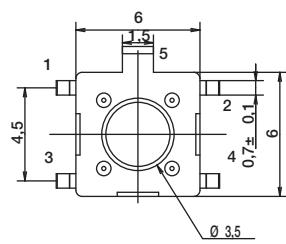
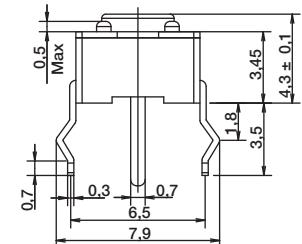
SCHEMATIC



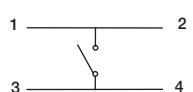
Tactile Switches



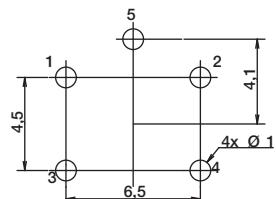
T STRAIGHT WITH ESD PIN



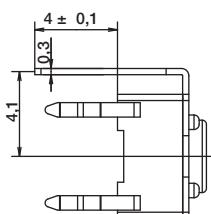
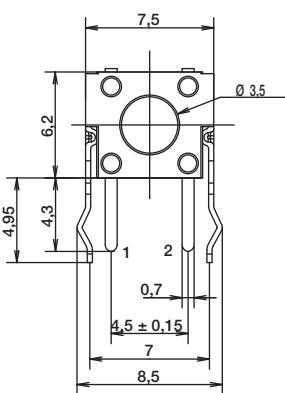
SCHEMATIC



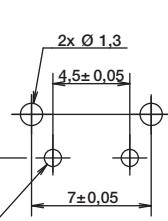
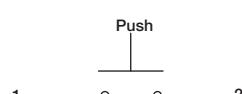
PCB LAYOUT



V VERTICAL



SCHEMATIC



PCB LAYOUT



First Angle Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

PTS645 Series

6 mm Tact Switches

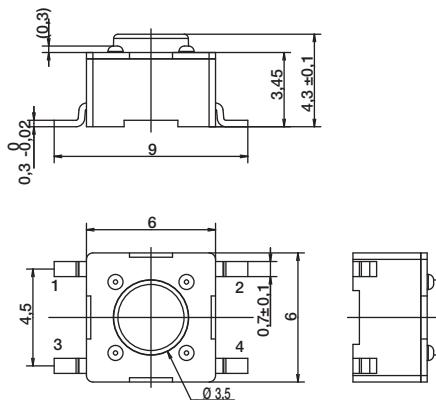
TERMINATION

SMT

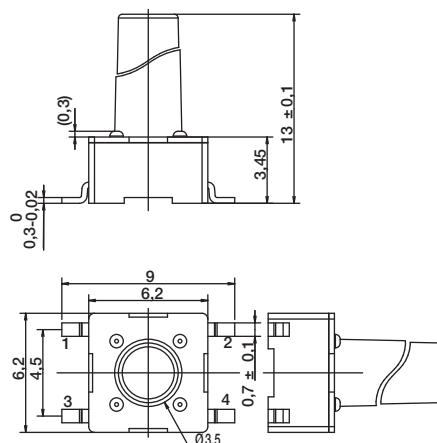
FOR 4.3, 5.0, 7.0, 9.5 MM HEIGHT

Tactile Switches

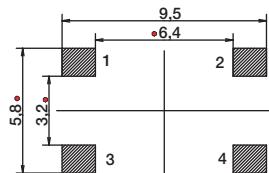
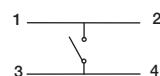
B



13.0 MM HEIGHT ONLY

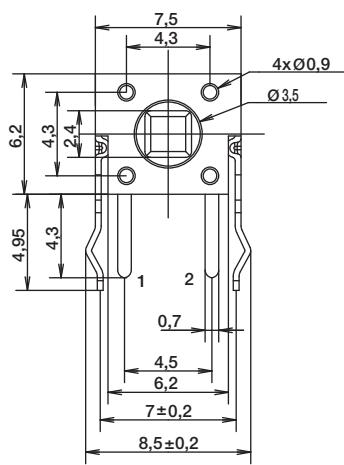
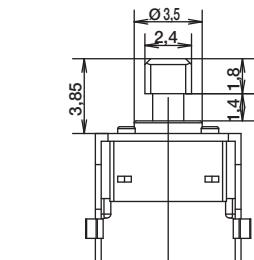


SCHEMATIC

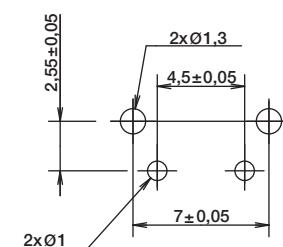
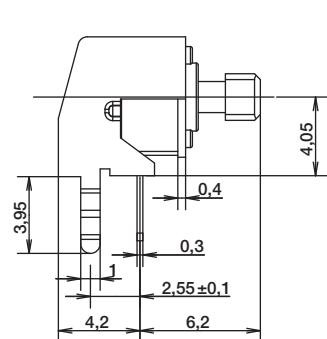
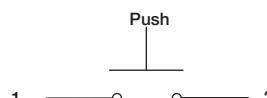


PCB LAYOUT

ACTUATOR SHAPE



SCHEMATIC



RECOMMENDED PCB LAYOUT

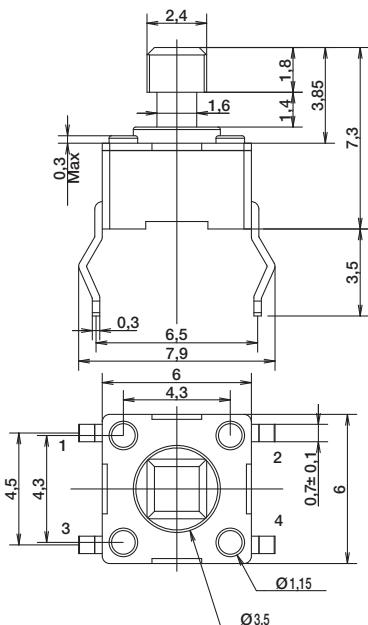


Dimensions are shown: mm

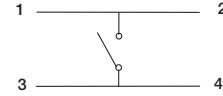
Specifications and dimensions subject to change

PTS645 Series 6 mm Tact Switches

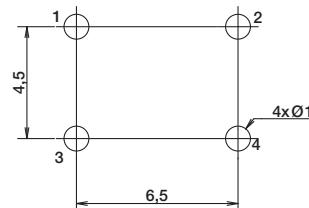
ACTUATOR SHAPE



SCHEMATIC



RECOMMENDED PCB LAYOUT



B

Tactile Switches

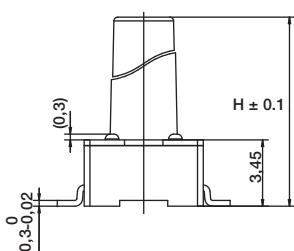
ACTUATION FORCE

OPTION CODE	FORCE
L	130 grams Black
M	160 grams Blue
H	200 grams Gray
K	260 grams Red

ACTUATOR HEIGHT

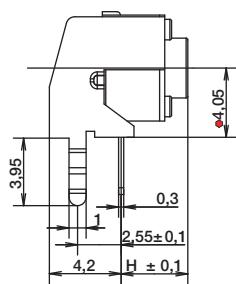
Switch height from PCB for S and T only

OPTION CODE	DIMENSION H	TERMINATION	SCHEMATIC Without EMC pin	SCHEMATIC With EMC pin
43	4,3 (.169)	Thru-hole and SMT		
50	5,0 (.197)	Thru-hole and SMT		
70	7,0 (.275)	Thru-hole and SMT		
95	9,5 (.374)	Thru-hole and SMT		
13	13,0 (.512)	SMT	1 o — o2 3 o — o4	1 o — o2 3 o — o4



Switch length from front leads for V only

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



C&K

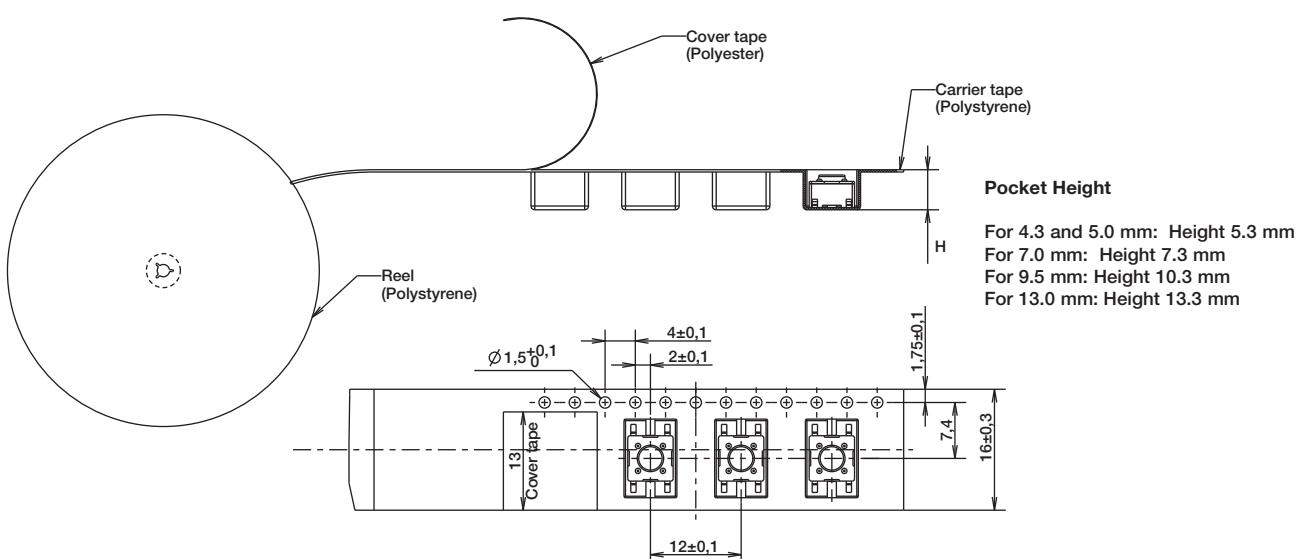
Dimensions are shown: mm
Specifications and dimensions subject to change

PTS645 Series 6 mm Tact Switches

TAPE & REEL

Tactile Switches

B



PTS645 V SMT Series

6 mm SMT Side Actuated Tact Switch

Features/Benefits

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

Typical Applications

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



B

Tactile Switches

Specification

FUNCTION: Momentary action

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

TERMINALS: G type for SMT

TRAVEL: 0.25 mm +0.2/-0.1 mm

OPERATING LIFE: 100,000 cycles

Mechanical

Part Number	Operating Force (gf)	Actuator Color
PTS645 VN13 SMTR92 LFS	100 ± 30	Dark grey
PTS645 VM13 SMTR92 LFS	160 ± 50	Yellow green

Electrical

MAXIMUM VOLTAGE: 12 V DC

MAXIMUM CURRENT: 50 mA

DIELECTRIC STRENGTH: 100 V AC (1mn)

CONTACT RESISTANCE: ≤ 100 mΩ

INSULATION RESISTANCE: ≥ 100 MΩ

BOUNCE TIME: ≤ 10 ms

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

STORAGE TEMPERATURE: -30°C to 80°C

Process

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

Recommended solder paste thickness is ≥ 15µm

Packaging

In reels of 650 pieces

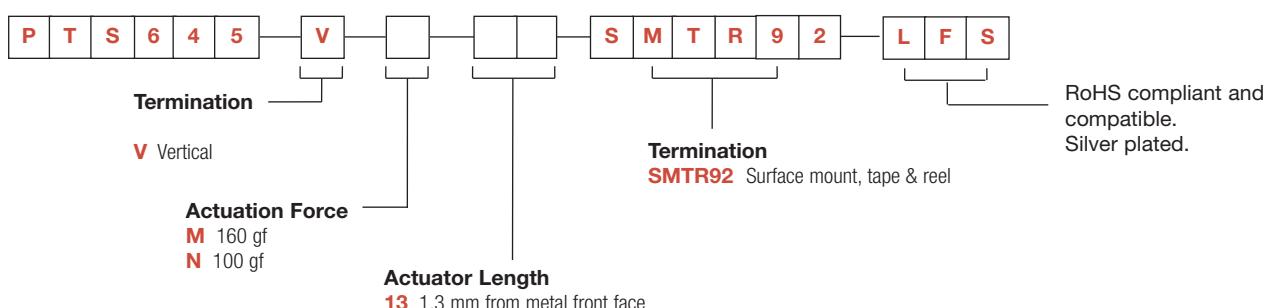
Dimensions of reels according to EIA 481B

External diameter 330 mm

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

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.

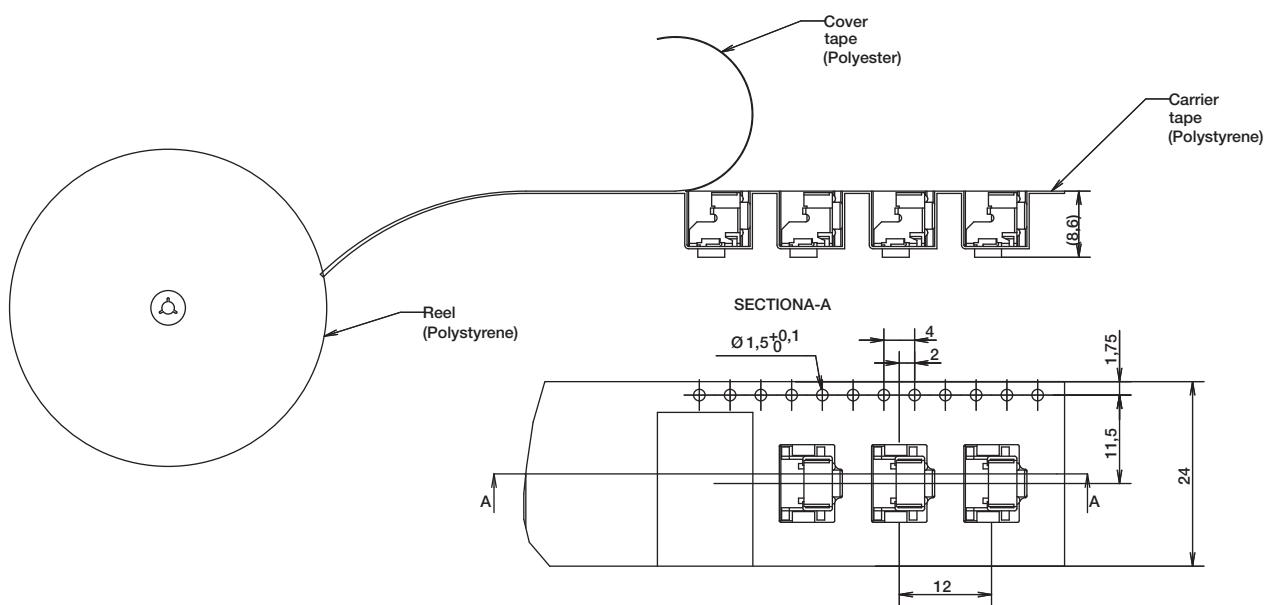
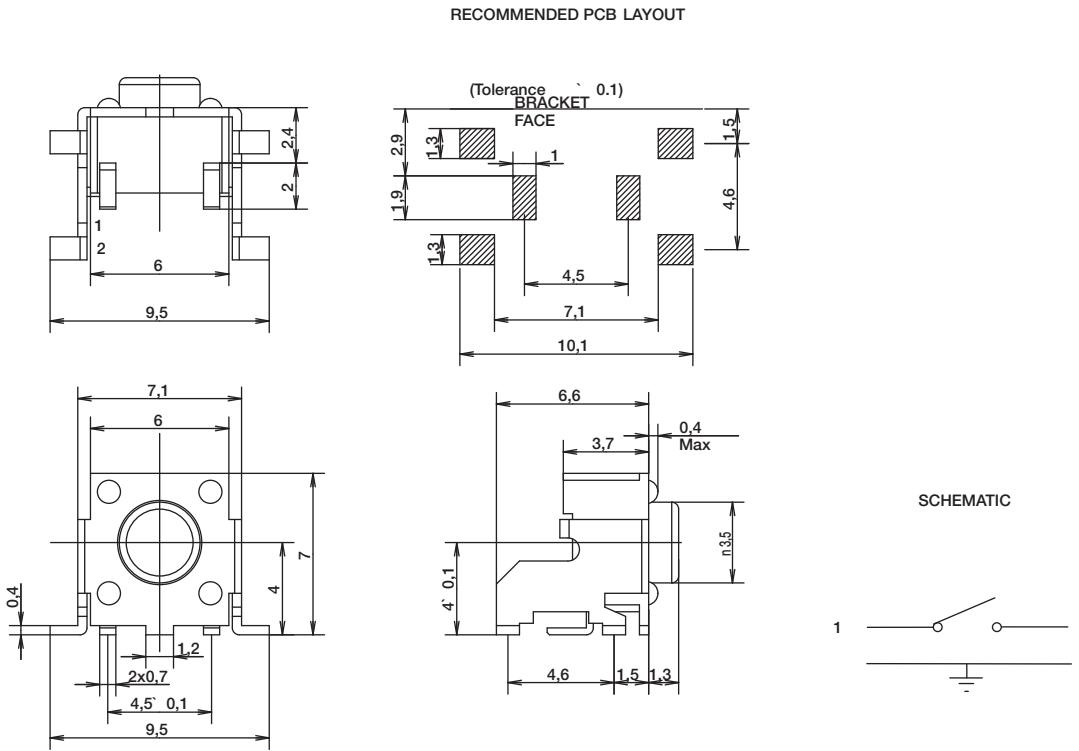


PTS645 V SMT Series

6 mm SMT Side Actuated Tact Switch

Tactile Switches

B



PTS125 Series

12 mm Tact Switches



Features/Benefits

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

Typical Applications

- **Consumer products**
- **Instrumentation**
- **Computer products**
- **Industrial**



B

Tactile Switches

Specification

FUNCTION: Momentary action
CONTACT ARRANGEMENT: 1 make contact SPST, N.O.
TERMINALS: PC pins for THT and G type for SMT
TRAVEL: 0.30 mm ± 0.15 mm

Mechanical

OPERATING LIFE: 200,000 cycles
OPERATING FORCE: 180 gf ± 50
250 gf ± 50

Electrical

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

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

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

Process

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

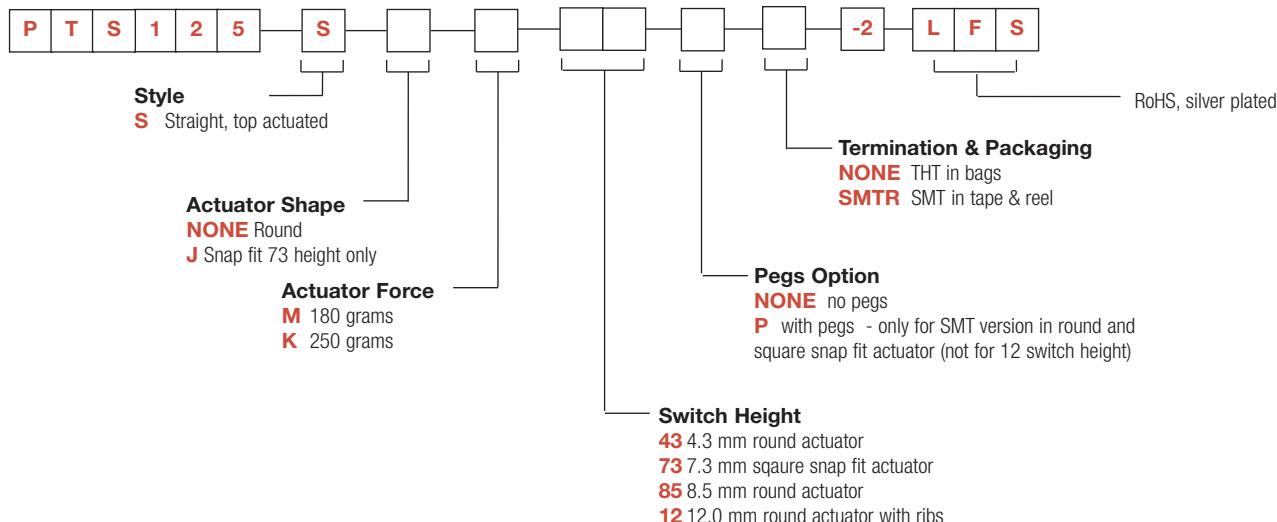
Packaging

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

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

How To Order

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



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

Dimensions are shown: mm
Specifications and dimensions subject to change

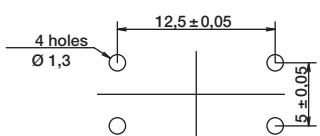
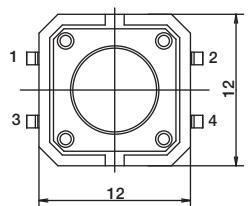
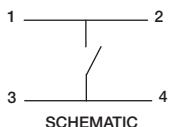
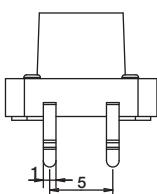
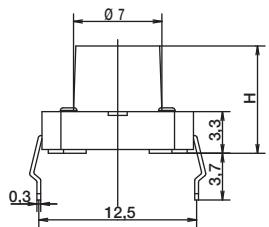
C&K

PTS125 Series

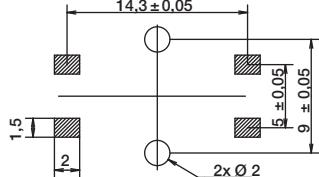
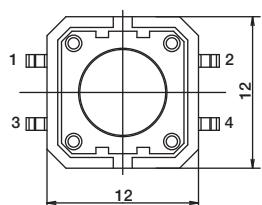
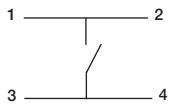
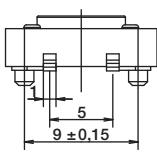
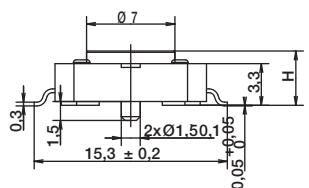
12 mm Tact Switches

Tactile Switches

THT VERSION WITH ROUND ACTUATOR H= 4.3 & 8.5 MM (other height upon request)



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

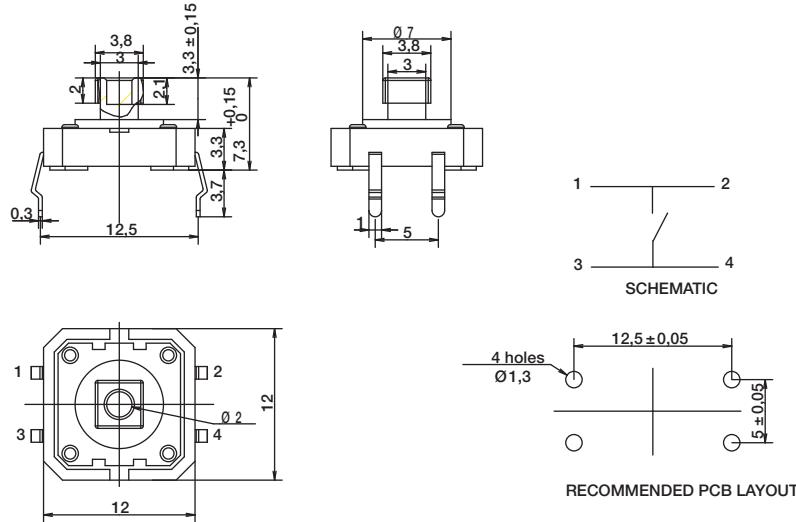


Dimensions are shown: mm
Specifications and dimensions subject to change

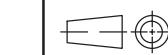
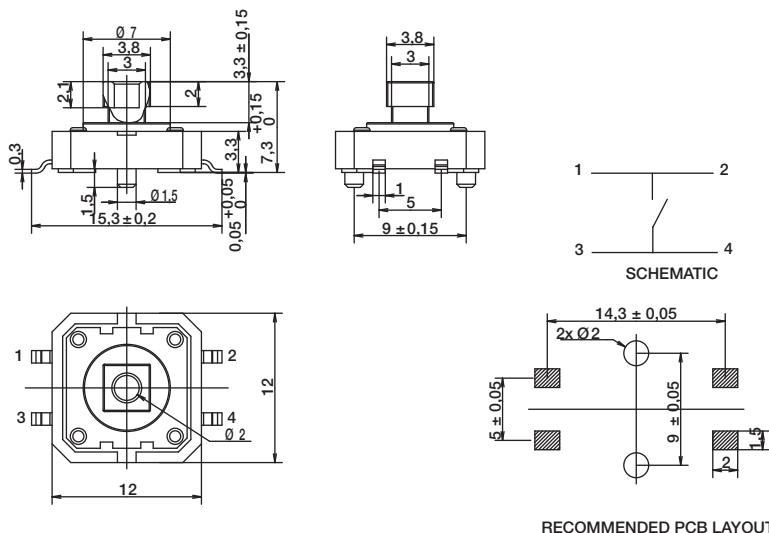
PTS125 Series

12 mm Tact Switches

THT VERSION WITH SQUARE SNAP FIT ACTUATOR H= 7.3 MM



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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

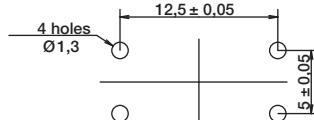
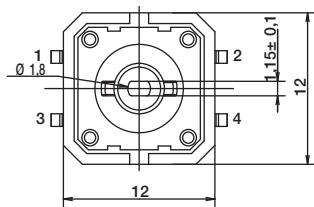
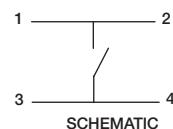
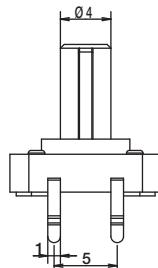
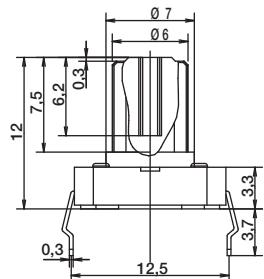
PTS125 Series

12 mm Tact Switches

Tactile Switches

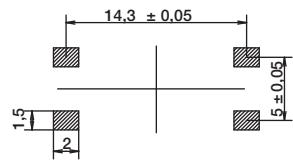
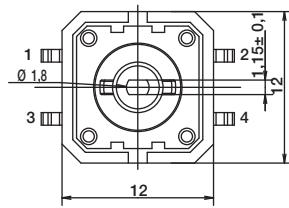
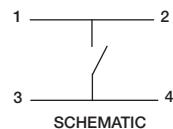
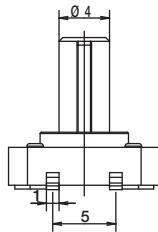
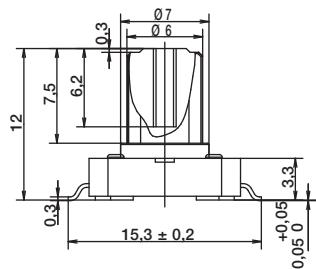
B

THT VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



RECOMMENDED PCB LAYOUT

SMT VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



RECOMMENDED PCB LAYOUT



Dimensions are shown: mm

Specifications and dimensions subject to change

ITS Series Illuminated Tact Switch

Features/Benefits

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

Typical Applications

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

NEW
Right
Angle
SMT



B

Tactile Switches

Specification

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

Mechanical

OPERATING FORCE: 160 ± 50 gf for V1; V2; V3; R1; R2 models
 220 ± 50 gf for R3 model
 OPERATING LIFE: 50,000 cycles (250m Ω max)
 RECOMMENDED OPERATING STROKE: 0.25mm ± 0.1 mm

Electrical

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

Packaging

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

Environmental

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

Process

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

Materials

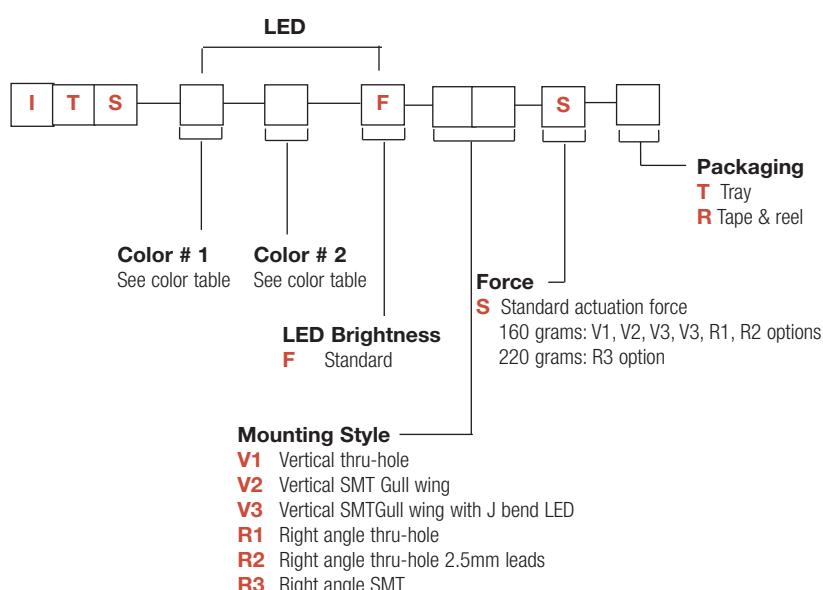
CONTACTS/TERMINALS:	Base metal; brass Plating; Ag
DOME:	Base metal: Phosphor bronze Plating; Ag
BASE:	PA
ACTUATOR:	PA
COVER:	PA

Caps

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

How To Order

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



LED Color

00	No light
10	Red
12	Red/Yellow
13	Red/Green
14	Red/Blue
20	Yellow
21	Yellow/Red
23	Yellow/Green
30	Green
31	Green/Red
32	Green/Yellow
40	Blue
41	Blue/Red
50	White
60	True green

* Other colors available by request

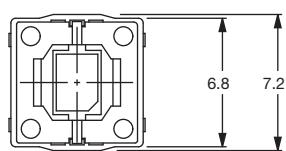
ITS Series Illuminated Tact Switch

LED COLOR / BRIGHTNESS

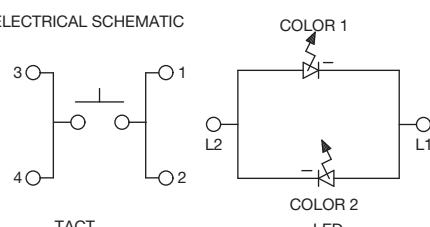
LED Characteristic	units	Standard LED Color Options					
		Red (1)	Yellow (2)	Green (3)	Blue (4)	White (5)	True Green (6)
Recommended Operating	mA @ 5VDC	20mA	20mA	20mA	20mA	20mA	20mA
Forward Current	mA	30 mA	30 mA	30 mA	30 mA	30 mA	30 mA
Peak Pulsing Current (1/8 duty @ 1kHz)	mA	125 mA	125 mA	125 mA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

MOUNTING STYLES

V1 - Vertical Thru-hole



ELECTRICAL SCHEMATIC

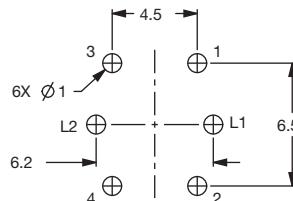
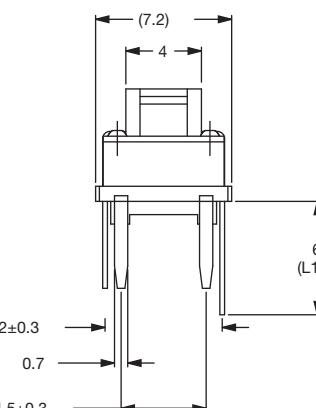
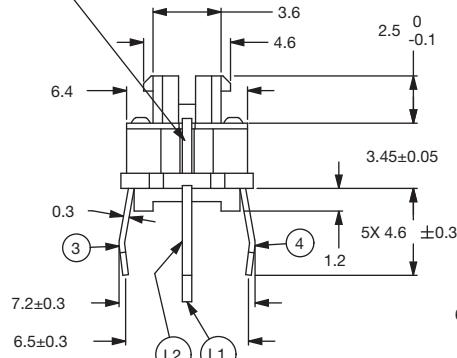


COLOR 1

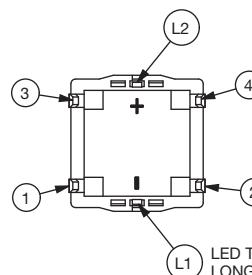
COLOR 2

LED

DOT SHOWING LED COLOR IS
MARKED FOR MINUS POLE
SEE SCHEMATIC



P.C.B. LAYOUT



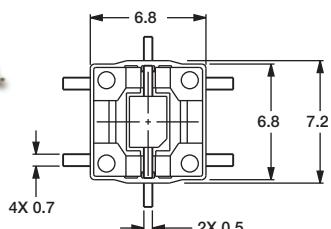
L1 LED TERMINAL L1 IS TRIMMED
LONGER THAN TERMINAL L2

TRAY PACKAGING: 200 PIECES

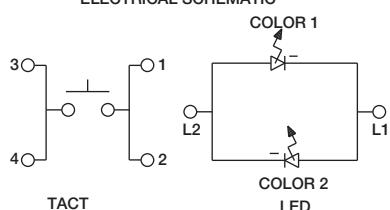
ITS Series Illuminated Tact Switch

MOUNTING STYLES

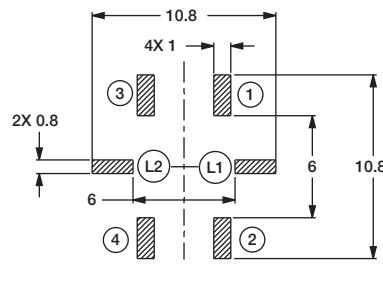
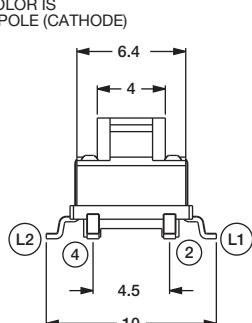
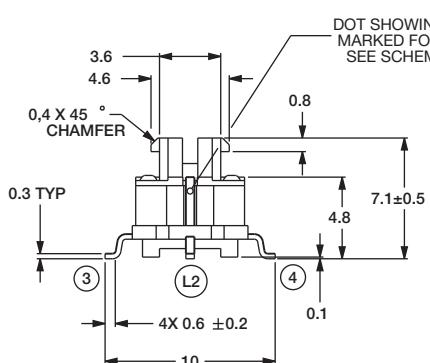
V2 - Vertical SMT; Gullwing



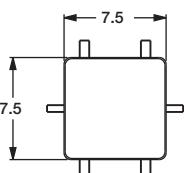
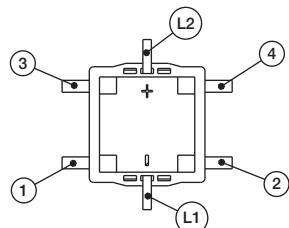
ELECTRICAL SCHEMATIC



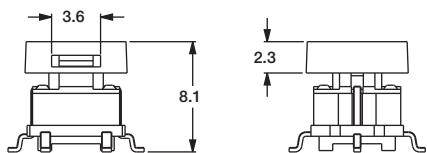
B



P.C.B. LAYOUT

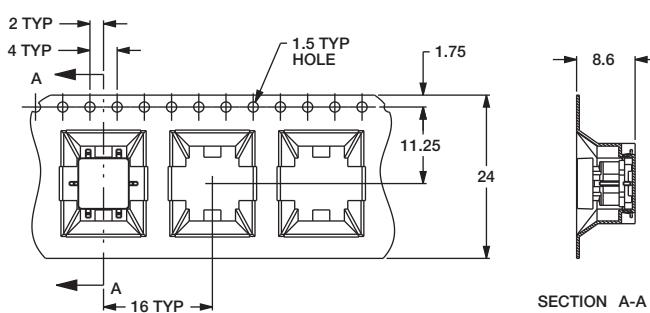


TAPE & REEL: 500 PIECES

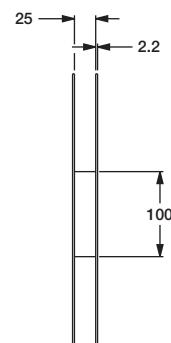
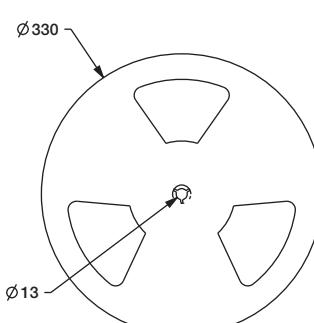


NOTES:

- SWITCH WITH TEMPORARY PICK AND PLACE CAP.



SECTION A-A

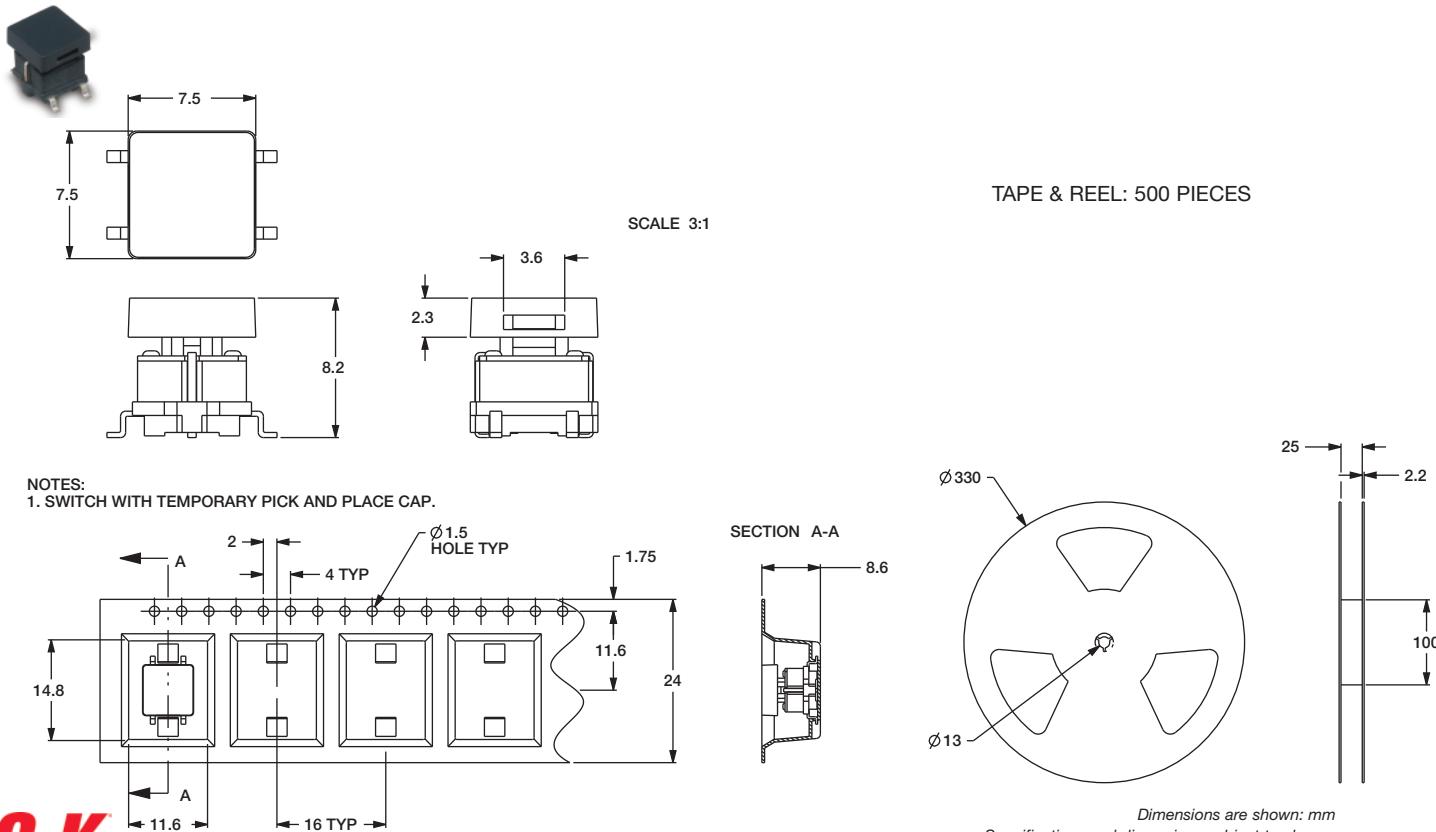
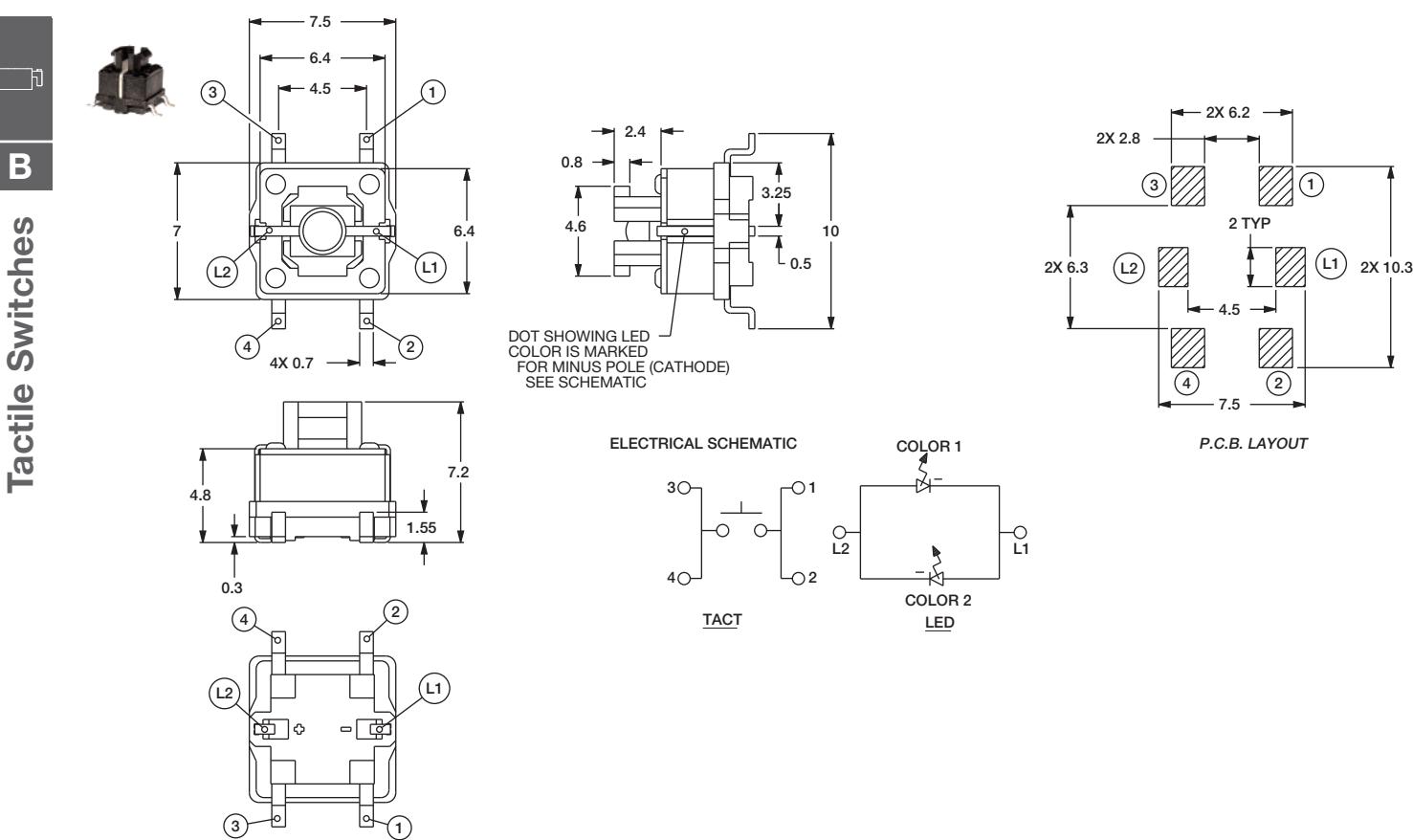


ITS Series Illuminated Tact Switch

MOUNTING STYLES

V3 - Vertical SMT; Gull wing with J bend LED

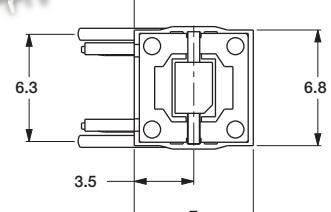
Tactile Switches



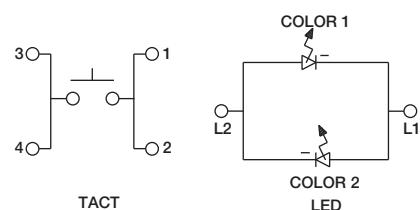
ITS Series Illuminated Tact Switch

MOUNTING STYLES

R1 - Right Angle; Thru-hole

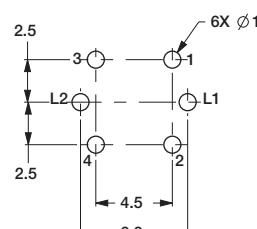
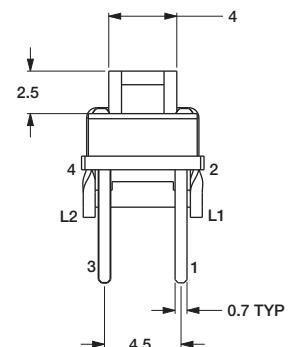
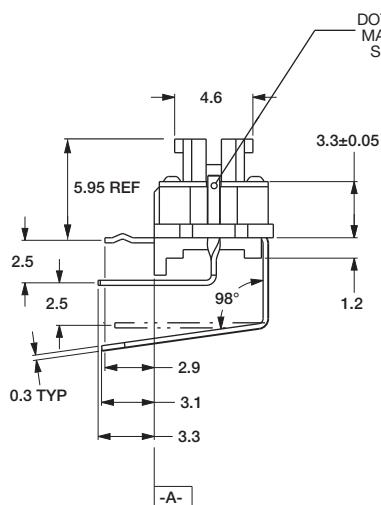


ELECTRICAL SCHEMATIC



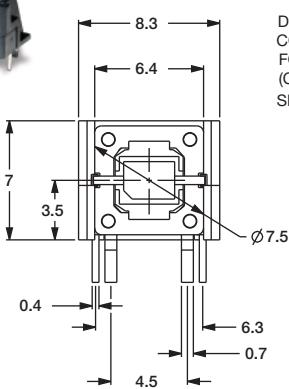
B

Tactile Switches

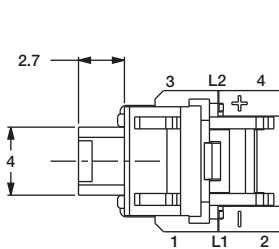
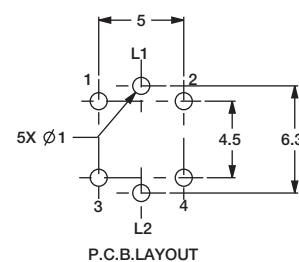
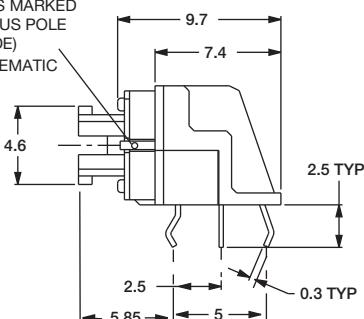


TRAY PACKAGING: 200 PIECES

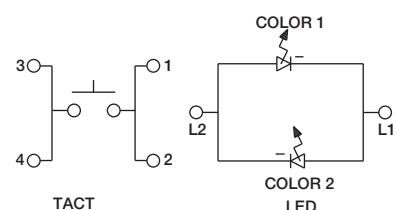
R2 - Right Angle; Thru-hole 2.5mm leads



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



ELECTRICAL SCHEMATIC



TRAY PACKAGING: 200 PIECES

C&K

Dimensions are shown: mm
Specifications and dimensions subject to change

ITS Series Illuminated Tact Switch

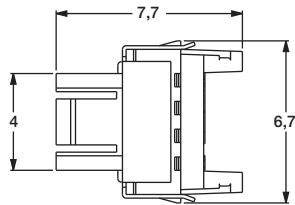
MOUNTING STYLES

R3 - Right Angle, SMT

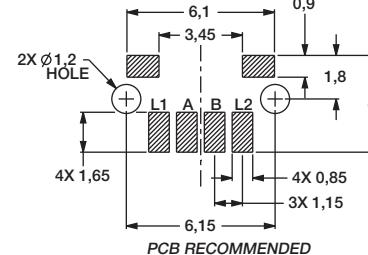
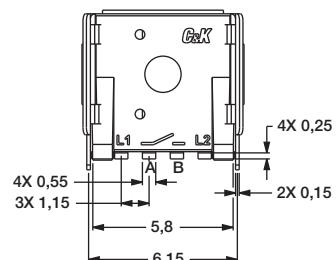
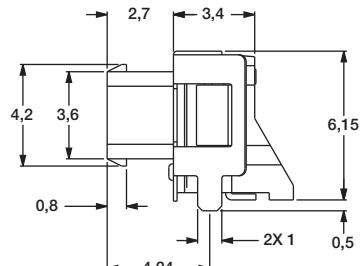
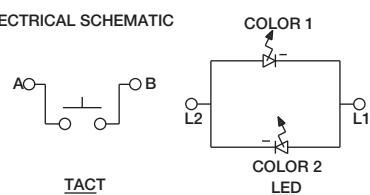
Tactile Switches



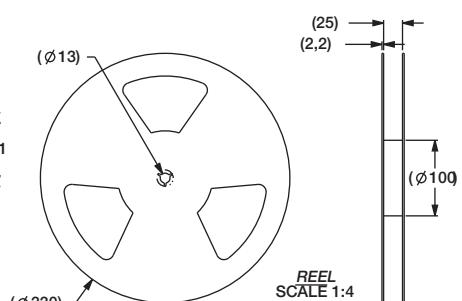
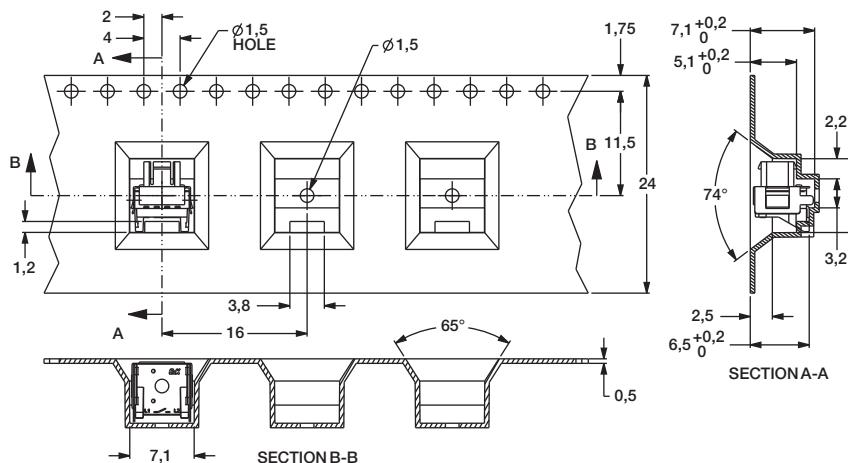
B



ELECTRICAL SCHEMATIC



TAPE & REEL: 500 PIECES



ITS Series Illuminated Tact Switch

FORCE

OPTION CODE	FORCE
S	Standard
	160 gf - V1, V2, V3, R1, R2 options
	220 gf - R3 option



B

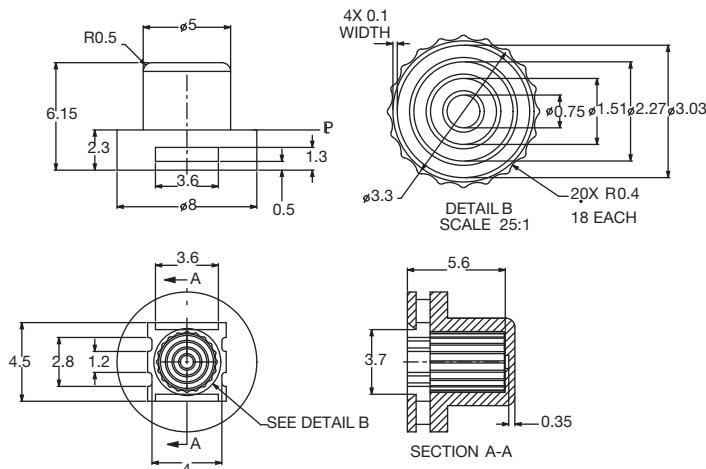
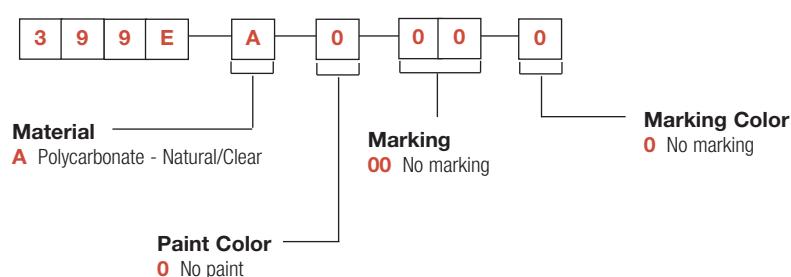
Tactile Switches

Use the individual ordering code for each cap



399EA0000

Round cap, clear



ITS Series Illuminated Tact Switch

CAPS



400EA0000

Natural/clear



400EB0000

Translucent white, flat edge

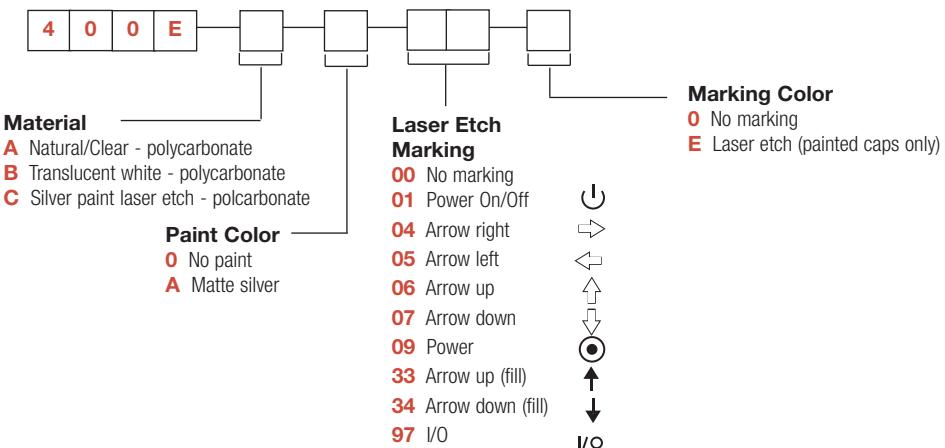


400ECA01E

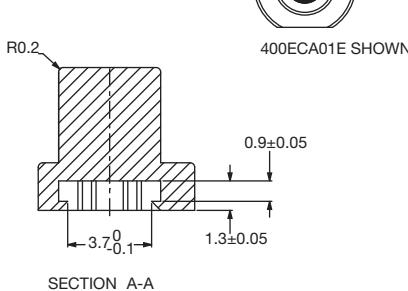
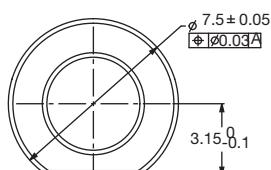
Matte silver paint laser etch, flat edge

B

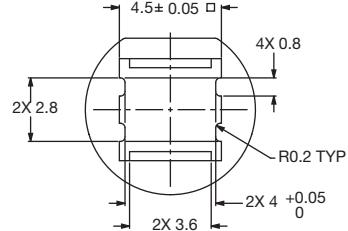
Tactile Switches



ITSXXFR1ST &
400ECA01E cap



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



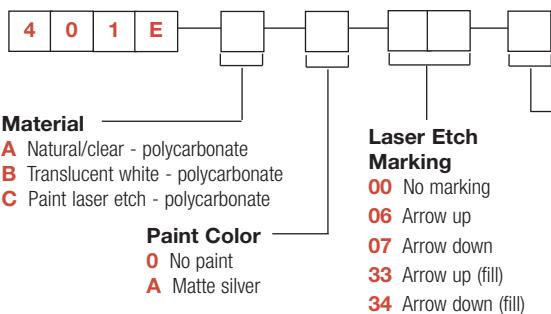
ITS Series Illuminated Tact Switch

CAPS



401ECA06E

Matte silver paint, laser etch,
tall oval

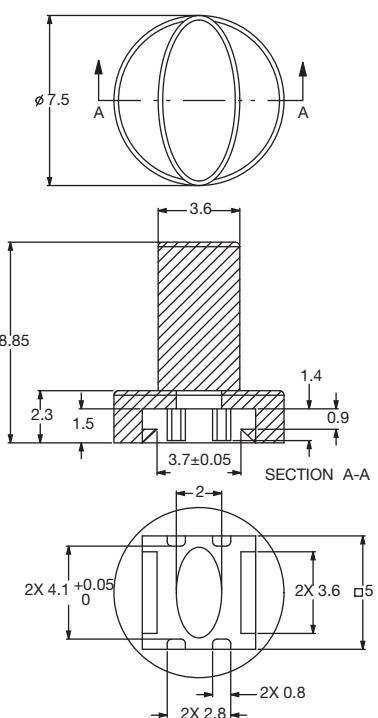


Marking Color
0 No marking
E Laser etch (painted caps only)



B

Tactile Switches



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