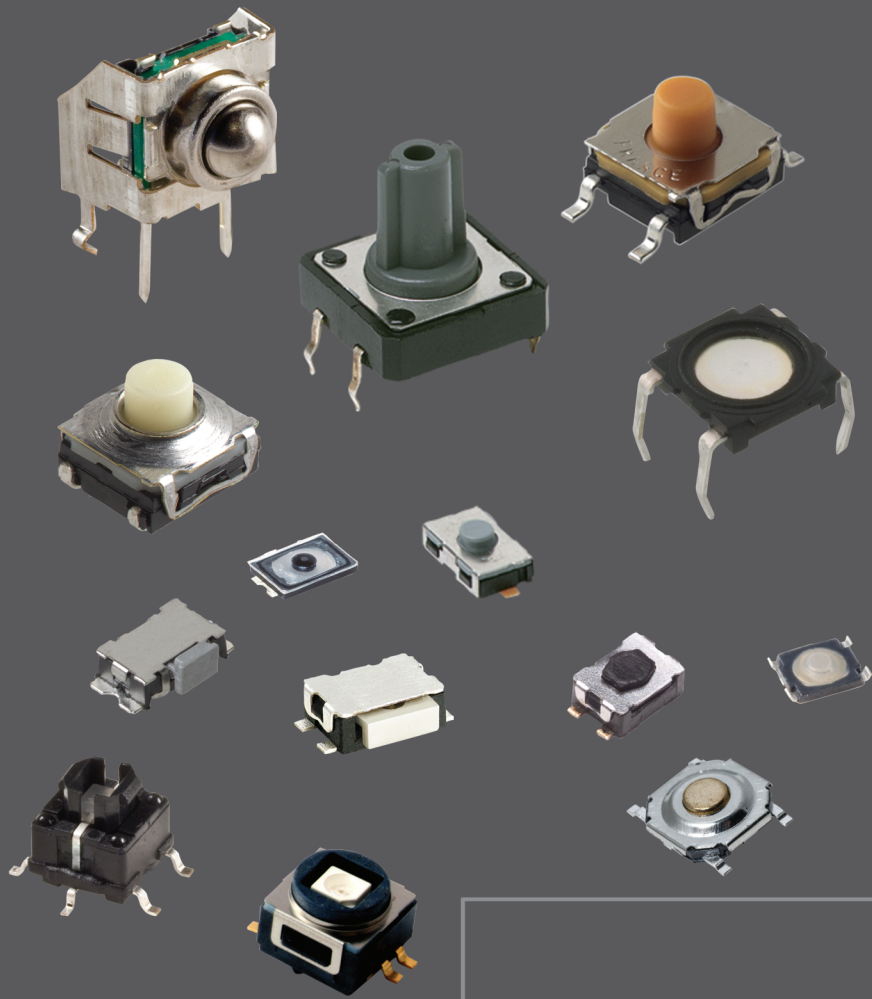
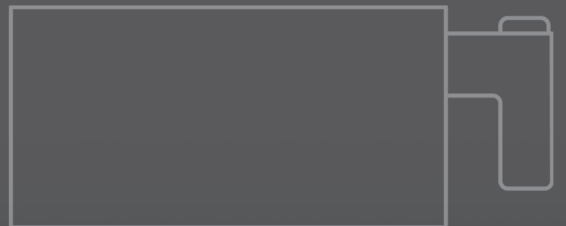


audio
automotive
aerospace
communication devices
consumer appliances
consumer electronics
datacom
data storage
handheld devices
industrial
industrial equipment
instrumentation
medical
military
mobile phones
portable tools
pumps & motors
security alarms
telecom
test equipment
thermostatic controls











tactile











Tactile Switches








Product Selection Guide

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

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

Tactile Switches Product Selection Guide

Surface Mount Thru-Hole Options								
Series	PTS841	KSR	KSS	KSC V	KSC 1-10			KSC XA
Footprint	3.6 x 3.5	7.15 x 3.8 7.3 x 3.8	5.5 x 4.4	2 holes \varnothing 1.1 2 pads 1.5 x 0.8	J 6.8 x 6.2	G 10 x 6.2	6.2 x 6.2	
Total Height (mm)	1.25	2.5	1.7	5.0*				4.9
Travel (mm)	0.2	0.3 to 0.5	0.3	0.7*	0.20 to 0.75 *			0.7
Actuation Force (N)	180gf; 250gf	1.2; 2.0; 3.0; 4.5	2 2.5 4	3.5*	1.1 to 5.5 *			3.5; 4.0; 5.5; 6.8; 9.6
Contact Type	Silver	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold			Silver
Max. Voltage (V)	12	32	32	32	32			24
Max. Switching Power (VA)		1 / 0.2	1 / 0.2	1 / 0.2	1 / 0.2			1
Life Cycles	100 000	100 000 200 000	100 000	300 000	100 000 to 1 000 000			1 000 000; 500 000; 300 000
IP Rating	IP40	IP50	IP40	IP67	IP67			IP67
Page Number	B-55	B-57	B-61	B-84	B-63			B-66

Surface Mount Thru-Hole Options								
Series	KSC SLT	KSC DCT	KSC PF	KSC OF	KSC TE	KSE	KST	KT
Footprint	6.2 x 6.2	6.8 x 6.2	6.8 x 6.2	6.2 x 6.2	6.2 x 6.3	6.8 x 6.2	6.2 x 6.2	SA 7.5x5 SA2 7.5x7
Total Height (mm)	5.0	5.2	5.2	5.1	3.5	3.1 / 4.3	5.0	6.6 7.11 with tab
Travel (mm)	1.35	0.85	0.5 to 1.0	0.5 / 0.65	0.3	0.3	1.3	0.3 to 0.5
Actuation Force (N)	2.4; 3.5	4.75	1.7 to 6.25	1.65; 4.0	1.6	1.5 2.25	1.6 2.45	3
Contact Type	Silver / Gold	Silver	Silver	Silver	Silver	Silver	Silver / Gold	Silver / Gold
Max. Voltage (V)	32	32	32	32	24	32	32	50
Max. Switching Power (VA)	1	1	1	1	0.03	1	1 / 0.5	1 / 0.2
Life Cycles	200 000	300 000	300 000	300 000	10 000 000	300 000	100 000	100 000
IP Rating	IP40	IP67	IP67	IP67	IP67	IP67	IP40	
Page Number	B-67	B-73	B-74	B-75	B-76	B-87	B-90	B-92

* Other options available by request

Tactile Switches

Product Selection Guide

Tactile Switches B

Surface Mount Thru-Hole Options							
Series	K5AT	K8	K5V	KSF/KSI	KSA	KSA-V	KSA MKII
Footprint	G 8.4 x 10.8	G 8.4 x 10.8	8 x 9 x 17 / 9 x 13	7.62 x 5.08	7.62 x 5.08	7.62 x 2.54	7.62 x 5.08
Total Height (mm)	6.1	6	9 / 13	2.6	4.7 button option	8	4.7
Travel (mm)	0.5	0.45	1.2	0.3 to 0.5	0.3 to 0.5	0.3 to 0.5	0.3 to 0.5
Actuation Force (N)	4	4	4	1.3 3.0	1.6 5.0	1.3 3.0 5.0	1.3 3.0 5.0
Contact Type	Gold	Silver	Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold
Max. Voltage (V)	32	32	32	32	32	32	32
Life Cycles	100 000	300 000	25 000	100 000	100 000	100 000	100 000 1 000 000
IP Rating	IP40	IP40	IP40	IP60	IP60	IP60	IP67
Page Number	B-97	B-99	B-102	B-106	B-108	B-108	B-113

Surface Mount Thru-Hole Options							
Series	KSL	KSL-V	KSJ	KSJ-V	PTS635	PTS636	PTS641
Footprint	7.62 x 5.08	7.62 x 2.54	7.62 x 5.08	7.62 x 2.54	6 x 3,5 7 x 2,5	6 x 3.5	6.3 x 6.4
Total Height (mm)	9.9	8	6.65	8	2,5 4,3 5	2.5 4.3 5.0	2.5 3.1 3.4
Travel (mm)	0.3 to 0.5	0.3 to 0.5	0.55 to 0.7	0.55 to 0.7	0.25	0.25 to 0.30	0.20 / 0.30
Actuation Force (N)	1.3 3.0	1.3 3.0	2.0 3.0	2.0 3.0	130 gf 200 gf 260 gf	1.3; 1.80 2.5; 3.2	160 gf 250 gf 320 gf
Contact Type	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver	Silver	Silver
Max. Voltage (V)	32	32	32	32	12	12	12
Life Cycles	100 000	100 000	100 000 30 000	100 000 30 000	20 000	20 000 to 100 000	100 000
IP Rating	IP60	IP60	IP60	IP60	IP40	IP40	IP40
Page Number	B-108	B-108	B-115	B-115	B-117	B-119	B-126

Tactile Switches Product Selection Guide

Surface Mount Thru-Hole Options							
Series	PTS645	PTS645-V	PTS647	PTS125	ITS	ILS	TLS
Footprint	6 x 6	7.0 x 2.5	4.5 x 4.5	12 x 12	variety of sizes available	variety of sizes available	8.6 x 8.4
Total Height (mm)	4.3; 5.0; 7.0; 9.5;	7.1	3.8 5.0 7.0	4.3 7.3 Sq. 8.5 12.0			3.95
Travel (mm)	0.25	0.25	0.25	0.30	0.25	0.25	0.9
Actuation Force (N)	1.3; 1.6 2.0; 2.6	1.3; 1.6 2.0; 2.6	1; 1.8 2.5	1.6 2.6	160 gf	180 gf 250 gf	4; 7; 10
Contact Type	Silver	Silver	Silver	Silver	Silver	Silver	Silver
Max. Voltage (V)	12	12	12	12	12	12	16
Life Cycles	100 000	100 000	100 000	200 000	50 000	100 000	300 000 to 500 000
IP Rating	IP40	IP40	IP40	IP40	IP40	IP40	IP54
Page Number	B-128	B-136	B-138	B-140	B-144	B-153	B-156

B

Tactile Switches

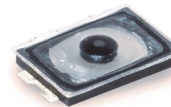
KXT3 Series Ultra Low Profile Top Actuated

Features

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

Typical Applications

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



Tactile Switches

Specification

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

Mechanical

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

Electrical

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

Environmental

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

Process

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

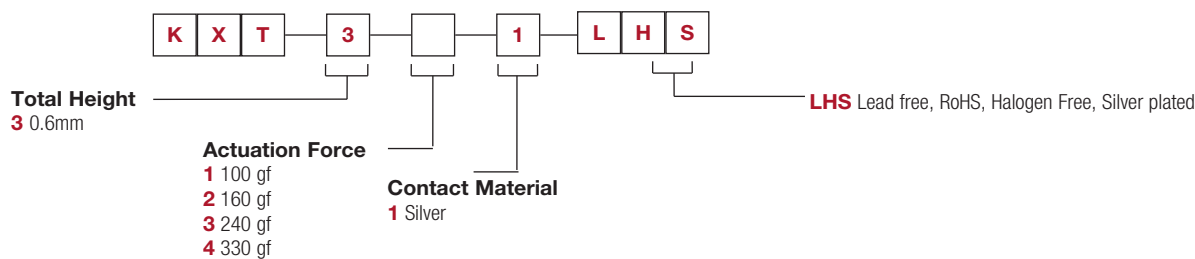
Packaging

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

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

Part Number Description

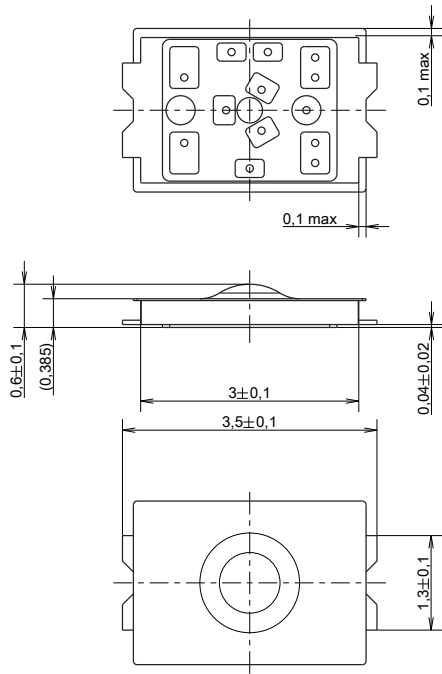
For any part number different from those listed above, please consult your local representative.



KXT3 Series Ultra Low Profile Top Actuated

Tactile Switches

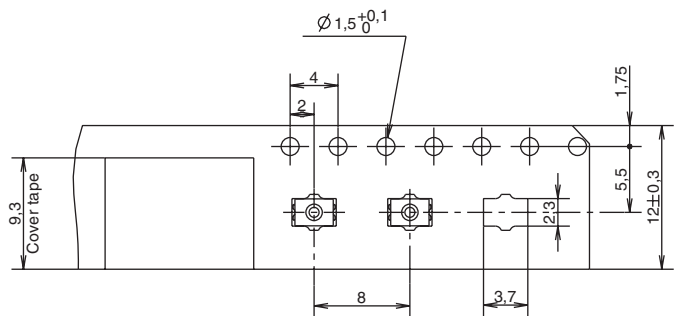
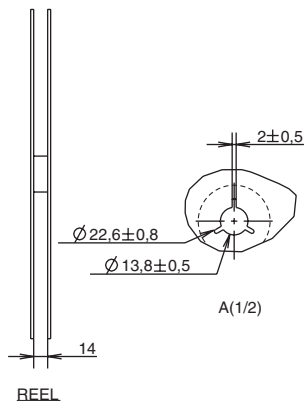
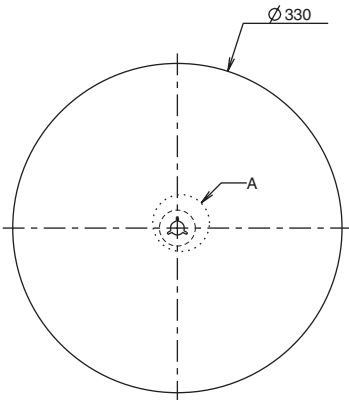
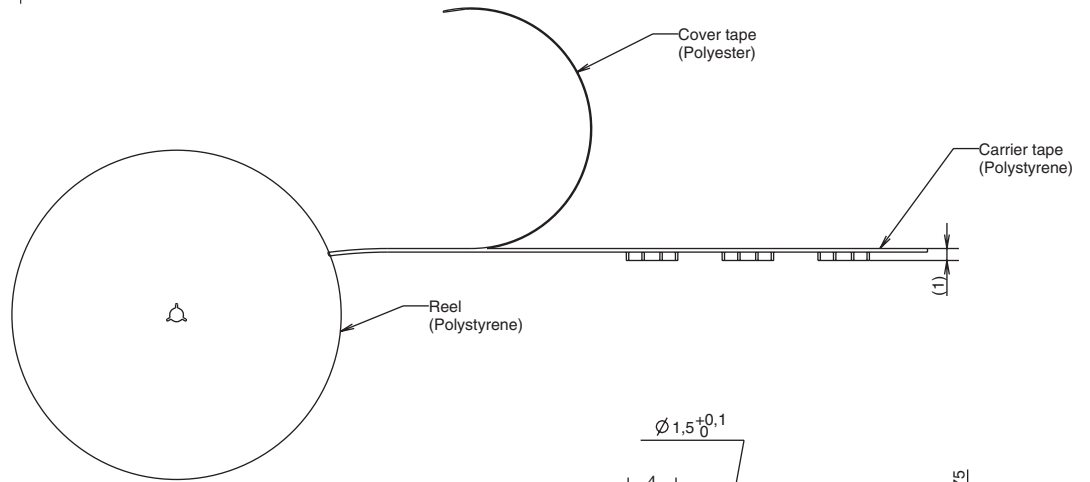
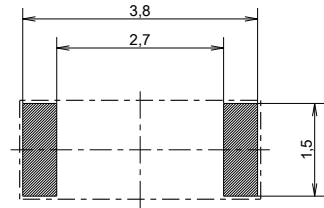
B



SCHEMATIC



RECOMMENDED PCB LAYOUT



CARRIER TAPE

NOTE:



16 Sep 19

Dimensions are shown: mm
Specifications and dimensions subject to change

NEW

NanoT Series The Most Compact Nano Size Tact Switch

Features

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

Typical Applications

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



B

Tactile Switches

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

*PIP: Pin in Paste also called Pin Through Paste

Specifications

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

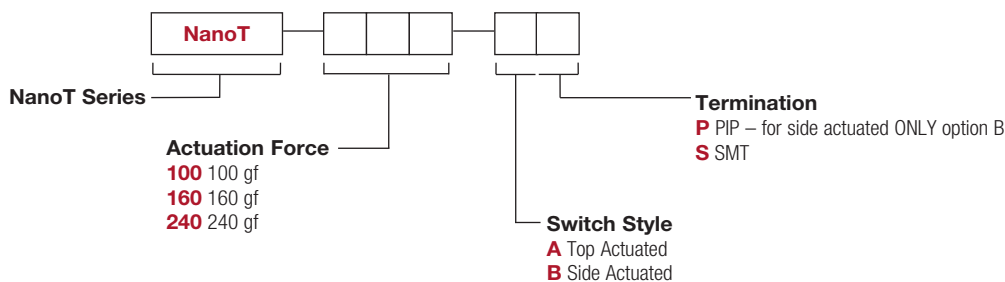
Packaging

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

How To Order

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

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



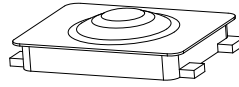
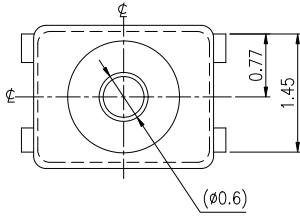
NanoT Series

The Most Compact Nano Size Tact Switch

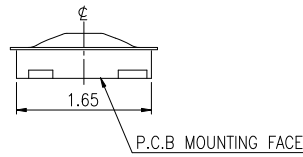
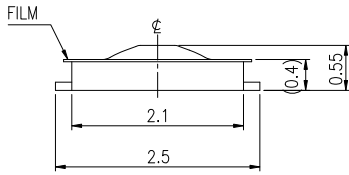
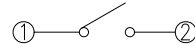
NEW

Tactile Switches

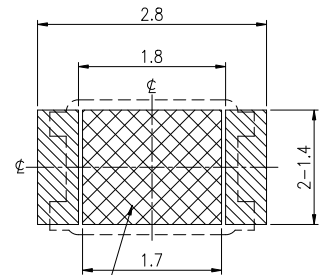
TOP ACTUATED



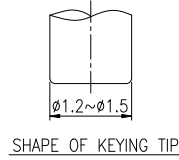
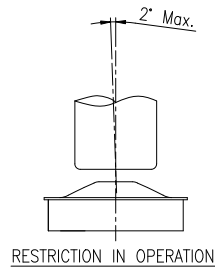
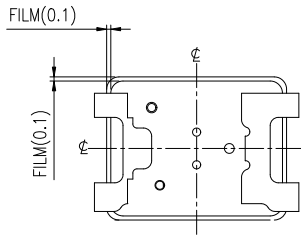
SCHEMATIC



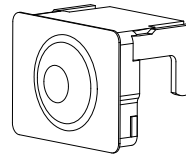
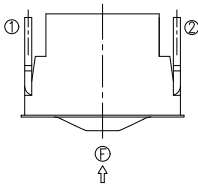
P.C.B. LAYOUT



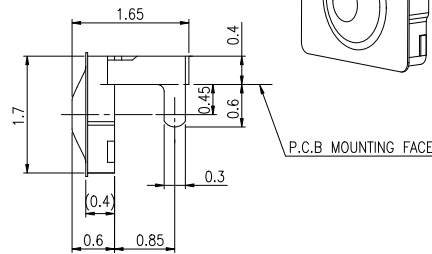
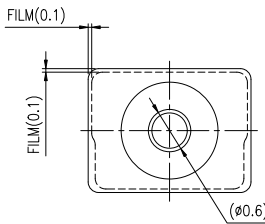
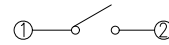
Any land pattern or vias should be prevented at area.



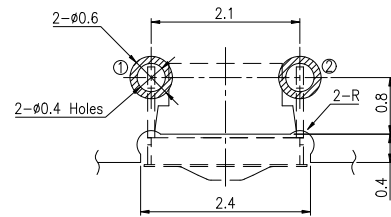
SIDE ACTUATED PIP



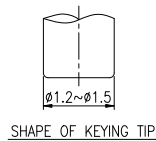
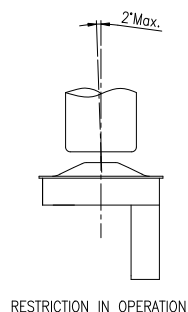
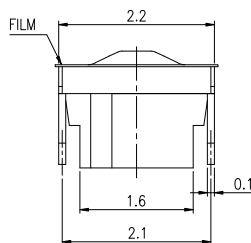
SCHEMATIC



P.C.B. LAYOUT



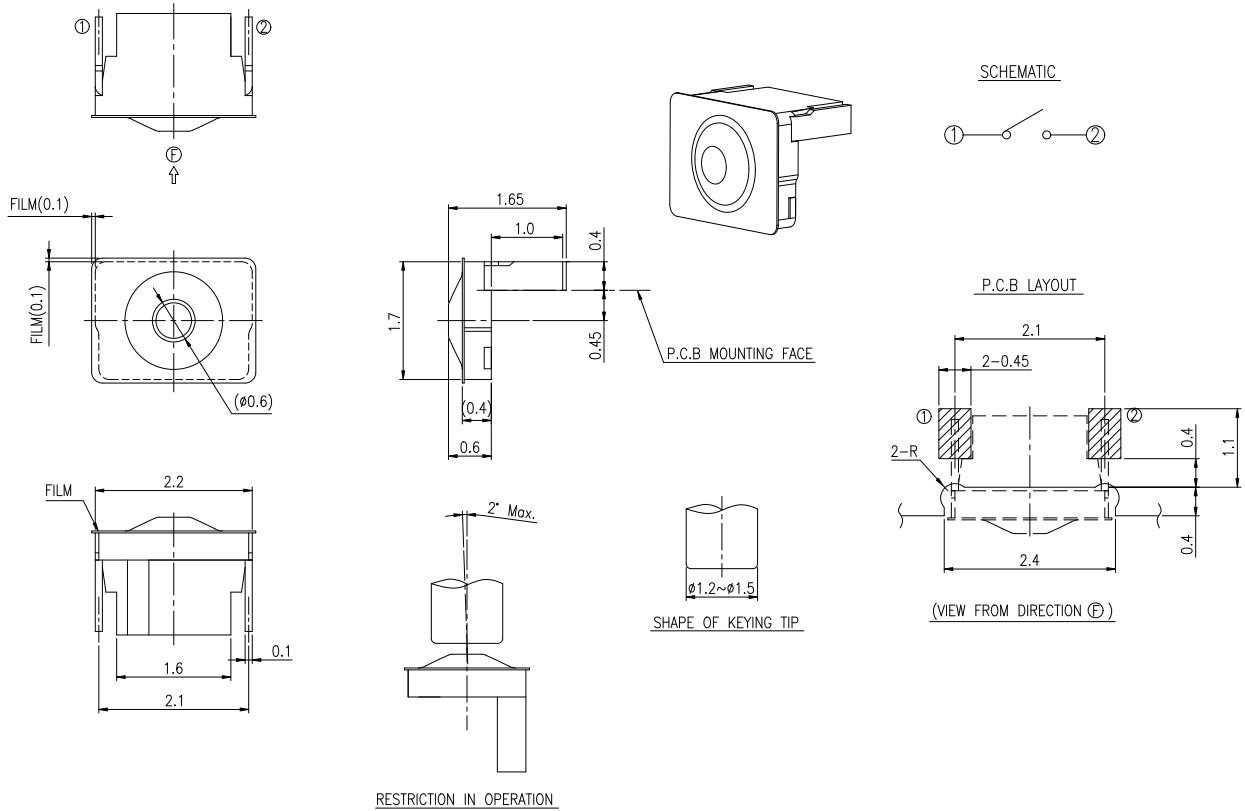
(VIEW FROM DIRECTION ①)



NEW

NanoT Series The Most Compact Nano Size Tact Switch

SIDE ACTUATED SMT



B

Tactile Switches

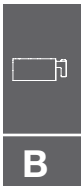
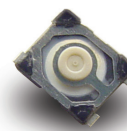
KMT2 Series Nano-Miniature SMT Top Actuated

Features

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

Typical Applications

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



B

Tactile Switches

Specification

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

Mechanical

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

Electrical

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

Environmental

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

Process

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

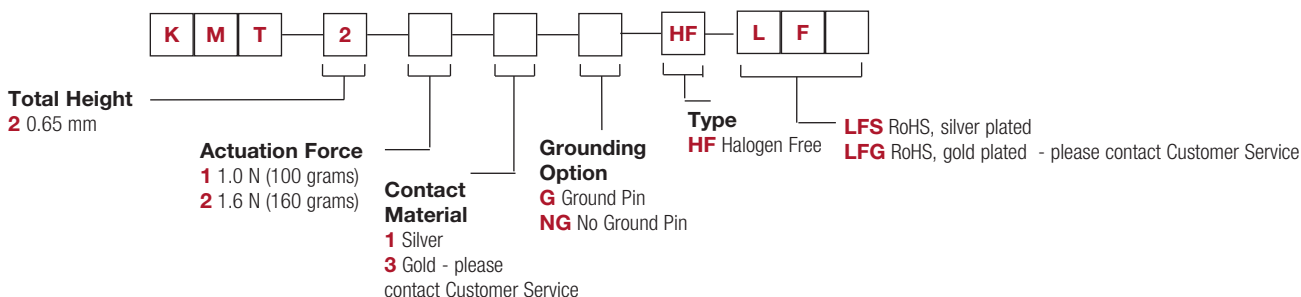
Packaging

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

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

Part Number Description

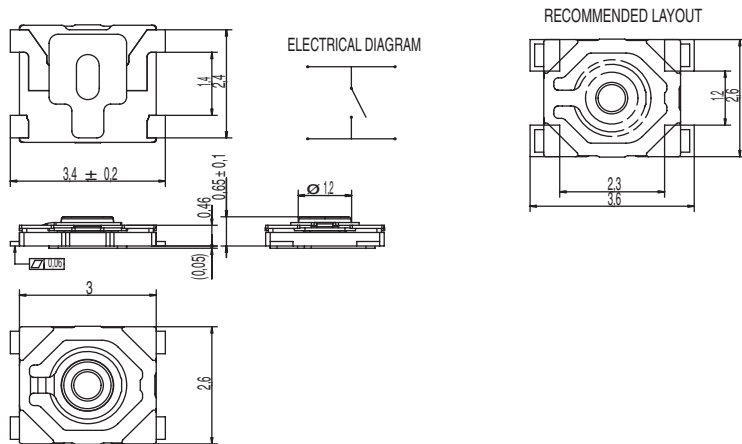
For any part number different from those listed above, please consult your local representative.



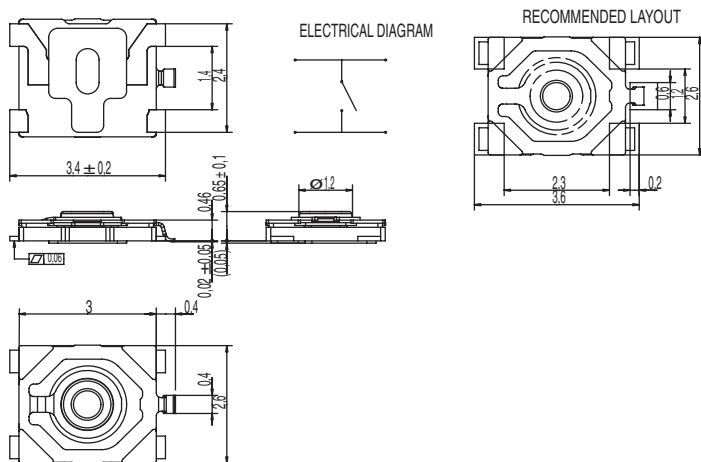
KMT2 Series Nano-Miniature SMT Top Actuated

Tactile Switches

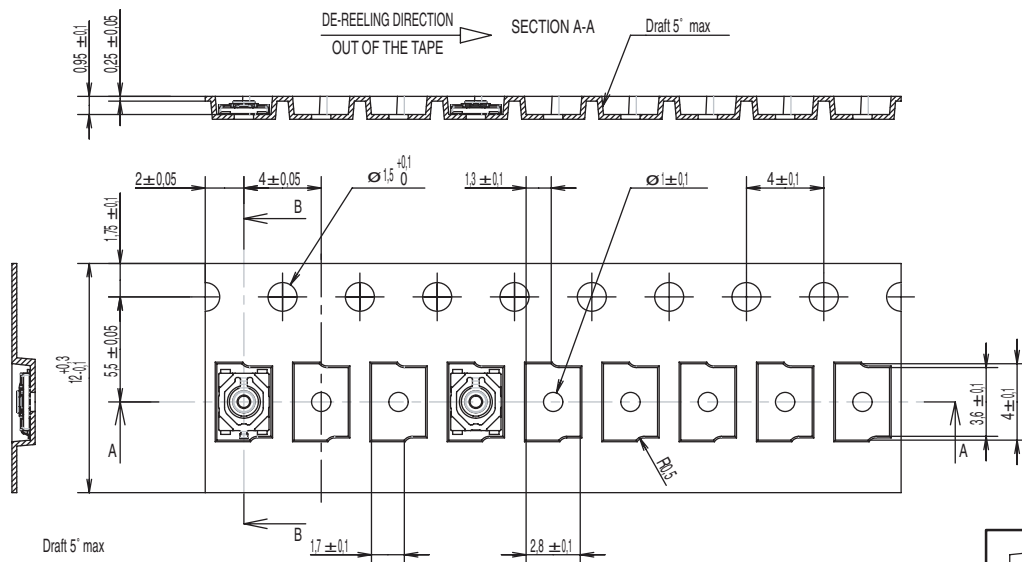
KMT Series – No Ground Pin



KMT Series – With Ground Pin



TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change



KMT0 Series Nano-Miniature SMT Top Actuated

Features

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

Typical Applications

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



B

Tactile Switches

Specification

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

Mechanical

TRAVEL (mm): 0.15 ± 0.1

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

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

Electrical

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

Environmental

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

Process

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

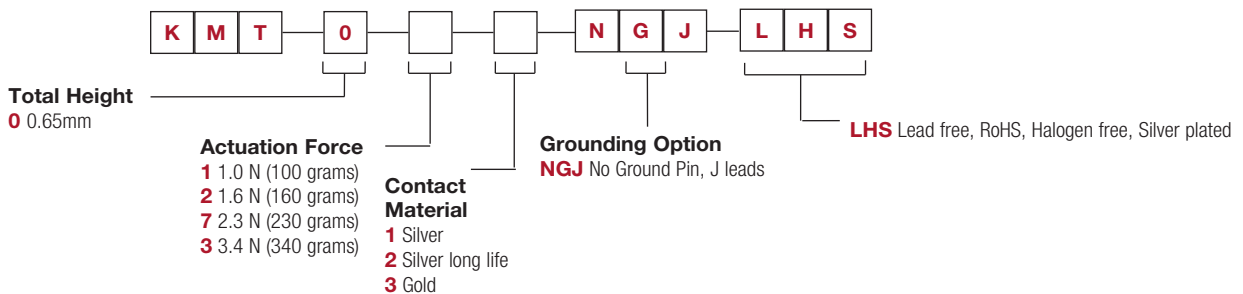
Packaging

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

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

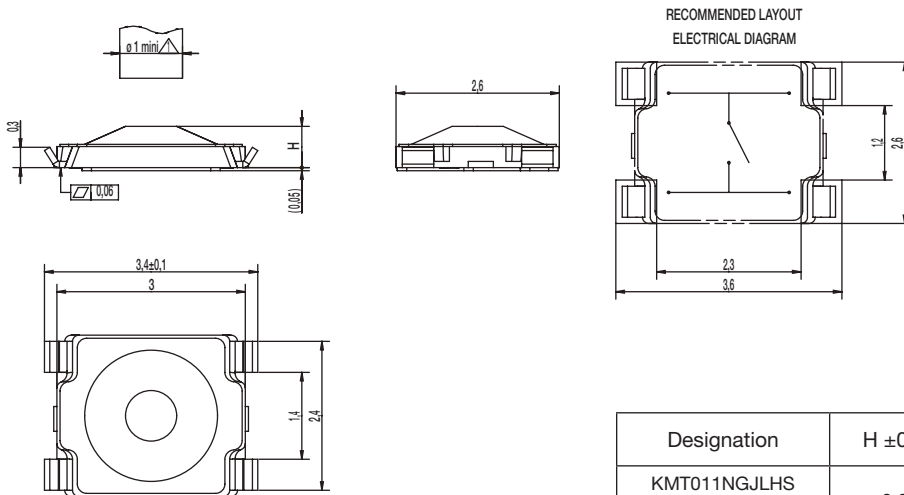
Part Number Description

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



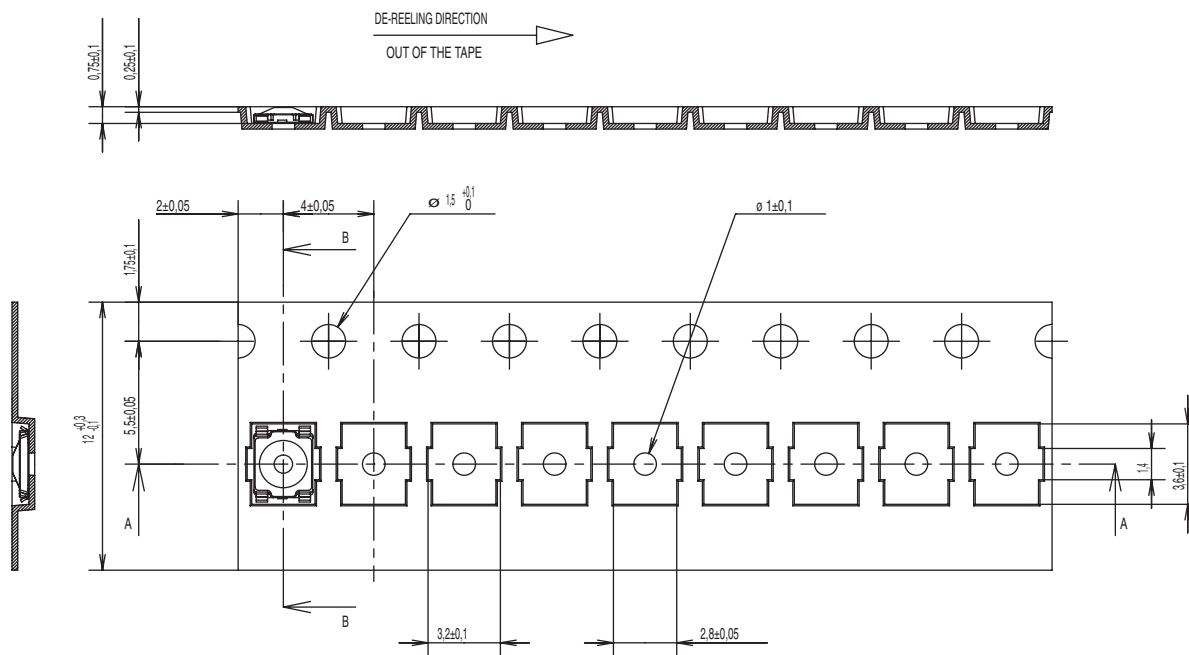
KMT0 Series Nano-Miniature SMT Top Actuated

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



Designation	H ±0.07
KMT011NGJLHS	0.63
KMT021NGJLHS	
KMT031NGJLHS	0.65
KMT071NGJLHS	

TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change

KMR 2 Series Microminiature SMT Top Actuated

Tactile Switches

Features/Benefits

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

Typical Applications

- Automotive
- Industrial electronics
- Medical equipment



Specification

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

Mechanical

Type G and NG 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

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

Packaging

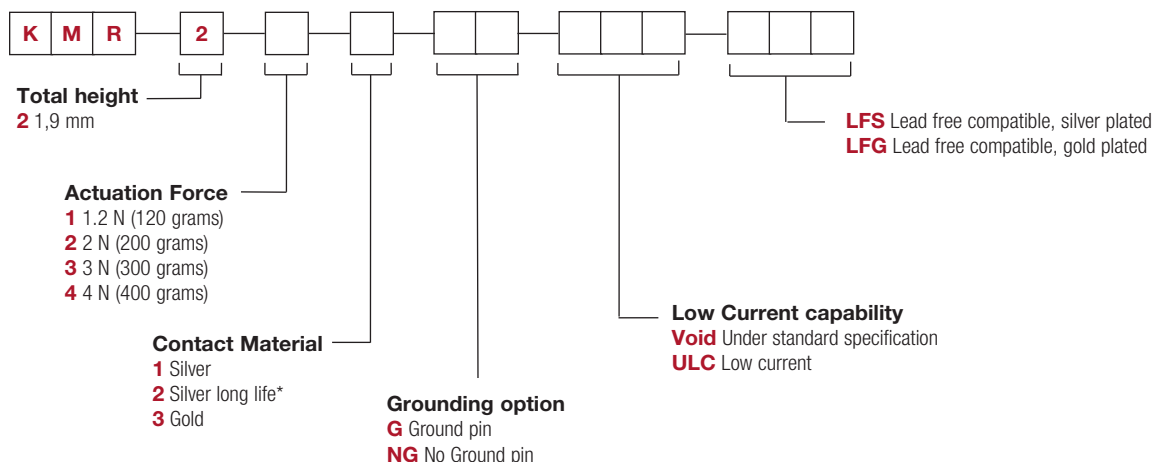
In reels of 7,000 pieces
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



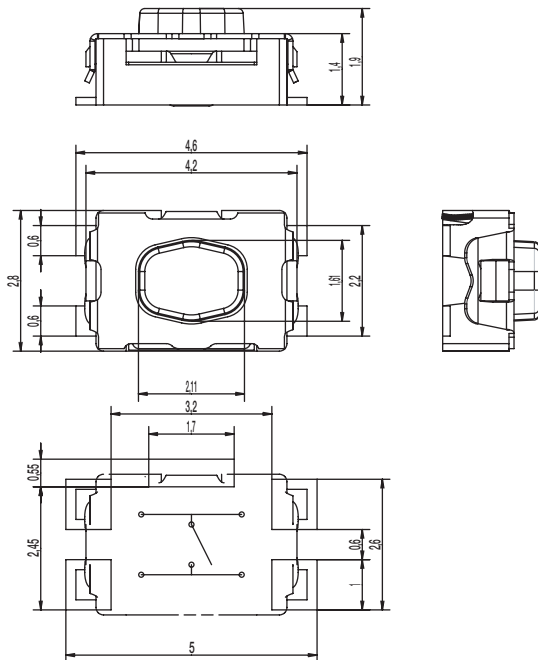
* Silver long life is available in 3N and 4N actuation force. For other versions, please contact Customer Service.



KMR 2 Series Microminiature Tact Switch for SMT

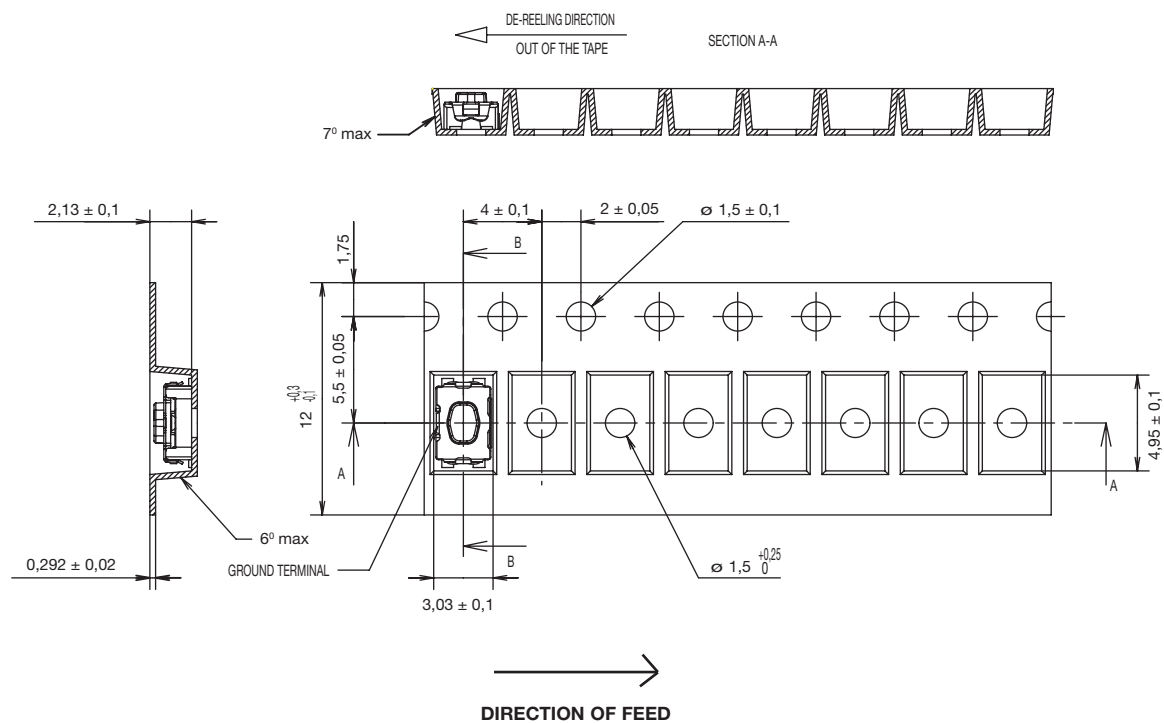
KMR 2 Series - 1.9 mm height

PCB layout shown with ground pin option



Tactile Switches

TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change



8 jun 16

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



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
KMR432ULC LFS	3.0 (300) ± 0.75	300,000	0.25 mm ± 0.1
KMR433 LFG	3.0 (300) ± 0.75	100,000	0.25 mm ± 0.1
KMR433ULC LFG	3.0 (300) ± 0.75	100,000	0.25 mm ± 0.1
KMR441 LFS	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR441 ULC LFS	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR442 LFS	4.0 (400) ± 1.00	200,000	0.30 mm ± 0.1
KMR442 ULC LFS	4.0 (400) ± 1.00	200,000	0.30 mm ± 0.1
KMR443 LFG	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1
KMR443 ULC LFG	4.0 (400) ± 1.00	100,000	0.30 mm ± 0.1

Electrical

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

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

Environmental

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

Process

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

Packaging

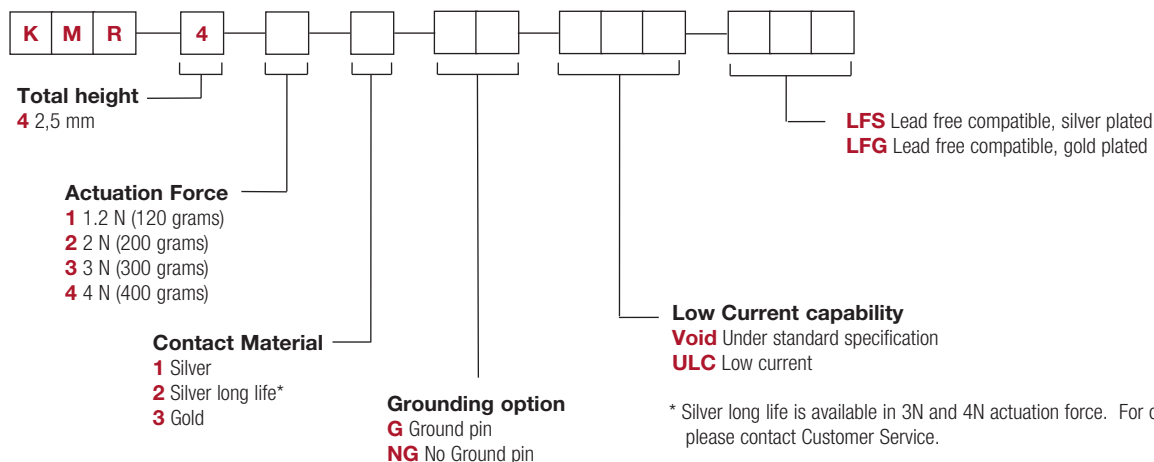
In reels of 6,000 pieces
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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

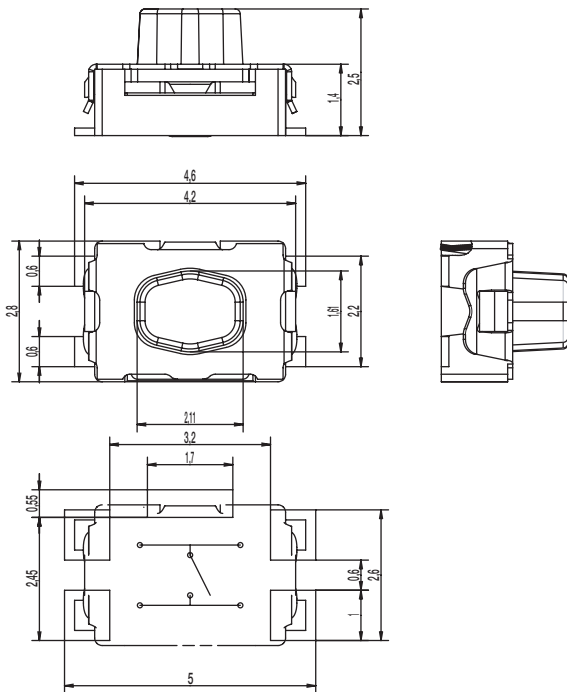


KMR 4 Series Microminiature Tact Switch for SMT

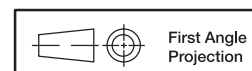
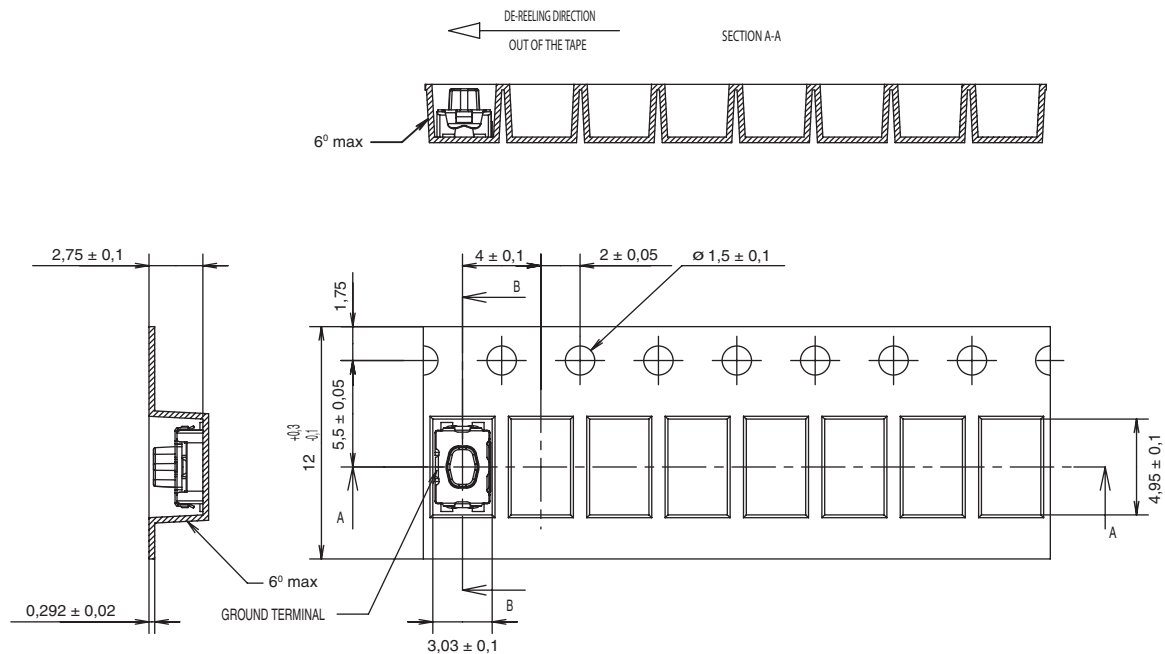
KMR 4 Series - 2.5 mm height

PCB layout shown with ground pin option

Tactile Switches



TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change

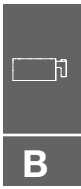
KMR 6 Series Microminiature SMT Top Actuated IP67

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



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

Electrical

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

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

Environmental

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

Process

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

Packaging

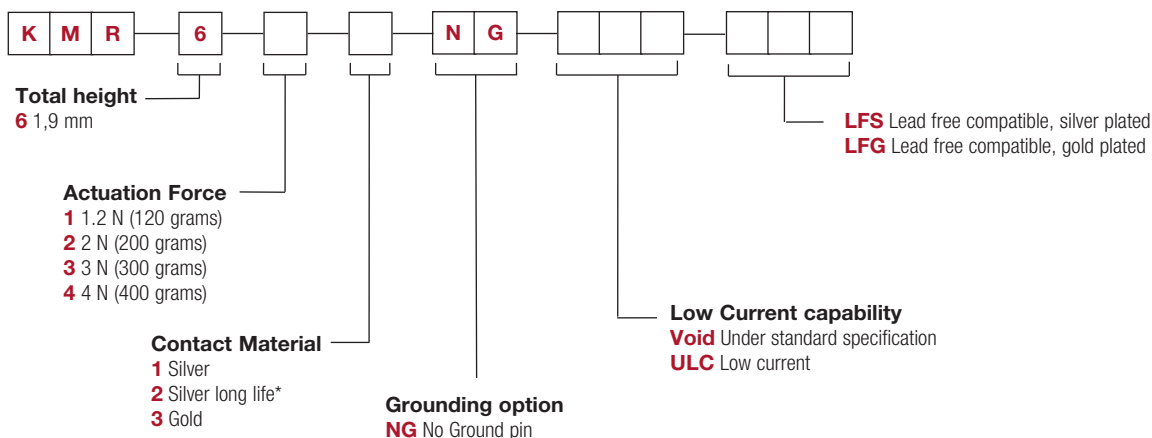
In reels of 7,000 pieces
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



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



Dimensions are shown: mm
Specifications and dimensions subject to change

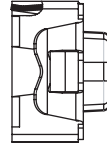
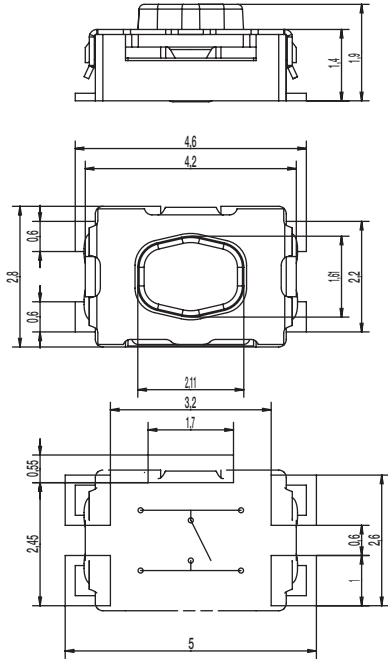
KMR 6 Series Microminiature SMT Top Actuated IP67

KMR 6 Series - 1.9 mm height

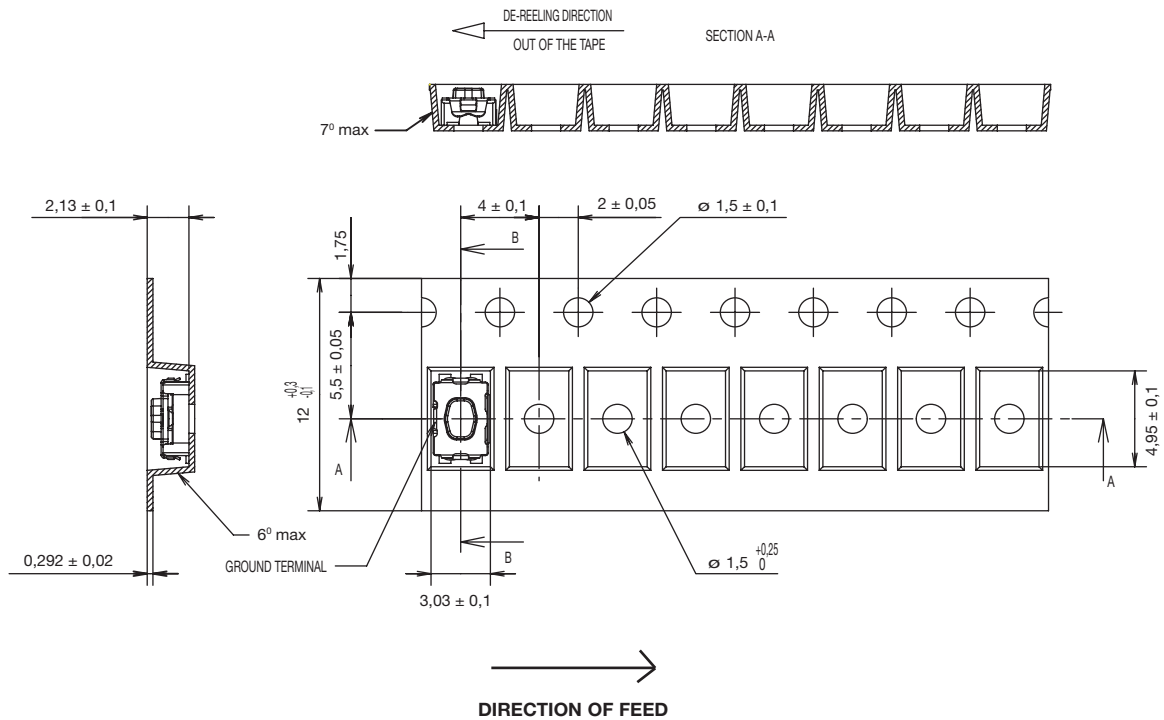
PCB layout shown with ground pin option

Tactile Switches

B



TAPE & REEL



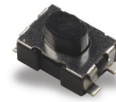
KMR 7 Series Microminiature SMT Top Actuated IP67

Features/Benefits

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

Typical Applications

- Automotive
- Medical
- Consumer
- Industrial



Tactile Switches

Specification

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

Mechanical

Type NG 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

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

Packaging

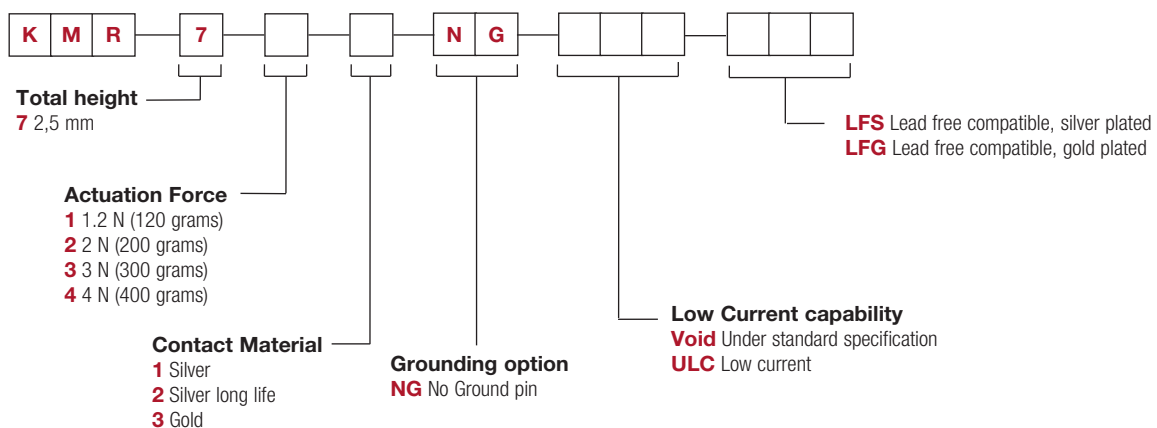
In reels of 6,000 pieces
External diameter 330 mm ± 2 mm

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

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

Part Number Description

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



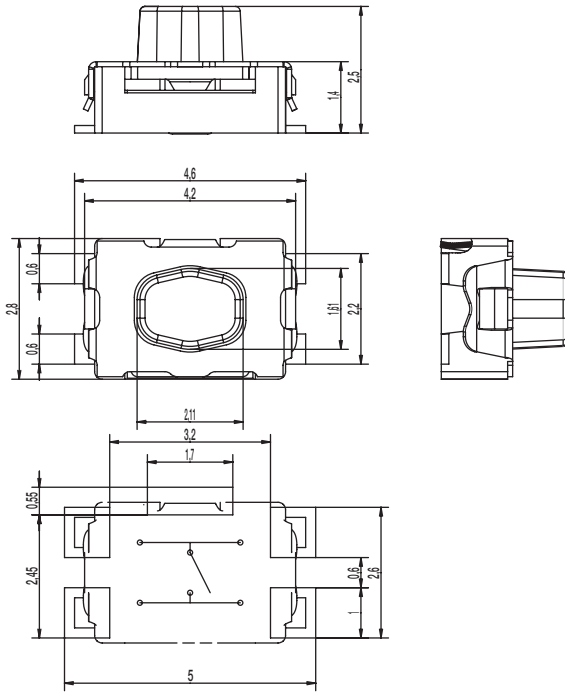
* Silver long life is available in 3N and 4N actuation force. For other versions, please contact Customer Service.

KMR 7 Series Microminiature SMT Top Actuated IP67

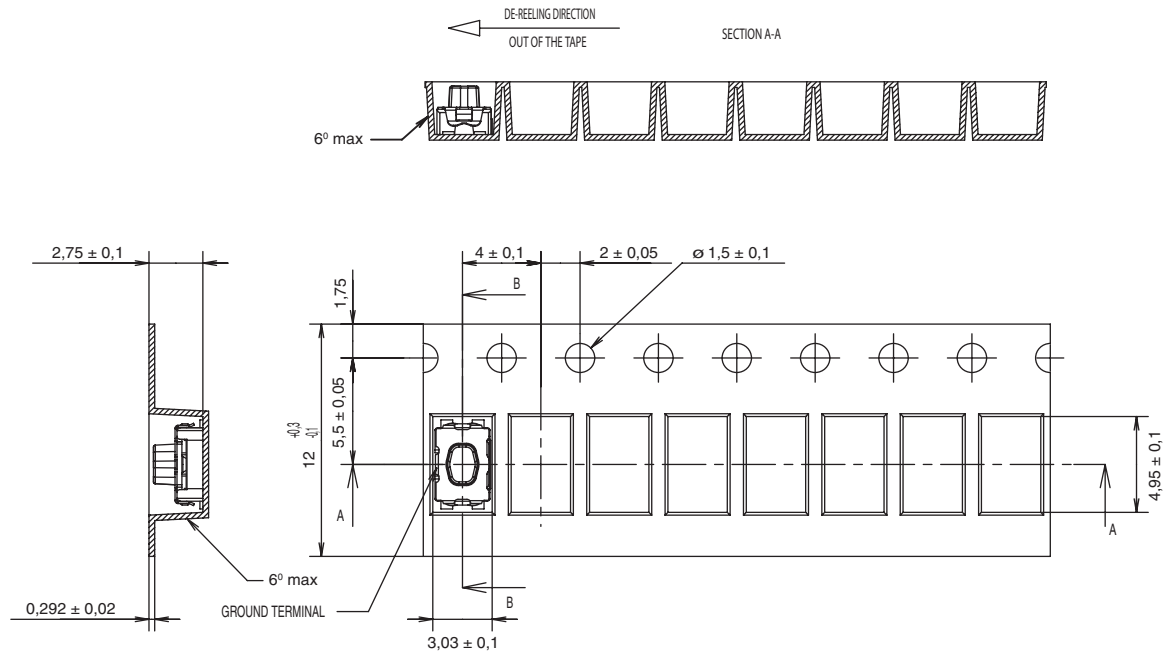
KMR 7 Series - 2.5 mm height

PCB layout shown with ground pin option

Tactile Switches



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

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

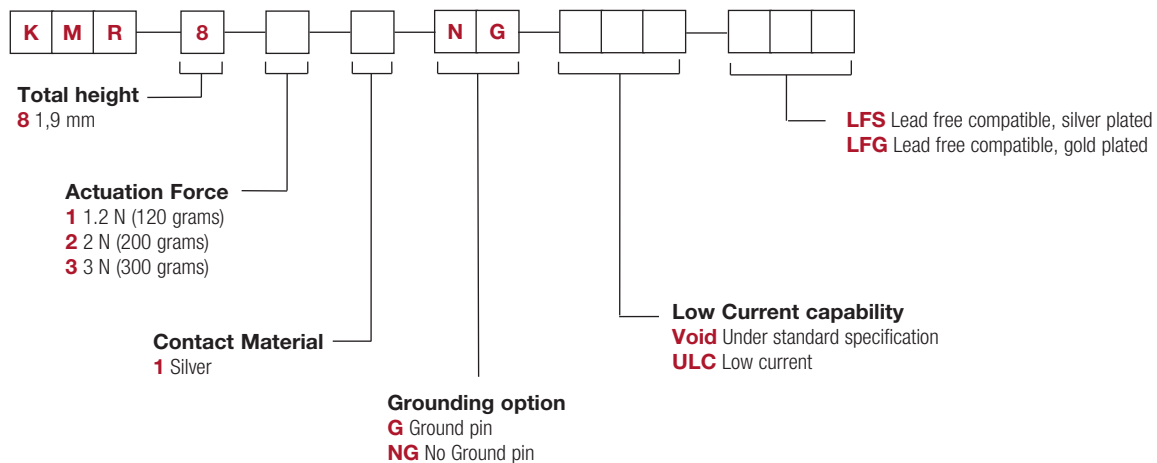
Packaging

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

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

Part Number Description

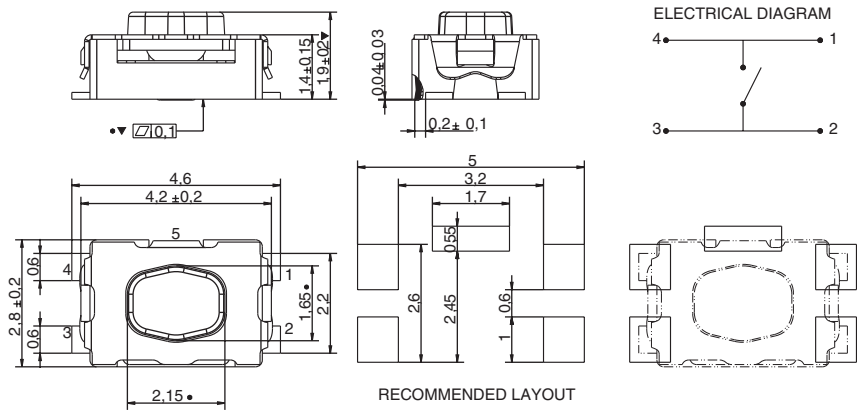
For any part number different from those listed above, please consult your local representative.



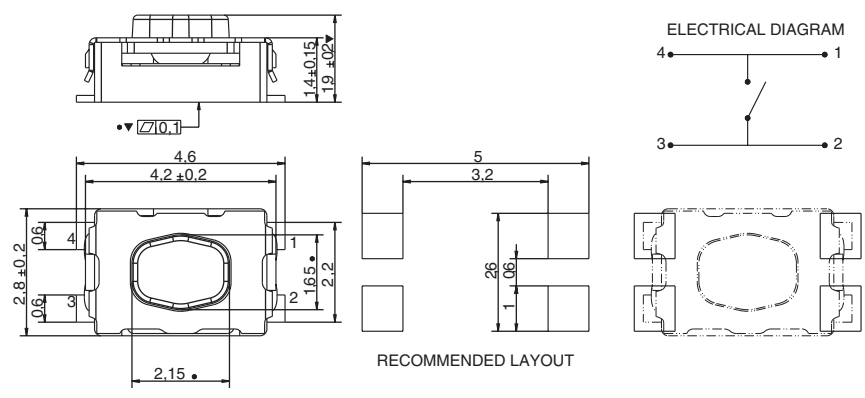
KMR 8 Series Microminiature SMT Top Actuated

Tactile Switches

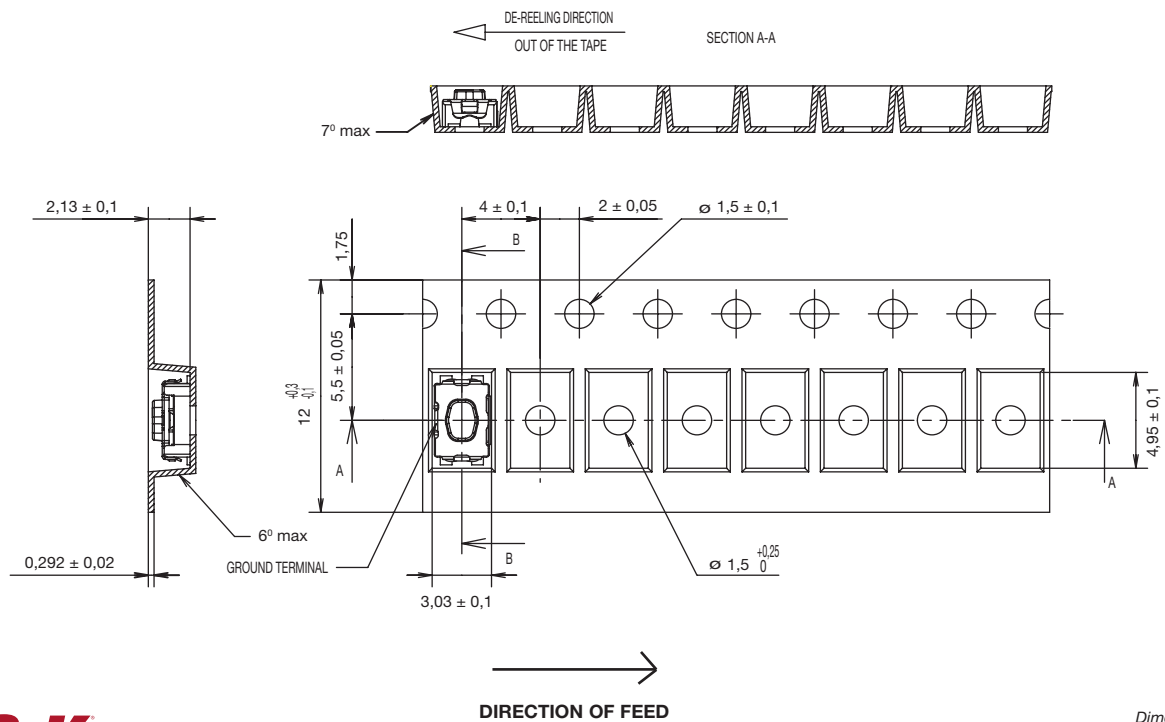
G - Ground Pin



NG - No Ground Pin



TAPE & REEL



KMS Series Microminiature SMT Side Actuated

Features/Benefits

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

Typical Applications

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



Specification

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

Mechanical

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

Type	Operating force 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

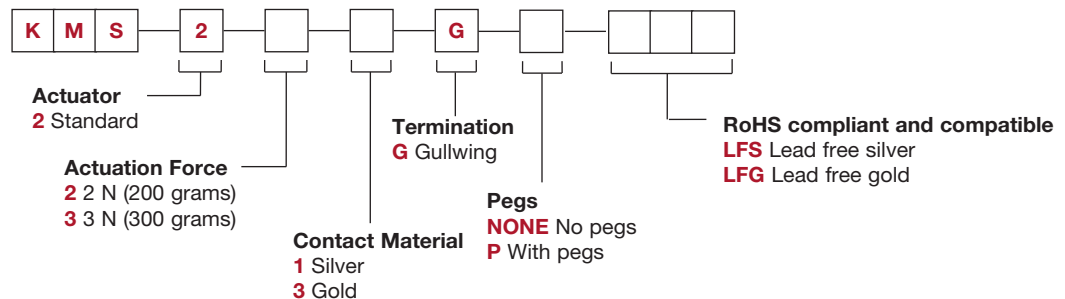
	Silver	Gold
OPERATING TEMPERATURE:	-40°C to 85°C	-40°C to 125°C
STORAGE TEMPERATURE:	-55°C to 85°C	-55°C to 125°C

Process

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

How To Order

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

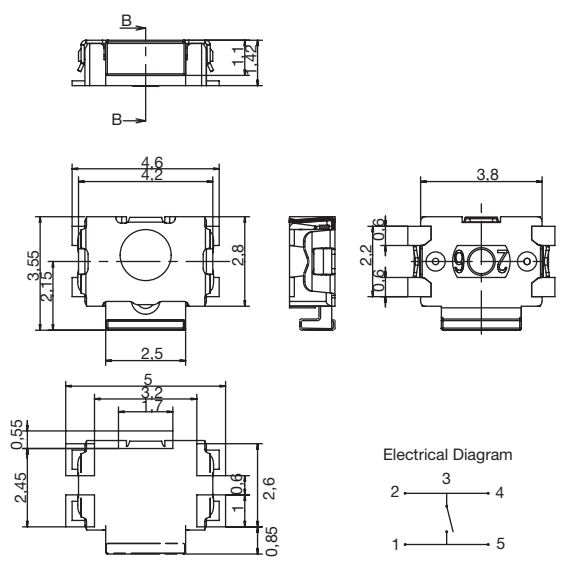


KMS Series Microminiature SMT Side Actuated

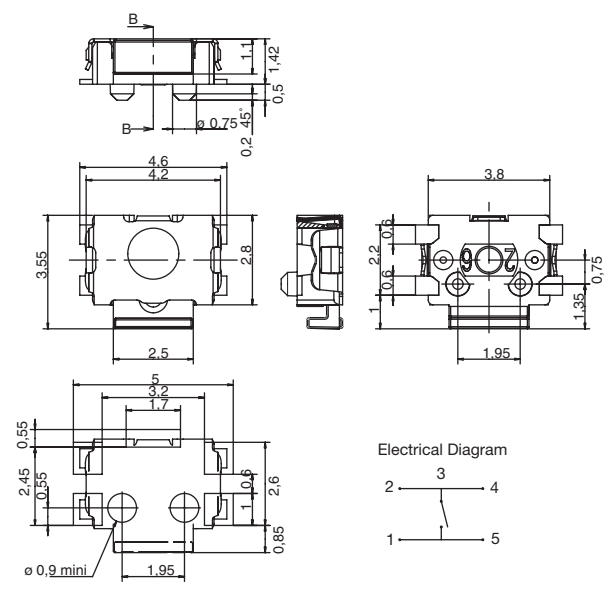
Tactile Switches

B

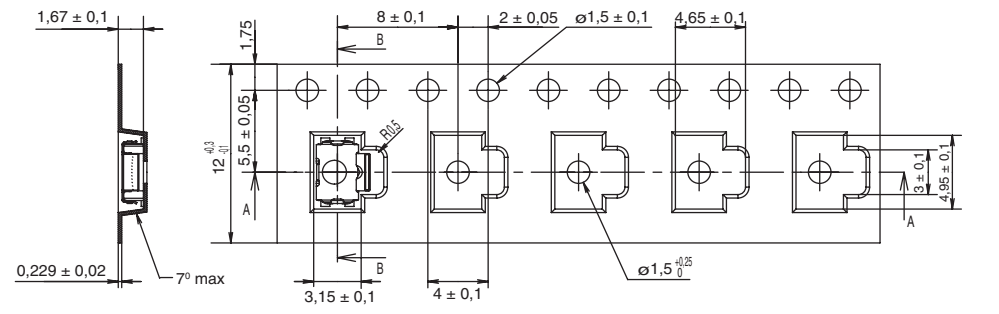
KMS



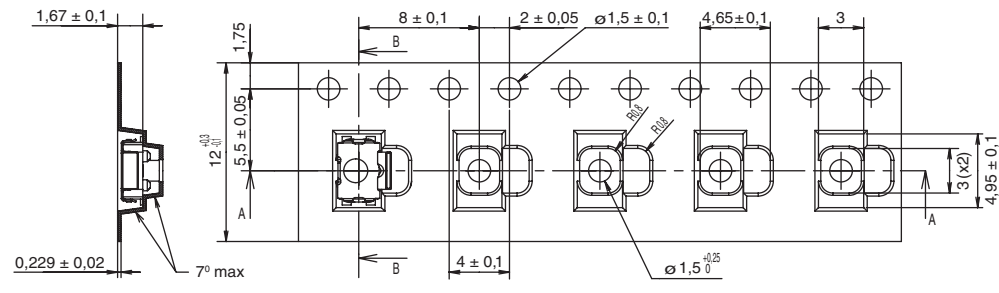
KMS WITH PEGS



TAPE & REEL



WITH PEGS



→
DIRECTION OF FEED



Dimensions are shown: mm
Specifications and dimensions subject to change



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: ≤ 100 mΩ
INSULATION RESISTANCE: ≥ 100 MΩ
BOUNCE TIME: ≤ 10 ms

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

Process

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

Packaging

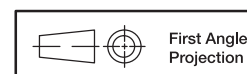
Switches in reels of:
5,000 pieces in 0.8 mm height
4,000 pieces in 1.5 mm height
Dimensions of reels according to EIA 481B
External diameter 330 mm

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

How To Order

Please see chart below for full part numbers.

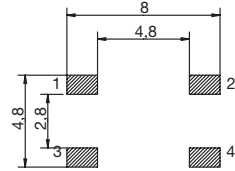
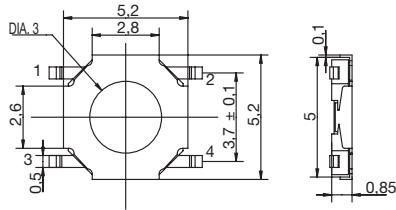
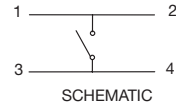
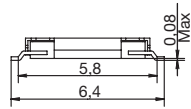
Part Number	Height (mm)	Leads Shape	Ground Pin	Force	Travel (mm)	Operating Life
PTS525 SM08 SMTR 2 LFS	0.8	G	No	160 gf ± 50 gf	0.25 ± 0.2	1,000,000
PTS525 SK08 SMTR 2 LFS	0.8	G	No	260 gf ± 50 gf	0.25 ± 0.2	200,000
PTS525 SM15 SMTR 2 LFS	1.5	G	No	160 gf ± 50 gf	0.25 ± 0.2	1,000,000
PTS525 SK15 SMTR 2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



Dimensions are shown: mm
Specifications and dimensions subject to change

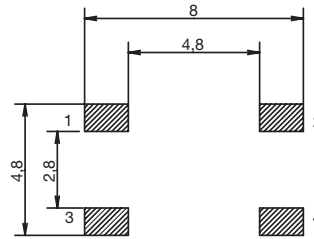
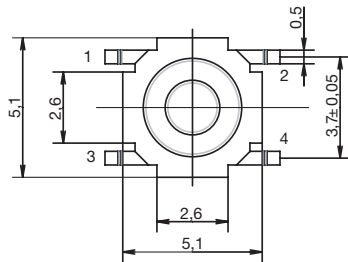
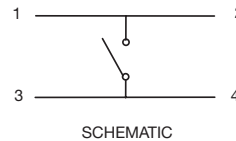
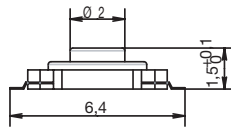
PTS 525 Series Microminiature Tact Switch for SMT

PTS525 SM08 SMTR2 LFS
PTS525 SK08 SMTR2 LFS



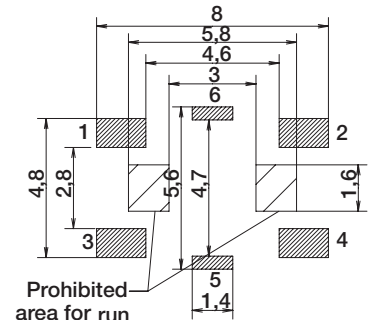
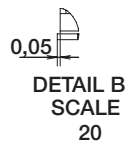
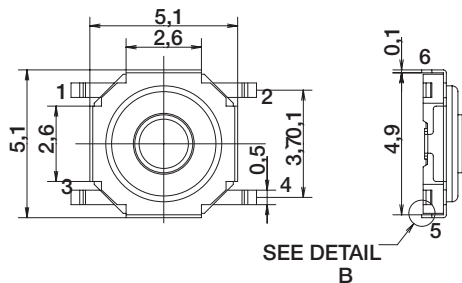
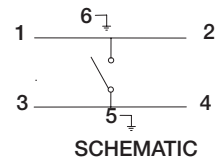
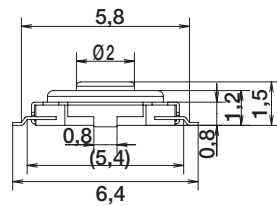
RECOMMENDED PCB LAYOUT

PTS525 SM15 SMTR2 LFS
PTS525 SK15 SMTR2 LFS



RECOMMENDED PCB LAYOUT

PTS525 SMG15 SMTR2 LFS
PTS525 SKG15 SMTR2 LFS



RECOMMENDED PCB LAYOUT

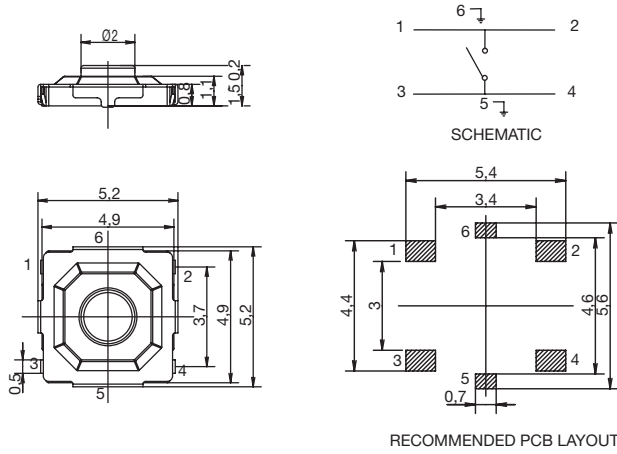


Dimensions are shown: mm
Specifications and dimensions subject to change

Tactile Switches

PTS 525 Series Microminiature Tact Switch for SMT

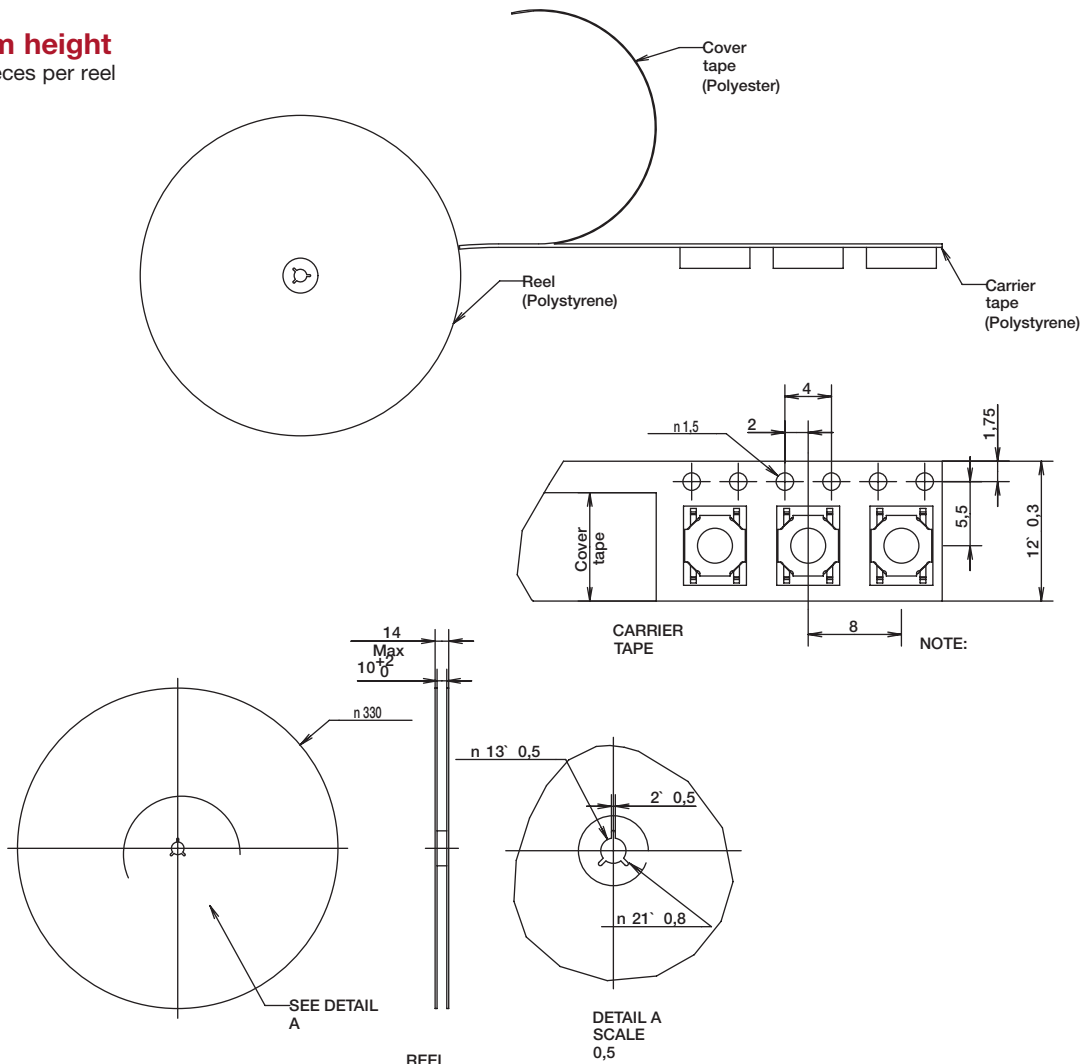
PTS525 SMG15J SMTR2 LFS
PTS525 SKG15J SMTR2 LFS



B
Tactile Switches

TAPE & REEL

0.8 mm height
5,000 pieces per reel



Dimensions are shown: mm
Specifications and dimensions subject to change

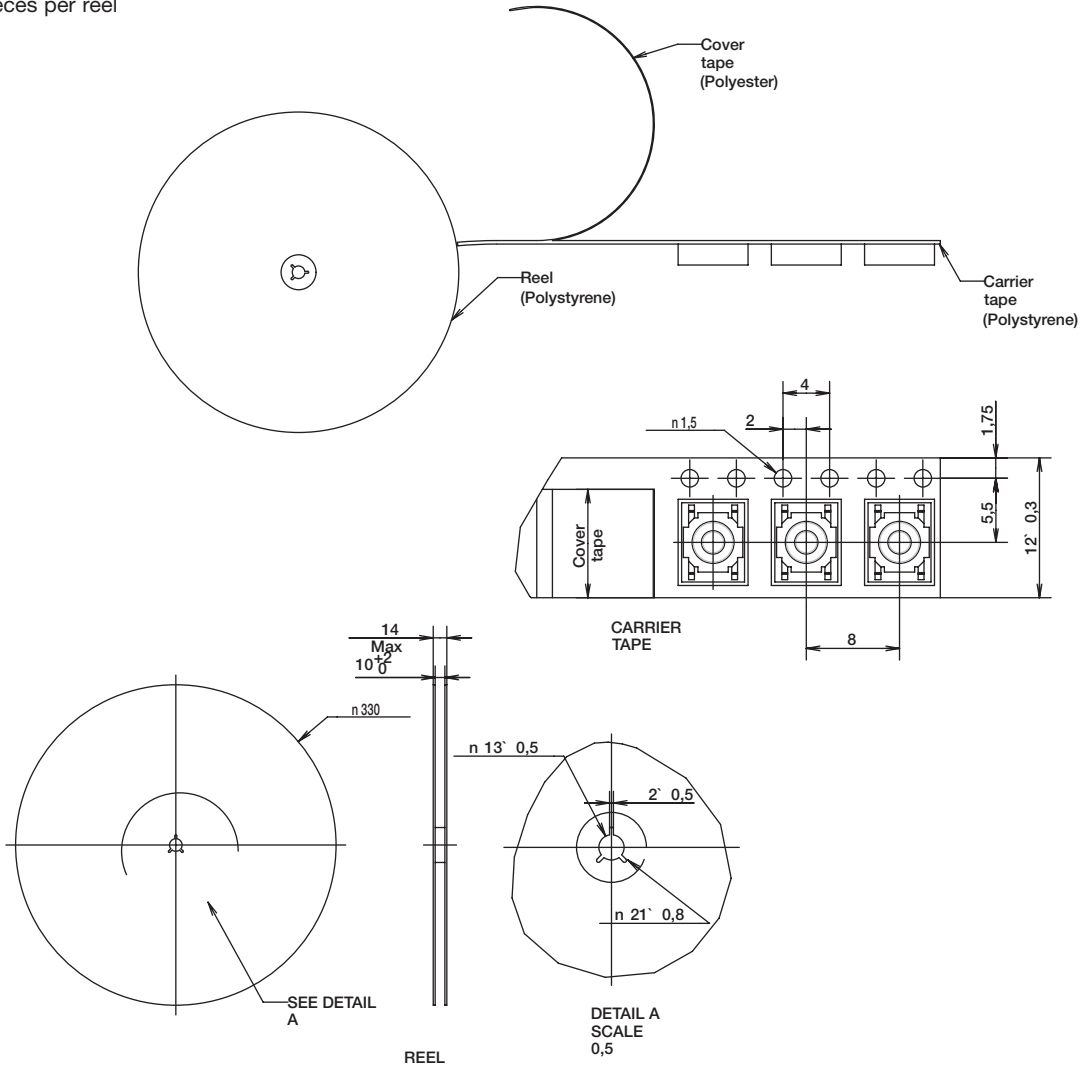
PTS 525 Series Microminiature Tact Switch for SMT

TAPE & REEL

1.5 mm height
4,000 pieces per reel

Tactile Switches

B



NEW

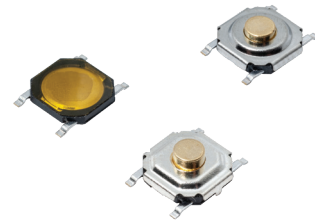
PTS 526 Series Microminiature SMT Top Actuated

Features/Benefits

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

Typical Applications

- IoT devices
- Home automation
- Remote controls



Specifications

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

XXXX to be defined below	Operation force (gf)	Operating life (operations)
PTS526 SM XXXX SMTR2 LFS	160 ± 50	500,000
PTS526 SK XXXX SMTR2 LFS	250 ± 50	200,000
PTS526 SP XXXX SMTR2 LFS	320 ± 50	100,000

Electrical

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

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

Process

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

Packaging

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

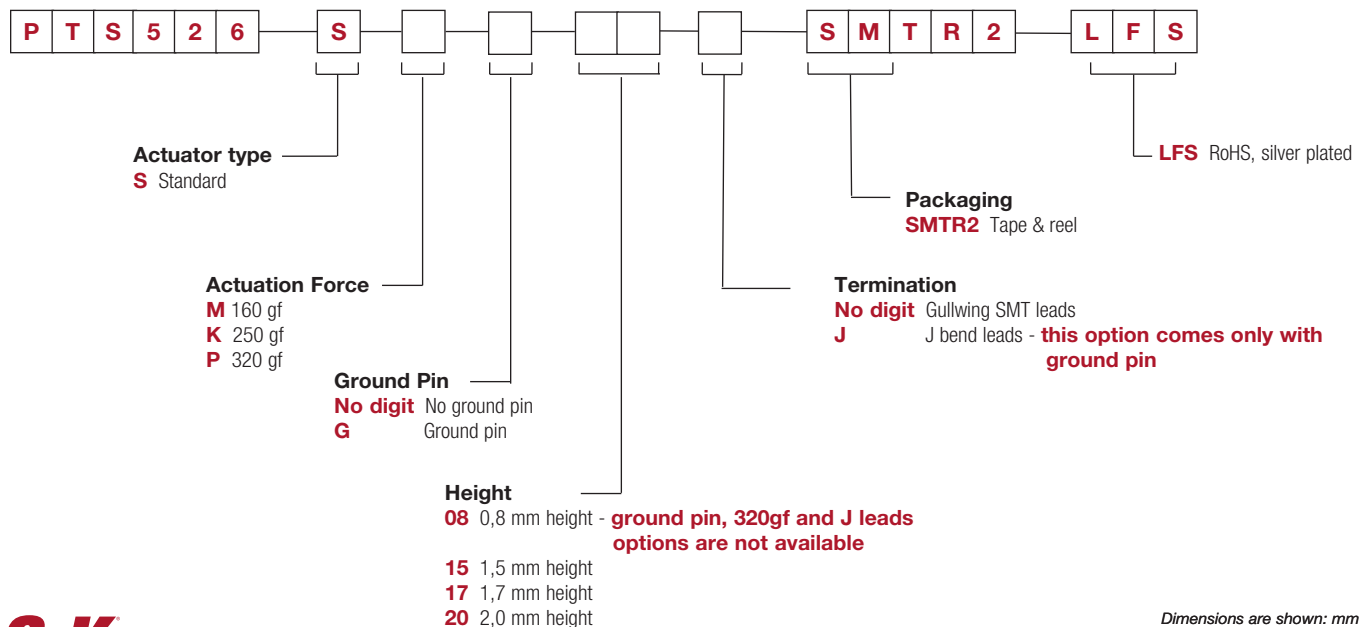
NOTE: Specifications listed above are for switches with standard options.
 For information on specific and custom switches, consult Customer Service Center.

B
Tactile Switches

How To Order

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

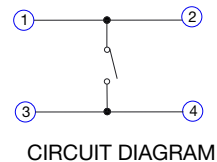
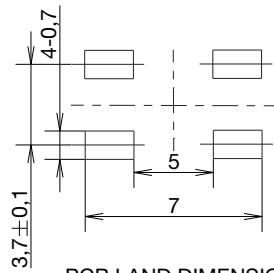
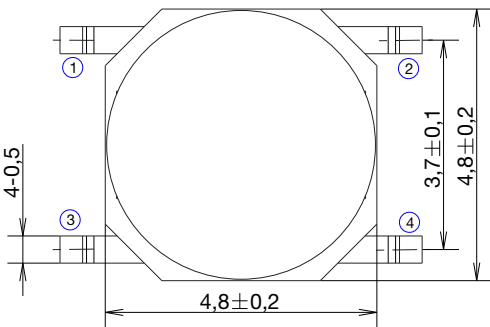
For any part number different from those listed above, please consult your local representative.



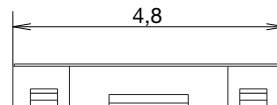
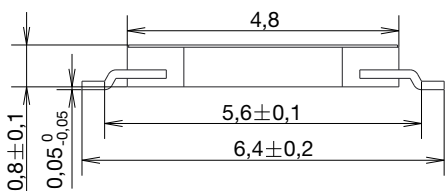
PTS 526 Series Microminiature SMT Top Actuated

NEW

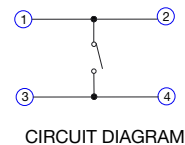
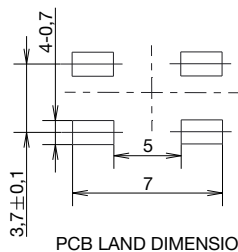
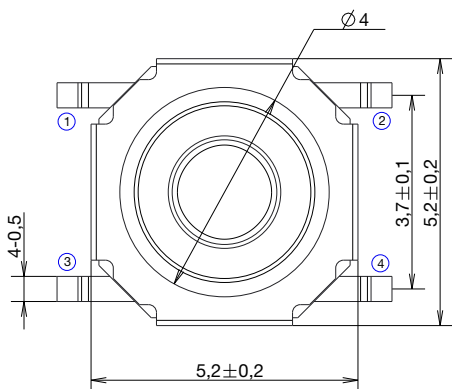
0.8 mm height – G leads lead only, no ground pin



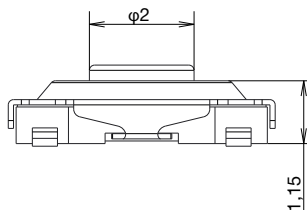
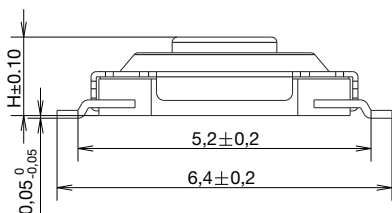
PCB LAND DIMENSION



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



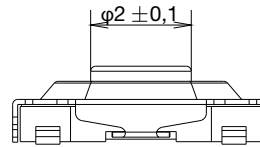
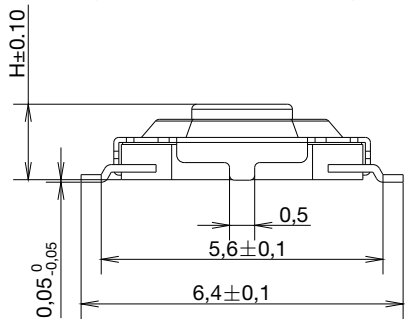
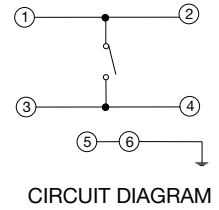
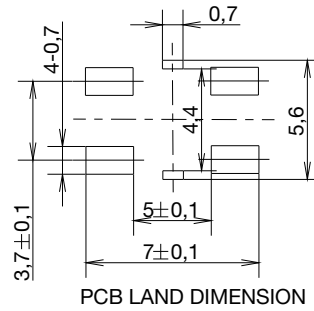
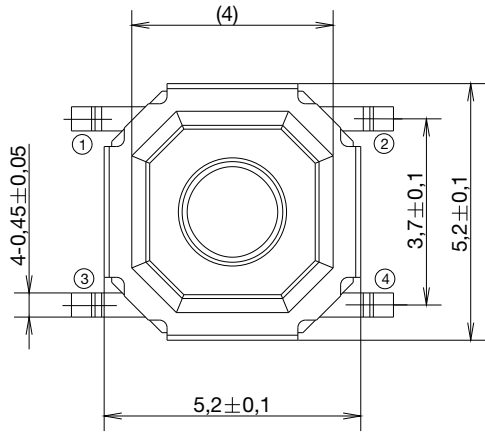
PCB LAND DIMENSION



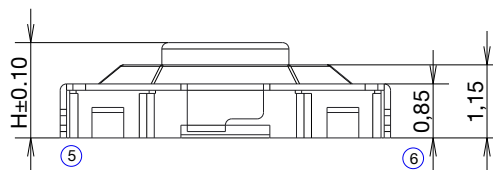
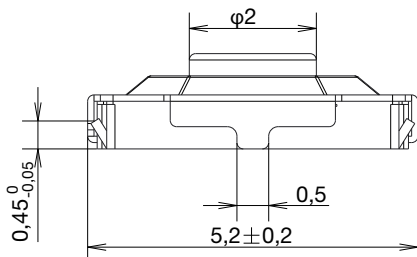
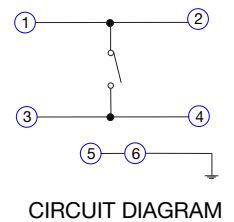
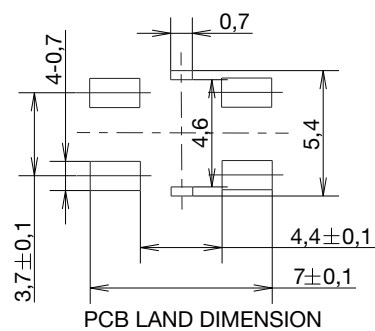
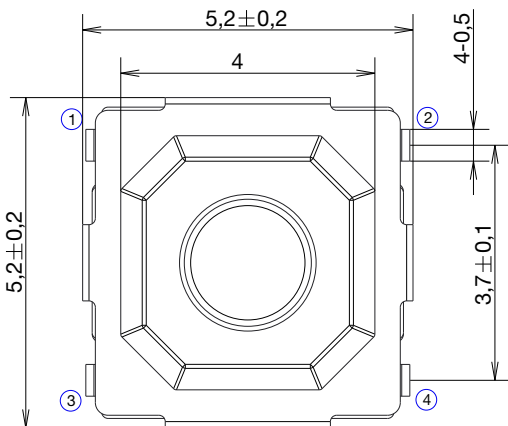
NEW

PTS 526 Series Microminiature SMT Top Actuated

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



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

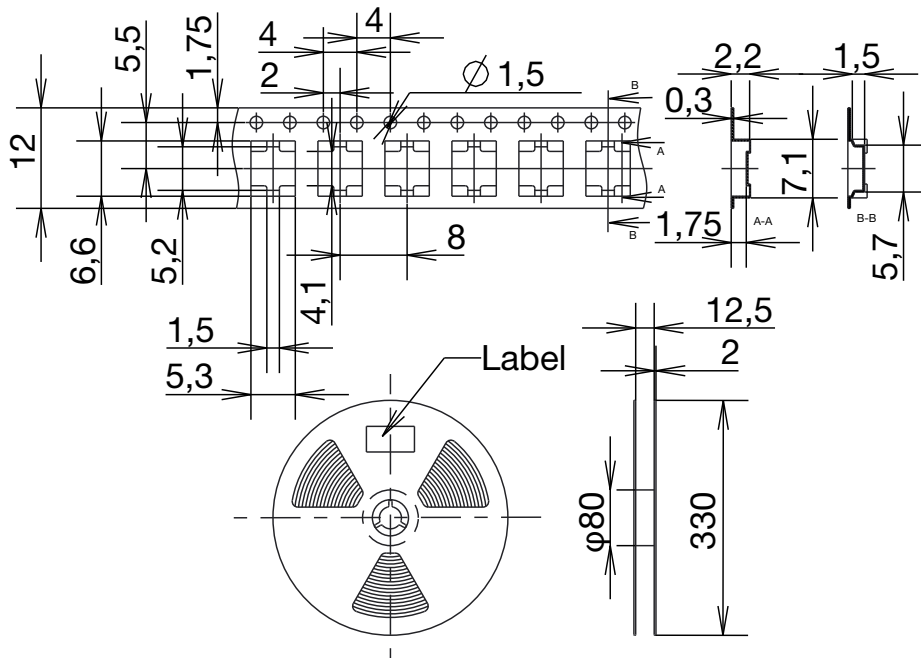


PTS 526 Series Microminiature SMT Top Actuated

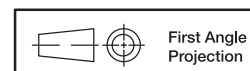
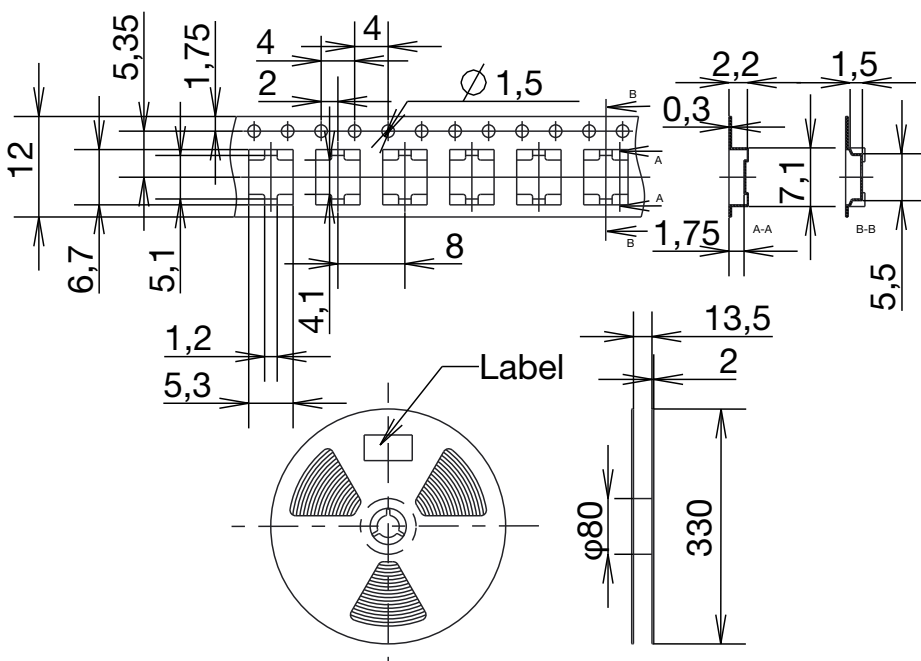
NEW

TAPE & REEL

0,8 mm height
5,000 pieces per reel



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



Dimensions are shown: mm
Specifications and dimensions subject to change



20 mar 19

B-36

www.ckswitches.com

Tactile Switches

B



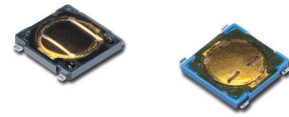
PTS 530 Series Ultra Low Profile SMT Top Actuated

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



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 (1mm)
 CONTACT RESISTANCE: ≤ 100 mΩ
 INSULATION RESISTANCE: ≥ 100 MΩ
 BOUNCE TIME: ≤ 10 ms

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

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

Packaging

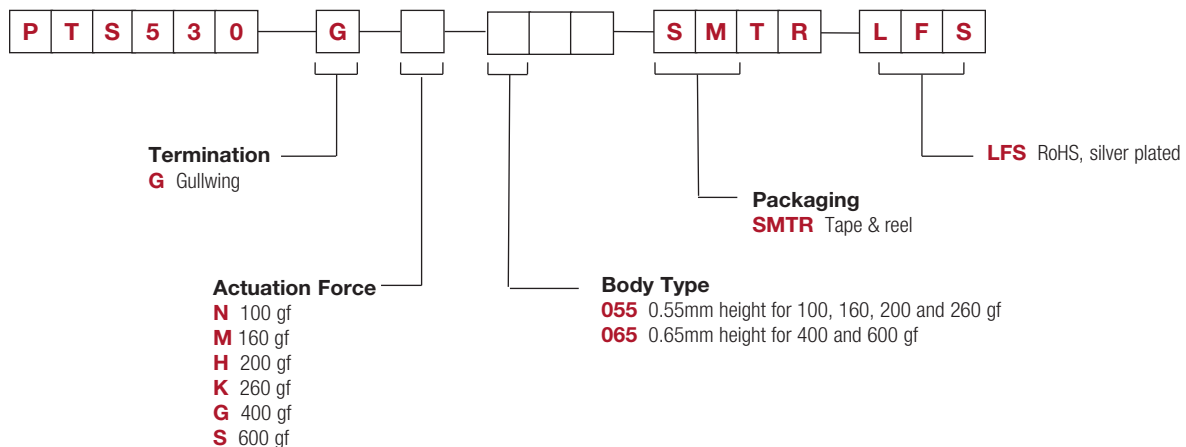
Switches in reels of 7,000 pieces.
 Dimensions of reels according to EIA 481B
 External diameter 330 mm

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

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.

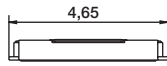
For any part number different from those listed above, please consult your local representative.



PTS 530 Series Ultra Low Profile SMT Top Actuated

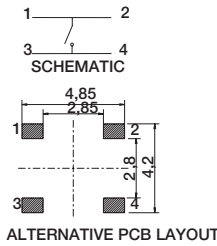
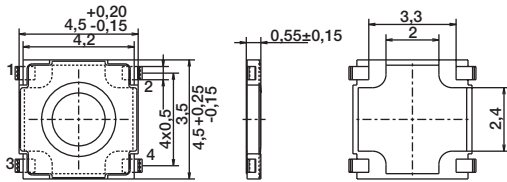
TERMINATION

G GULLWING



BODY TYPE / ACTUATION FORCE

055 0,55 MM HEIGHT

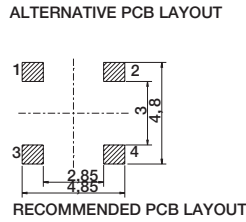
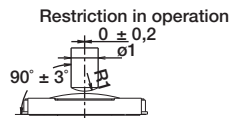
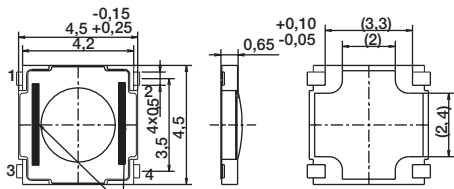
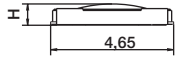


Actuation force identification lines:

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

065 0,65 MM HEIGHT

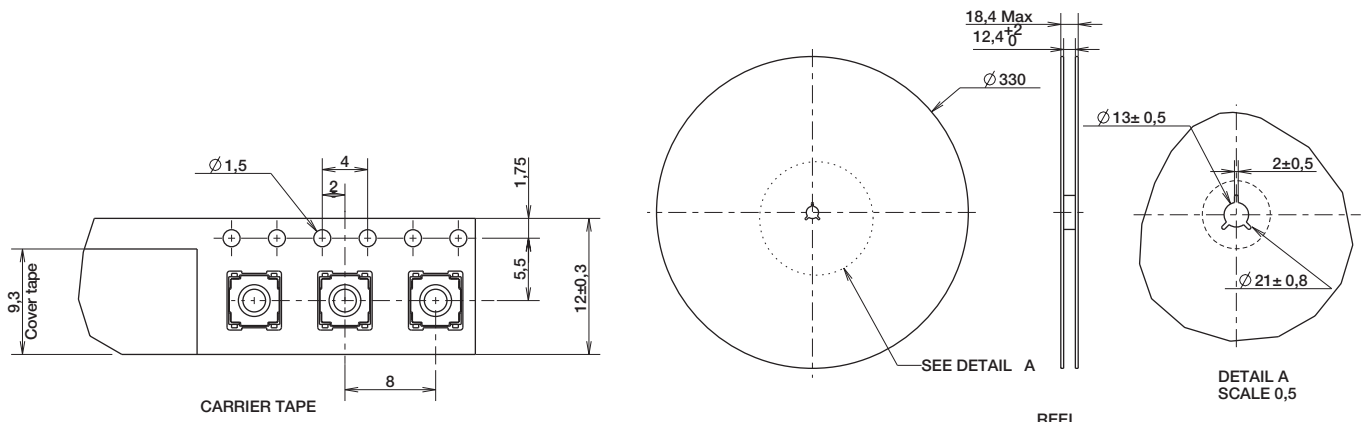
PART NUMBER	HEIGHT
PTS 530 GS 065 SMTR LFS	+0.1 -0.05 0.72
PTS 530 GG 065 SMTR LFS	0.68



G: 400 gf	No Lines
S: 600 gf	

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

TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change

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



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

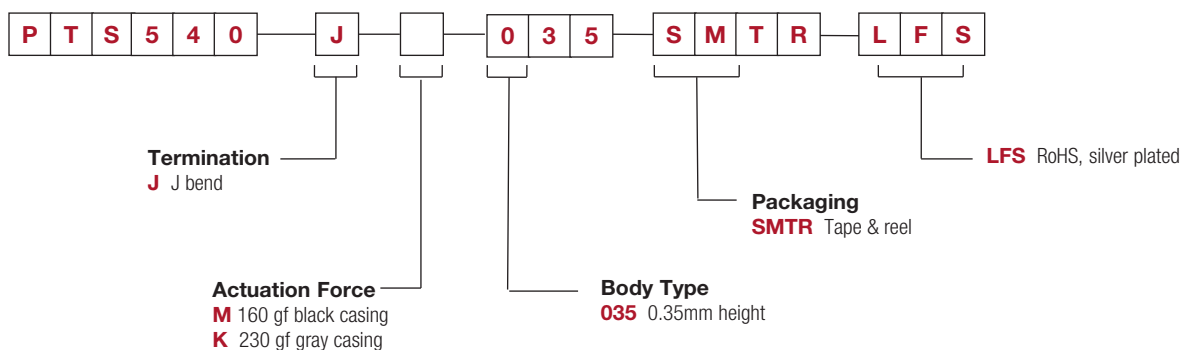
SOLDERING: This component is suited to the following methods:
 Infrared Reflow Soldering in accordance with IEC61760-1

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.

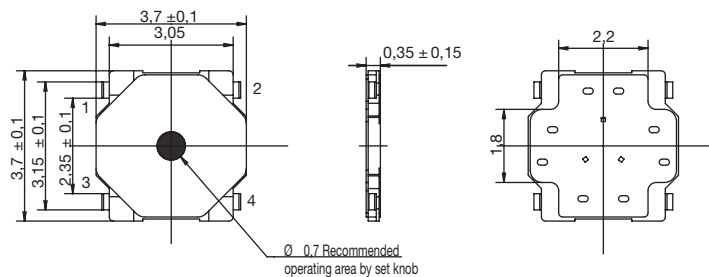
For any part number different from those listed above, please consult your local representative.



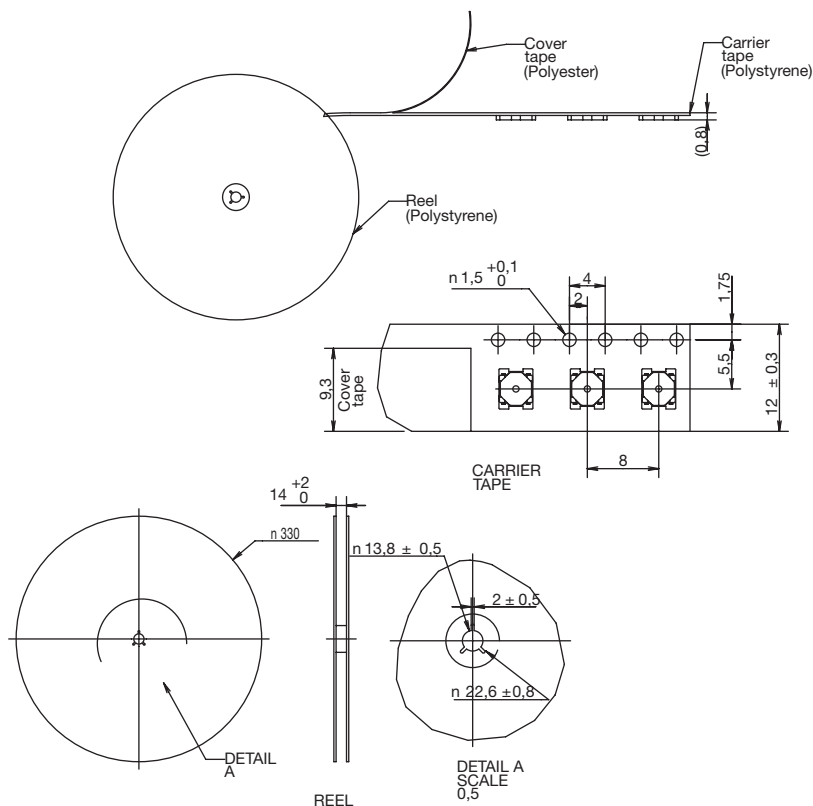
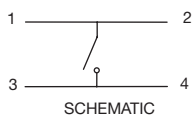
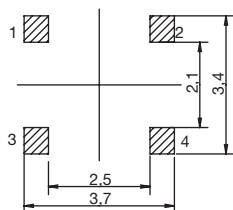
PTS 540 Series Ultra Low Profile SMT Top Actuated

PTS 540

Tactile Switches



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



Specifications

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

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

Packaging

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

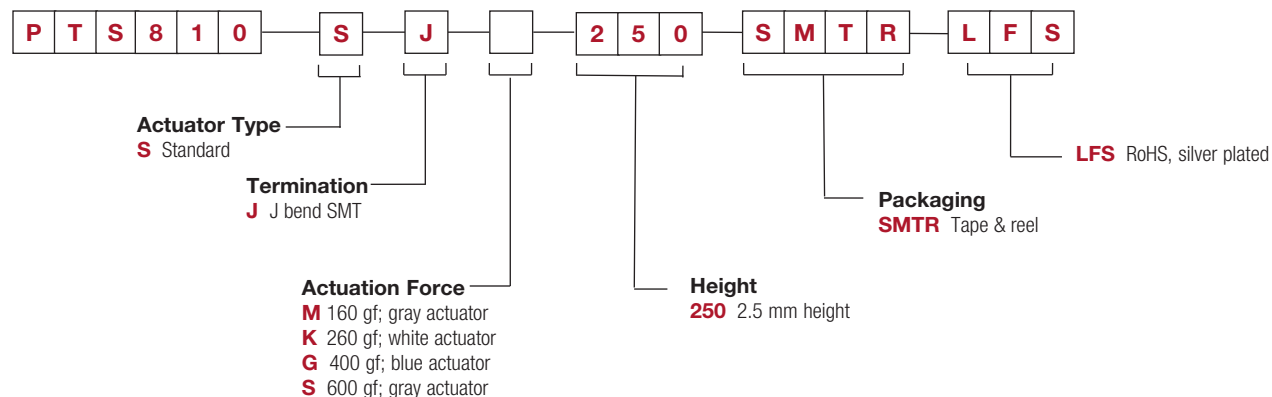
SOLDERING: This component is suited to the following methods:
 Infrared Reflow Soldering in accordance with IEC61760-1

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

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.

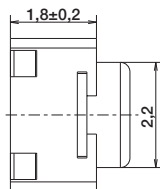
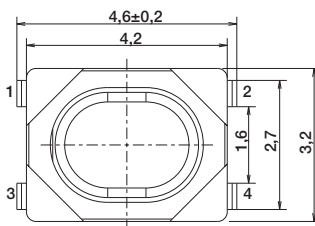
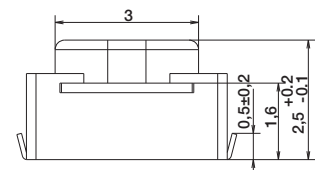


PTS 810 Series Microminiature SMT Top Actuated

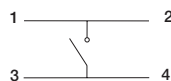
PTS810

Tactile Switches

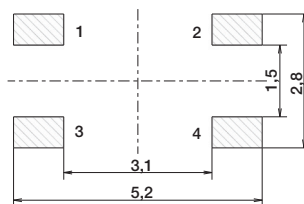
B



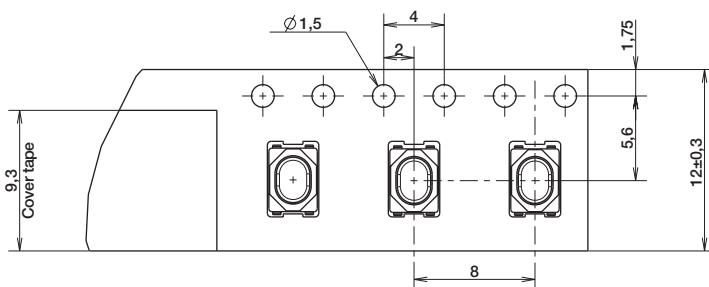
SCHEMATIC



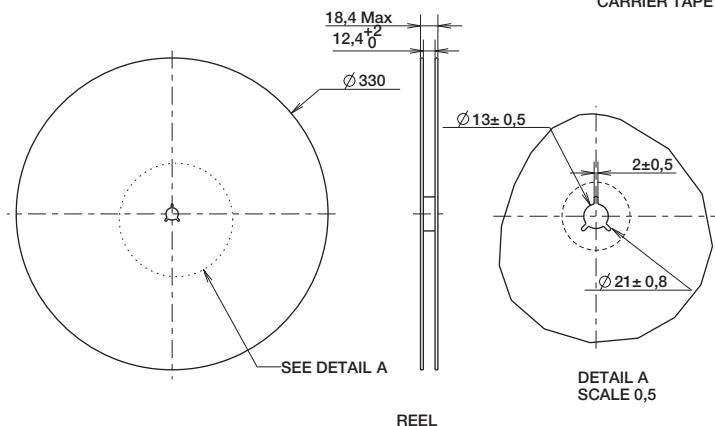
RECOMMENDED PCB LAYOUT



TAPE & REEL



CARRIER TAPE



DETAIL A
SCALE 0,5

REEL

NEW

PTS 815 Series Microminiature SMT Top Actuated

B
Tactile Switches

Features/Benefits

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

Typical Applications

- IoT devices
- Home Automation
- Remote Controls



Specifications

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

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -20°C to 70°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.

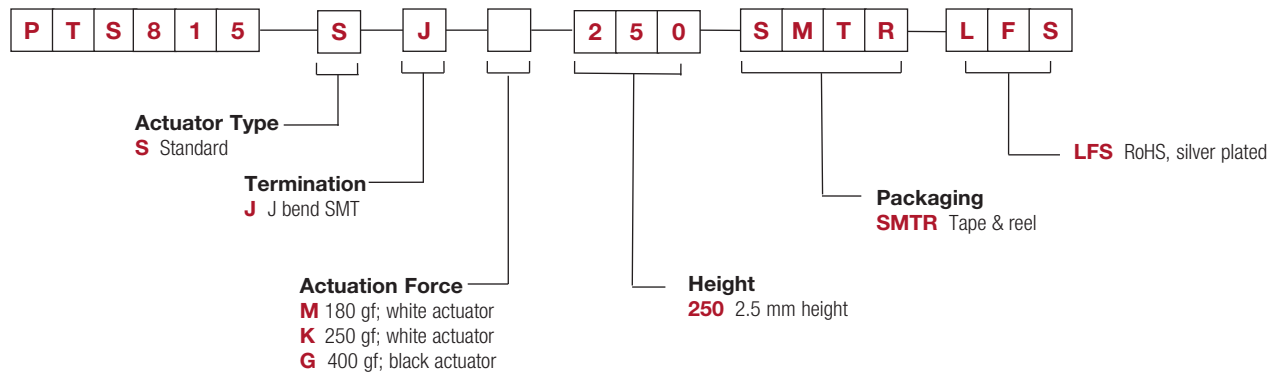
Packaging

Switches in reels of 3,000 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.

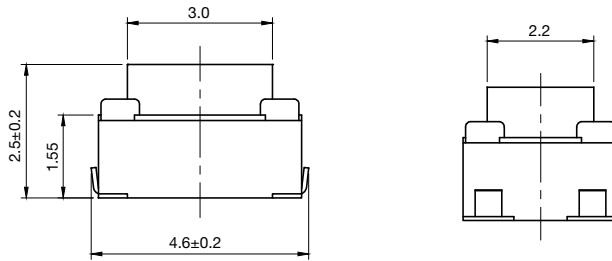
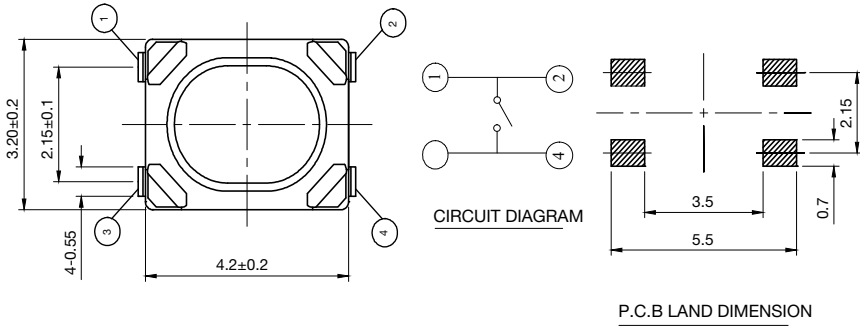
For any part number different from those listed above, please consult your local representative.



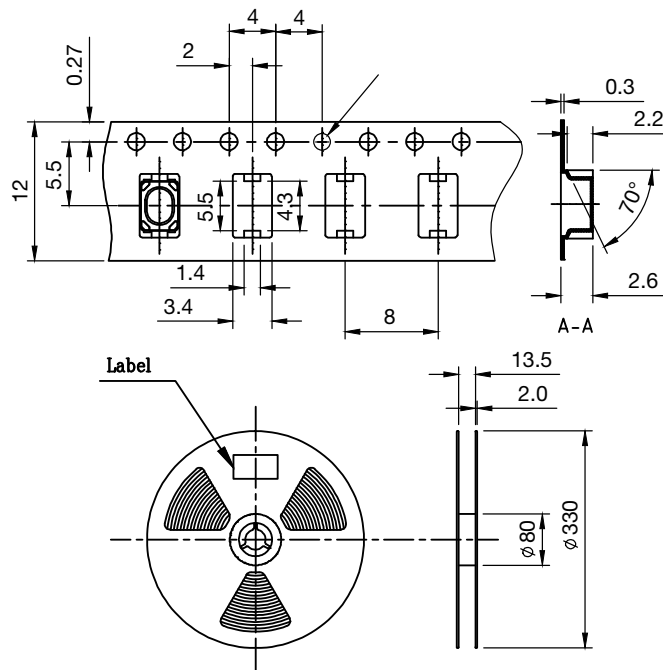
PTS 815 Series Microminiature SMT Top Actuated

PTS815

Tactile Switches



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



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

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.

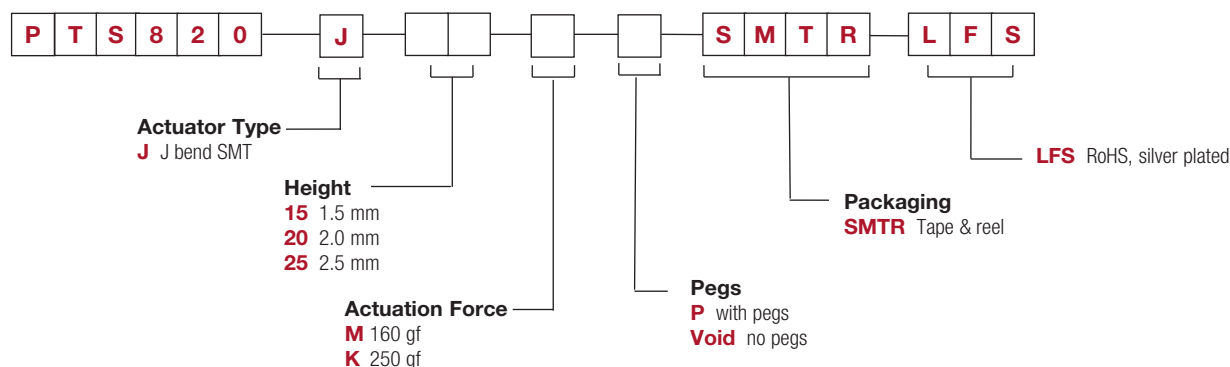
Packaging

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

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.

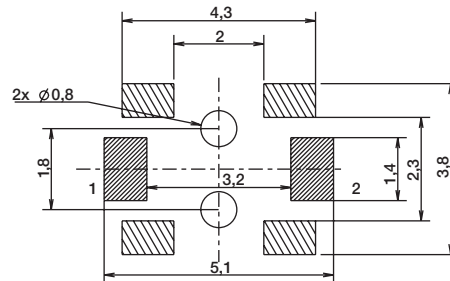
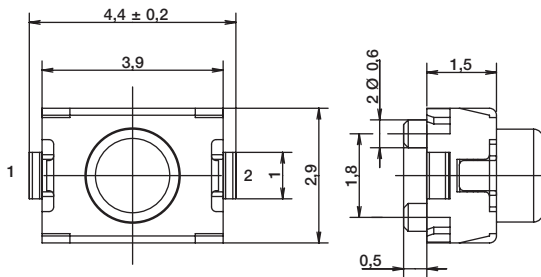
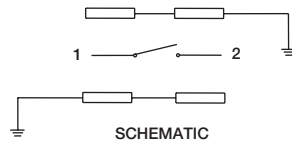
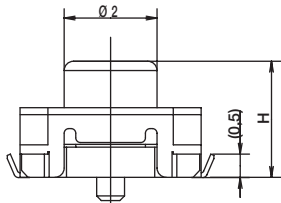


PTS 820 Series Microminiature SMT Top Actuated

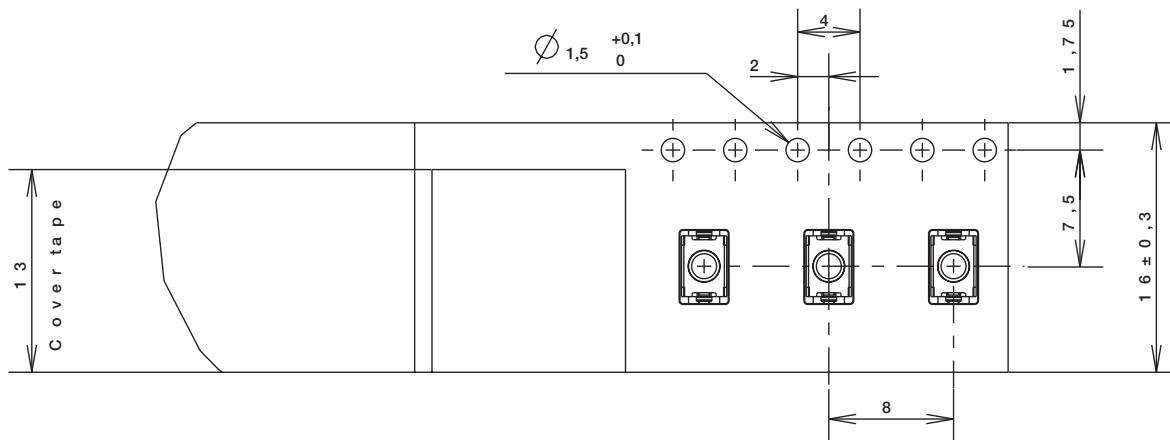
2.5 & 2.0 mm height (H) - version shown here with pegs

Tactile Switches

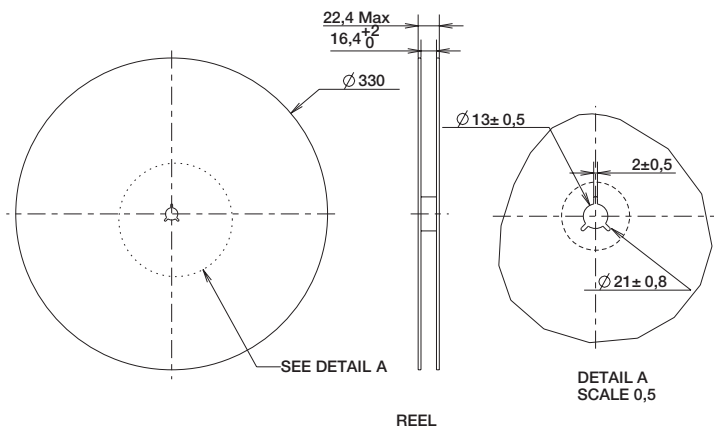
B



RECOMMENDED PCB LAYOUT

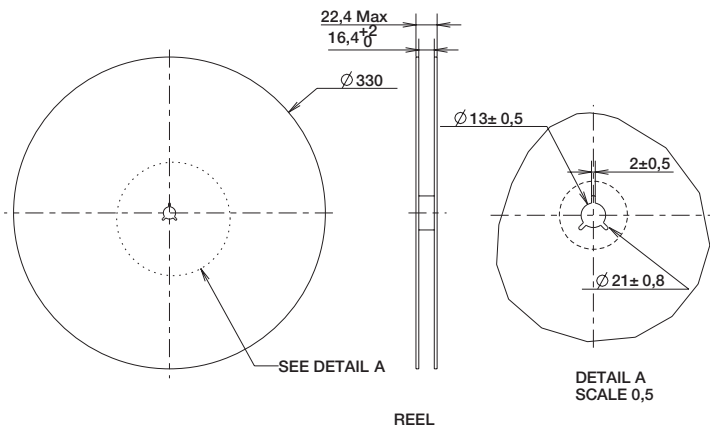
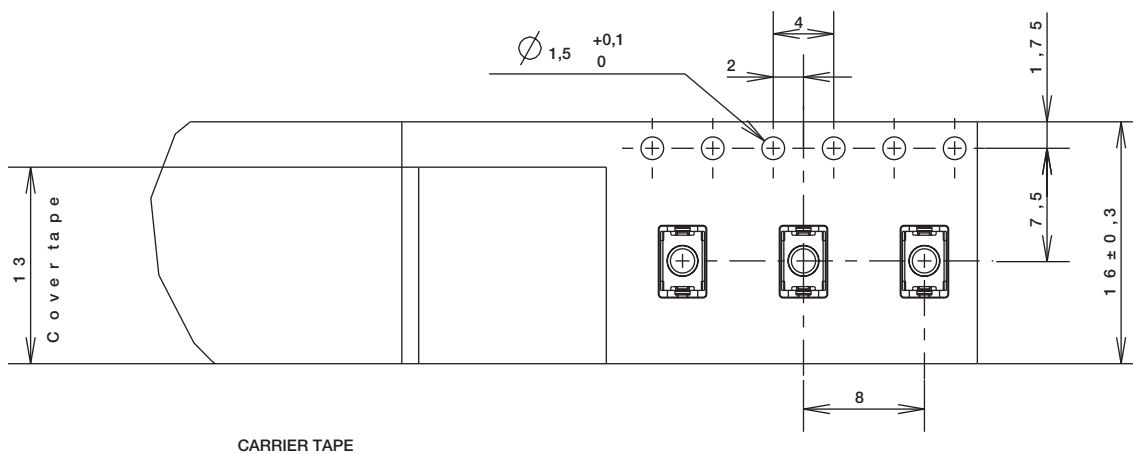
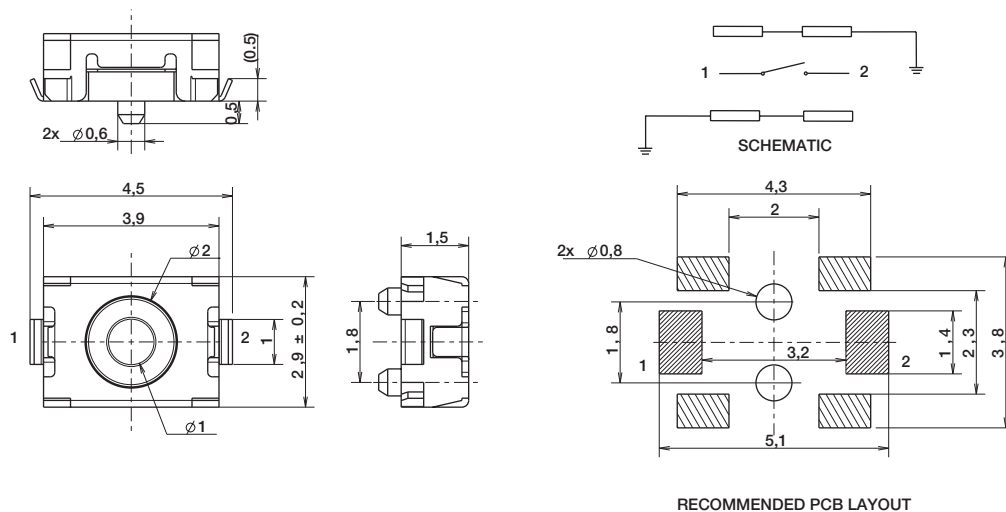


CARRIER TAPE



PTS 820 Series Microminiature SMT Top Actuated

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



PTS 830 Series Microminiature SMT Top Actuated



Features/Benefits

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

Typical Applications

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

Tactile Switches

B

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

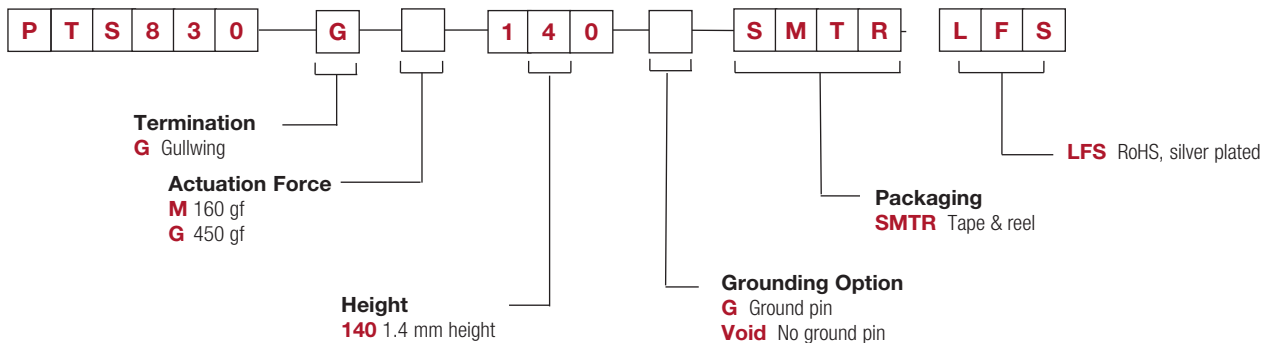
SOLDERING: This component is suited to the following methods:
 Infrared Reflow Soldering in accordance with IEC61760-1

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.



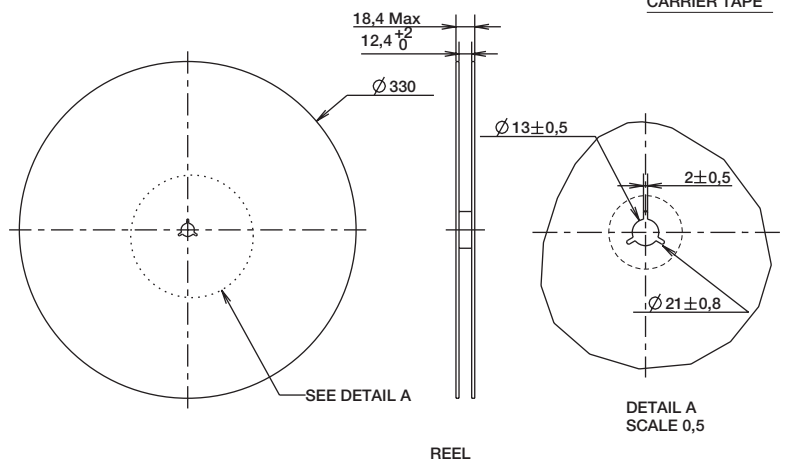
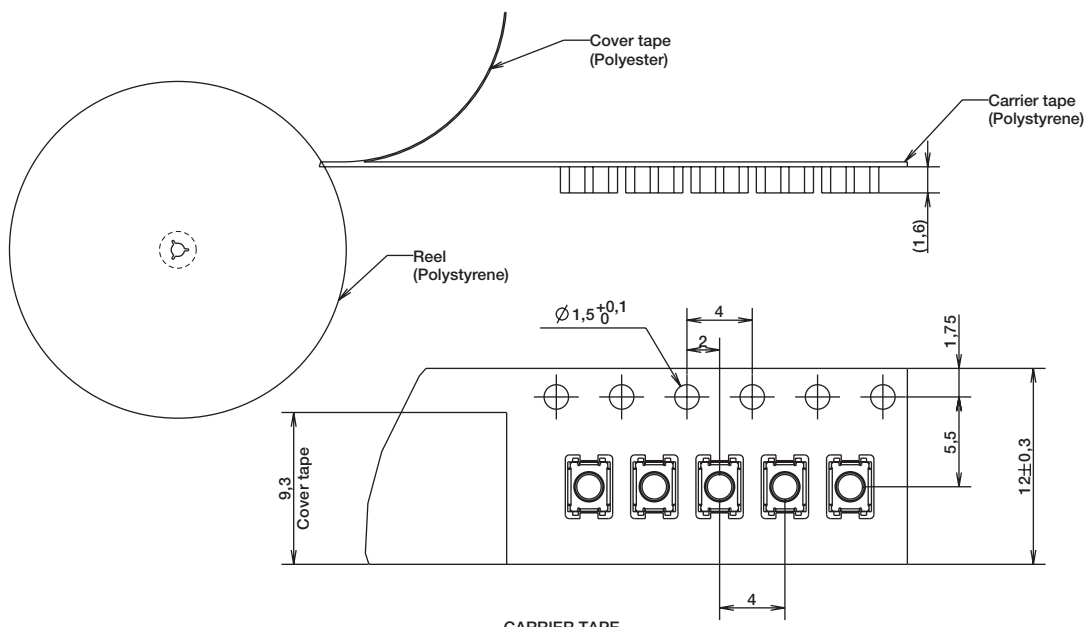
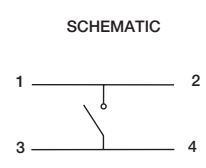
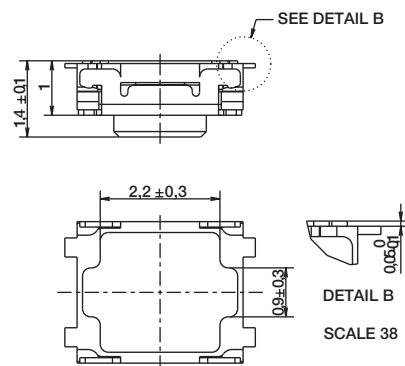
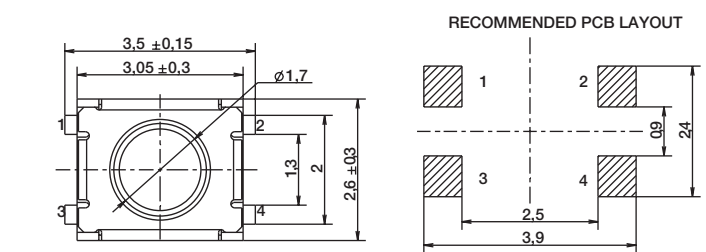
PTS 830 Series Microminiature SMT Top Actuated

PTS830 GX 140 SMTR LFS



B

Tactile Switches



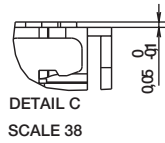
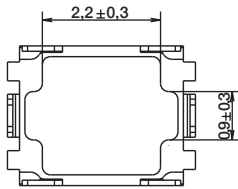
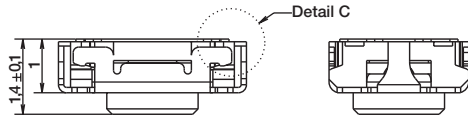
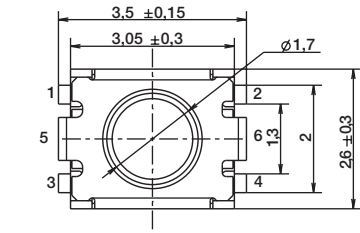
25 may 18

Dimensions are shown: mm
Specifications and dimensions subject to change

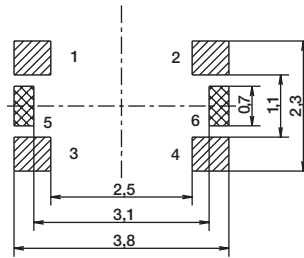
PTS 830 Series Microminiature SMT Top Actuated

PTS830 GX 140 G SMTR LFS

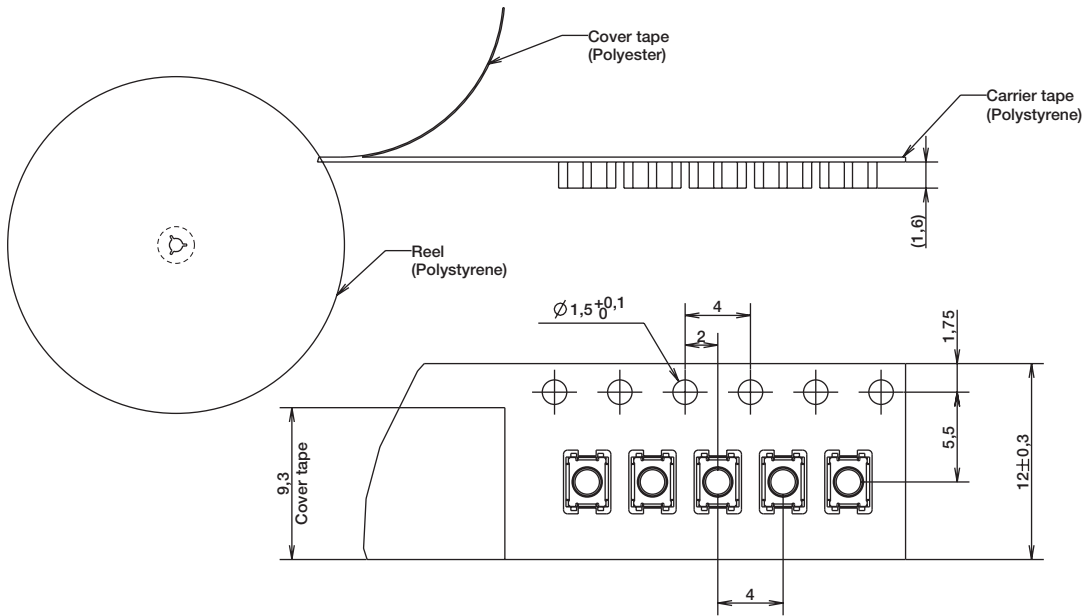
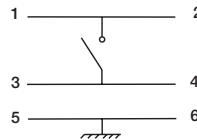
Tactile Switches



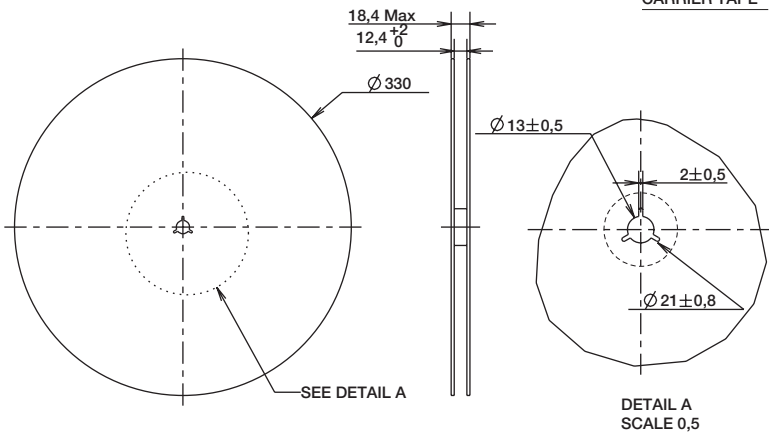
RECOMMENDED PCB LAYOUT



SCHEMATIC



CARRIER TAPE

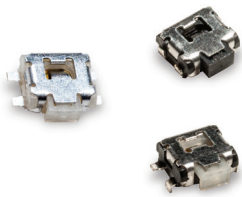


REEL

DETAIL A
SCALE 0,5



PTS 840 Series Microminiature SMT Side Actuated



Features/Benefits

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

Typical Applications

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

Specifications

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

Type	Operating Force (gf)	SMT Leads	Pegs
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

Electrical

MAXIMUM VOLTAGE: 12 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

Packaging

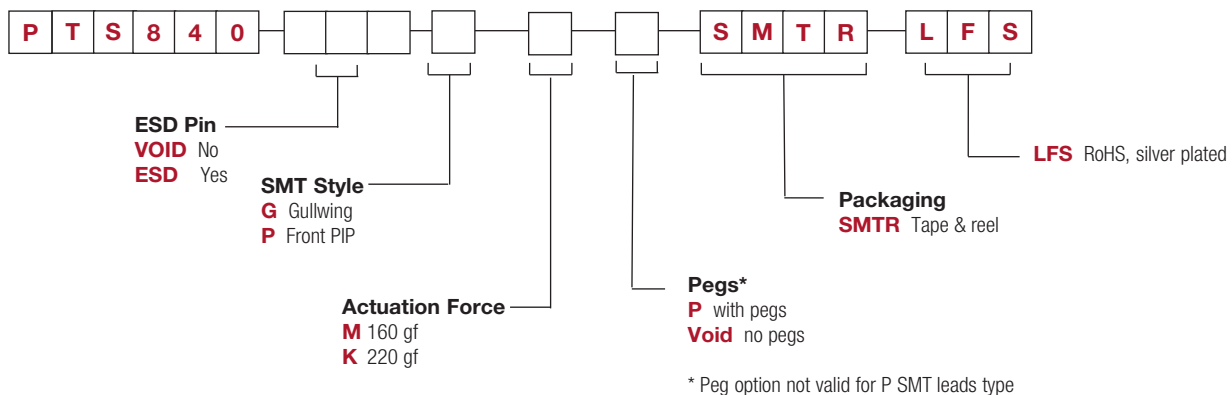
In reels of 3,500 pieces
 Dimensions of reels according to EIA 481B
 External diameter 330 mm

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

How To Order

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

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



Design Recommendations

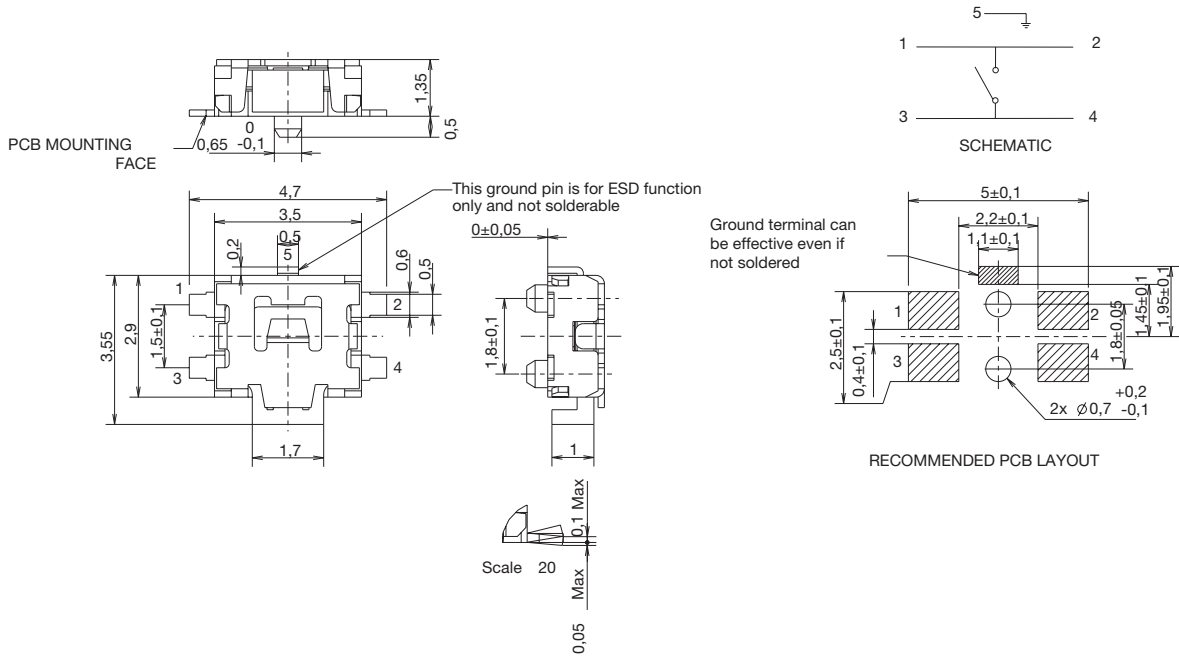
- "P" leads are recommended for applications where shear resistance is of importance
- When a precise alignment between application button and the switch is requested, version with pegs are the right choice to limit the possible floating of the switch during solderability.



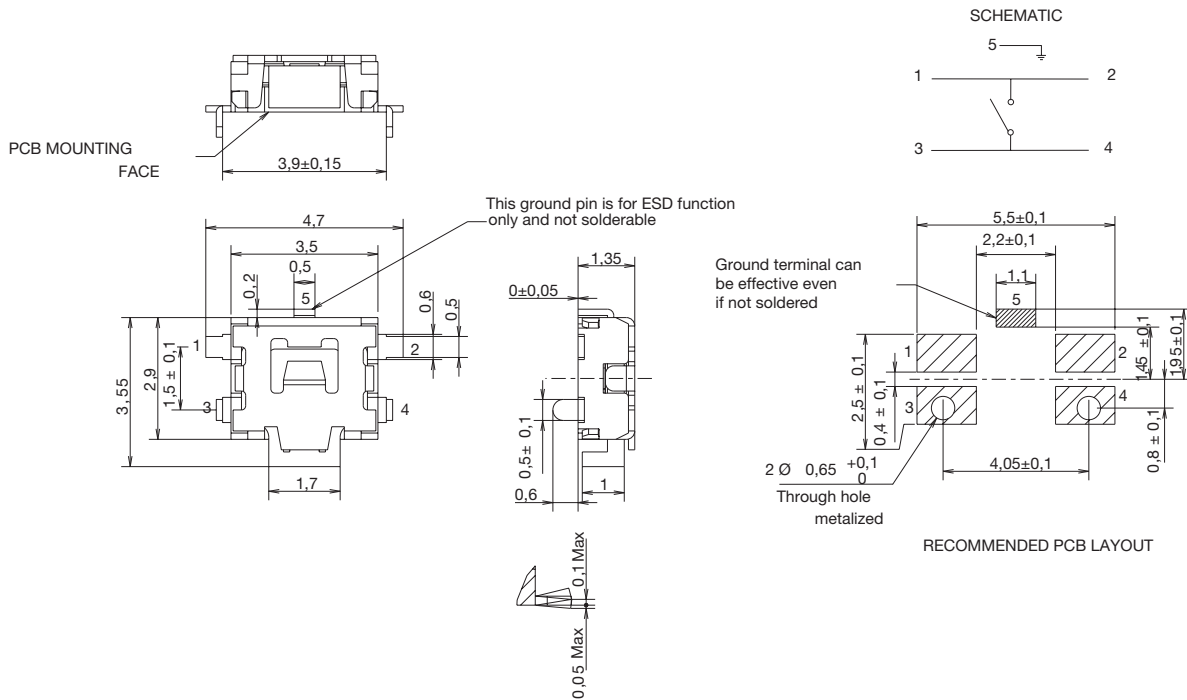
Dimensions are shown: mm
 Specifications and dimensions subject to change

PTS 840 Series Microminiature SMT Side Actuated

Standard G SMT Leads with ESD and Peg options



P SMT Leads with ESD option

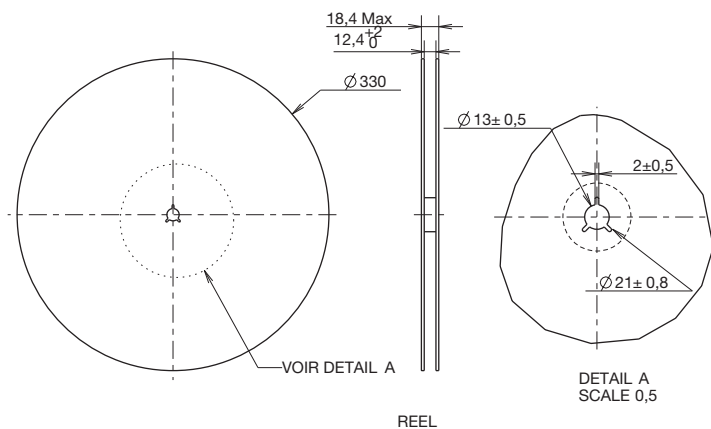
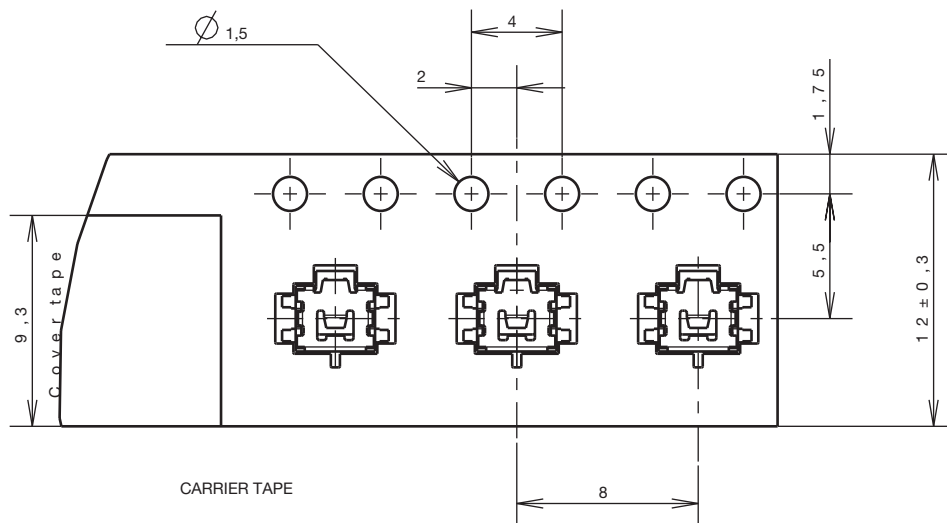


PTS 840 Series Microminiature SMT Side Actuated

TAPE & REEL

Tactile Switches

B



NEW

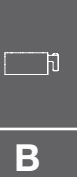
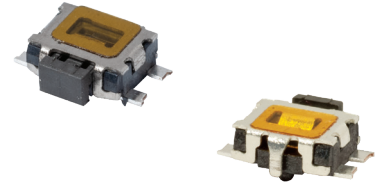
PTS841 Series Microminiature SMT Side Actuated

Features/Benefits

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

Typical Applications

- IoT devices
- Wearables
- Portable devices
- Remote controls



B
Tactile Switches

Specifications

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

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -40°C to 85°C

Process

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

Packaging

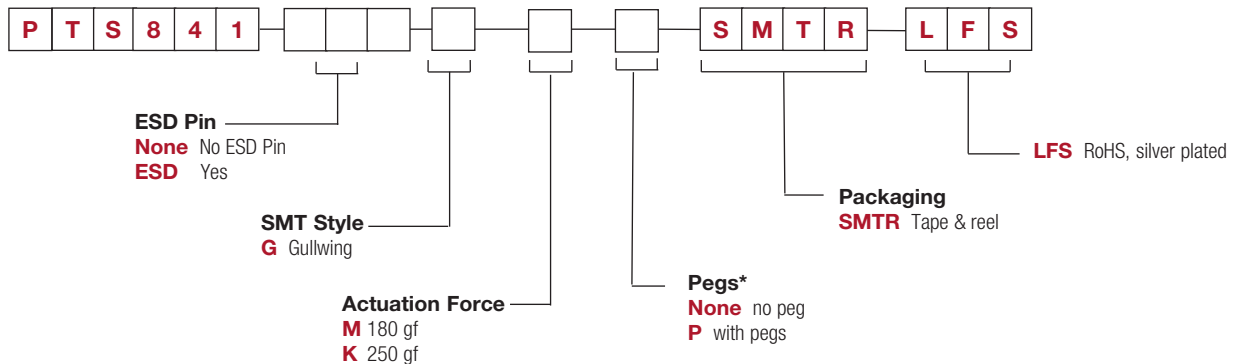
In reels of 3,000 pieces
 Dimensions of reels according to EIA 481B
 External diameter 330 mm

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

How To Order

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

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



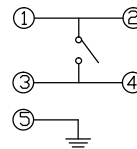
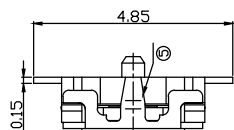
Design Recommendations

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

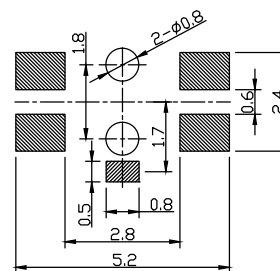
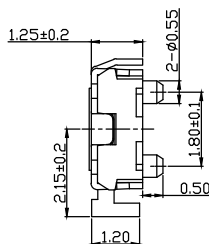
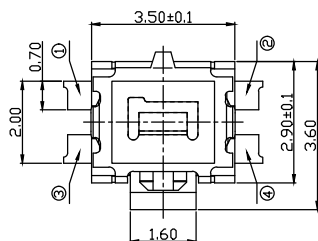
PTS 841 Series Microminiature SMT Side Actuated

NEW

G SMT Leads with ESD and Peg options

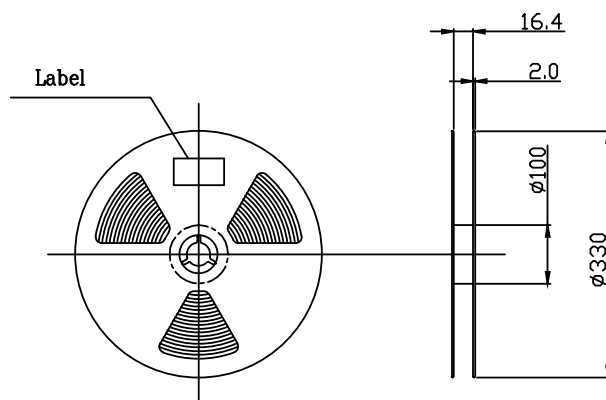
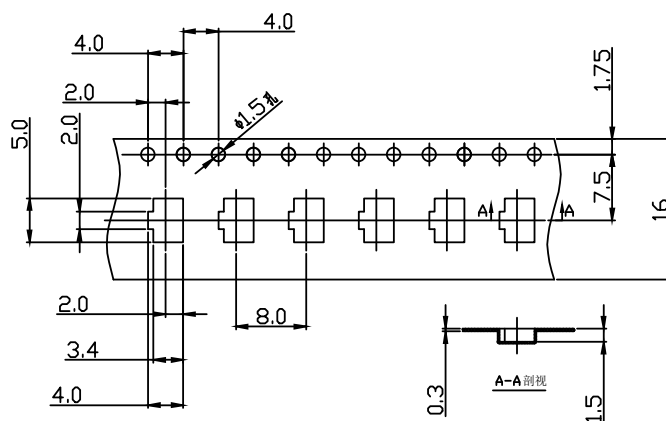


CIRCUIT DIAGRAM



P.C.B LAND DIMENSION

TAPE & REEL



Tactile Switches

B

KSR Series Subminiature Tact Switch for SMT

Features/Benefits

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

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics
- Smart meters



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

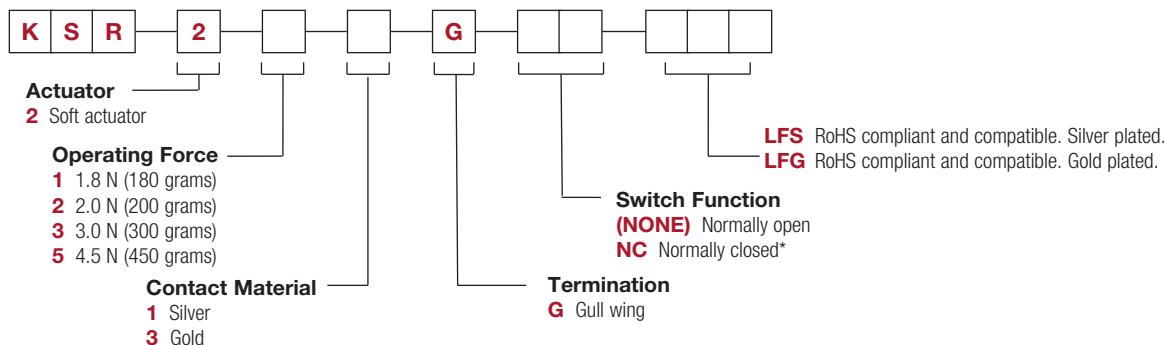
NOTE: Specifications listed above are for switches with standard options.
For information on specific and custom switches, consult Customer Service Center.

How To Order

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

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

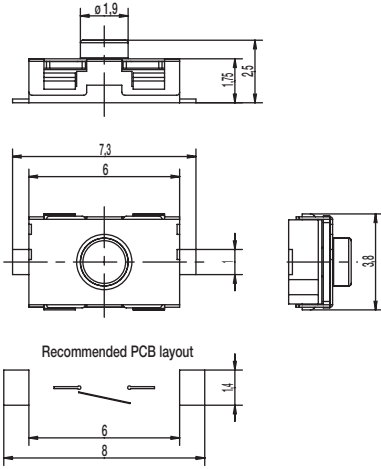
For any part number different from those listed above, please consult your local representative.



*Available on KSR223G only.

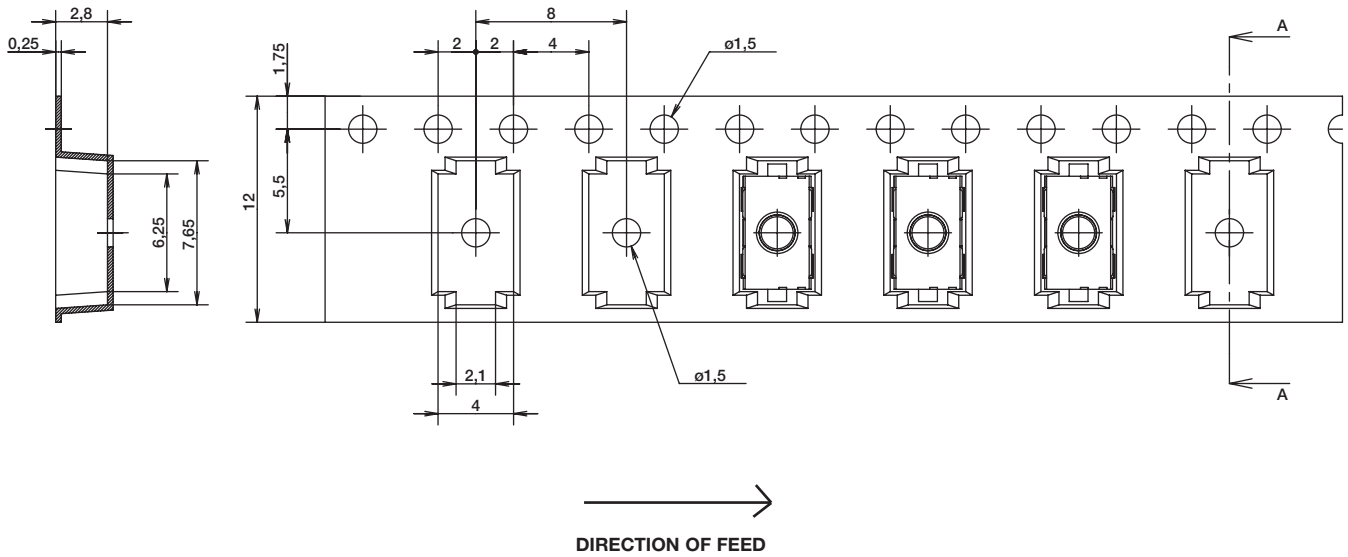
KSR Series Subminiature Tact Switch for SMT

KSR



Tactile Switches

TAPE & REEL



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

Packaging

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

Electrical

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

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

Environmental

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

Process

SOLDERING: Compatible with lead free reflow soldering process.

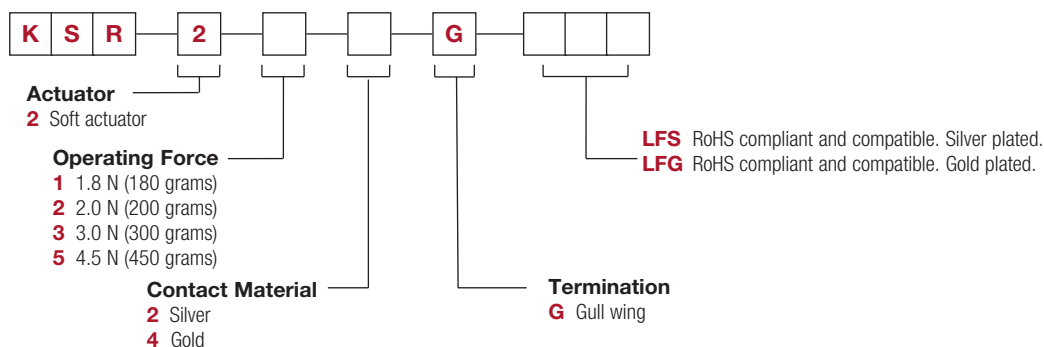
NOTE: Specifications listed above are for switches with standard options.
For information on specific and custom switches, consult Customer Service Center.

How To Order

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

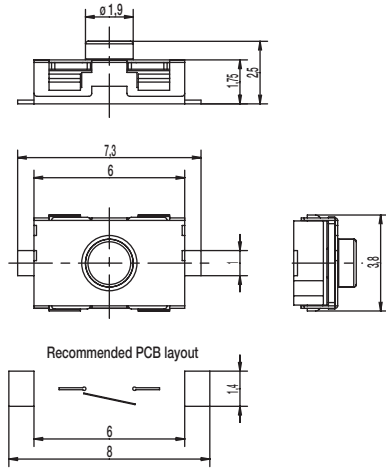
However, please note that all the combinations of these options are not feasible.

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



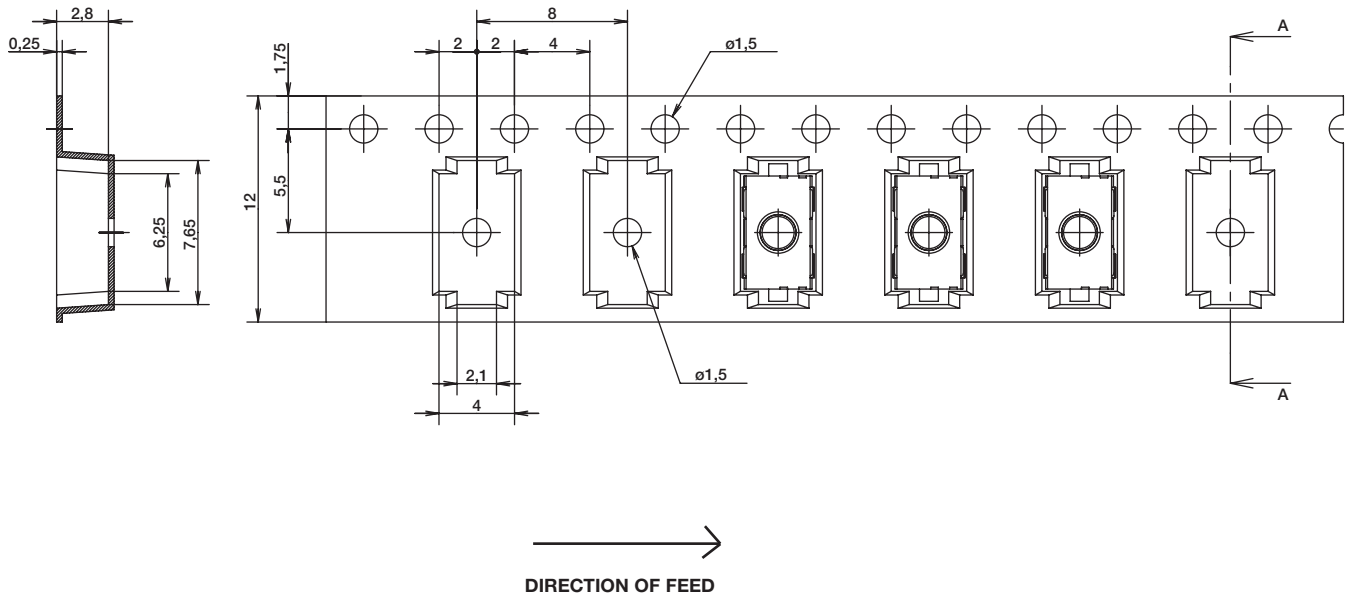
KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

KSR



Tactile Switches

TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change



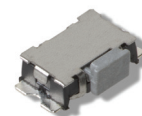
KSS Series Subminiature SMT Side Actuated

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



Tactile Switches

Specification

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

Mechanical

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

Type	Operating force 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):	≥ 10° Ω	
BOUNCE TIME:	< 3 ms	

Environmental

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

Process

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

Packaging

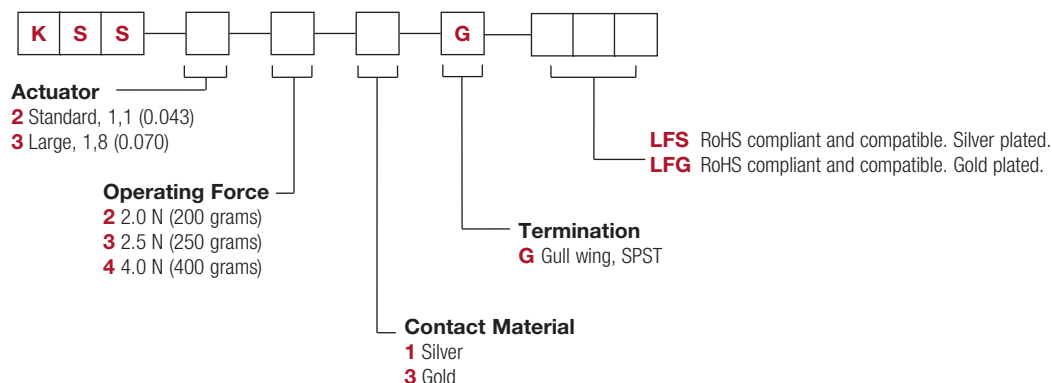
Tape and reels in reels of 3,000 pieces.
External diameter 330mm ± 2mm.

How To Order

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

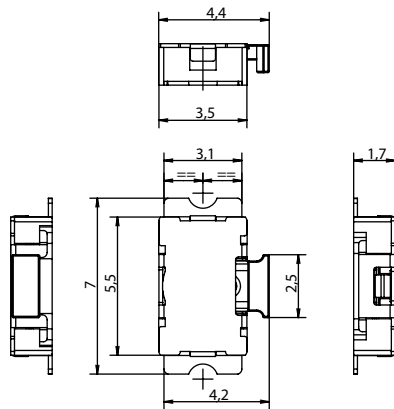
However, please note that all the combinations of these options are not feasible.

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

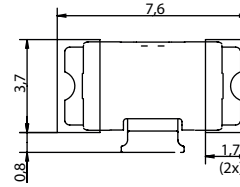


KSS Series Subminiature SMT Side Actuated

KSS



PCB PROPOSED LAYOUT

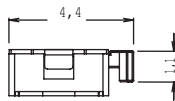


Tactile Switches

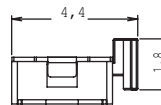
B

ACTUATOR

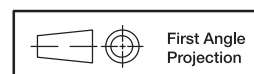
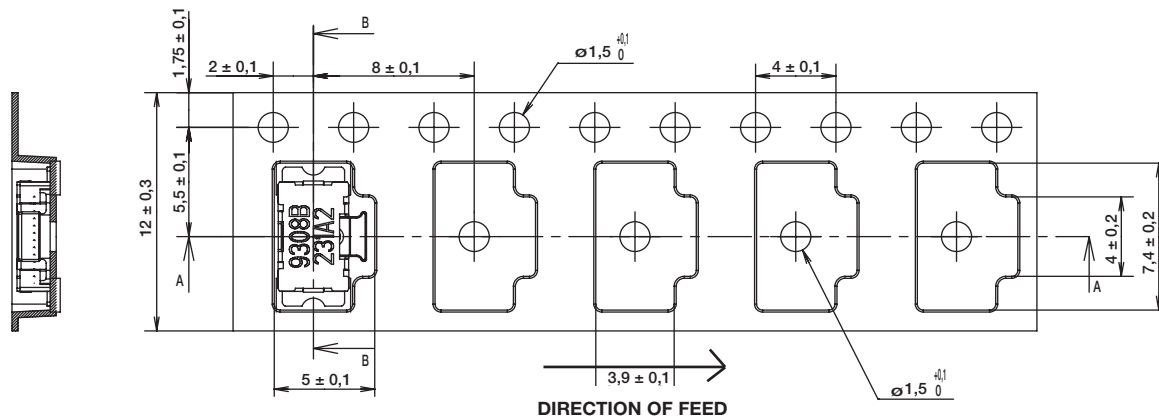
2 STANDARD, 1,1 (0.043)



3 LARGE, 1,8 (0.070)



TAPE & REEL



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

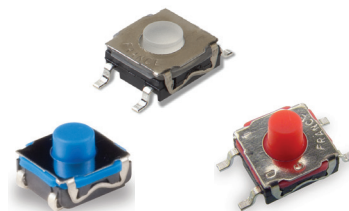
KSC Series Sealed Tact Switch for SMT

Features/Benefits

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

Typical Applications

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



Specification

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

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

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.

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms
 CONTACT RESISTANCE: ≤ 100 m Ω
 INSULATION RESISTANCE (100 V): ≥ 10 M Ω
 BOUNCE TIME: ≤ 1 ms

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

Environmental

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

Packaging

Tape and Reel (see series for quantity information)

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

Process

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

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

KSC Product Range

KSC1	KSC2	KSC3	KSC4	KSC5	KSC6	KSC7	KSC8	KSC9	KSC10
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	H = 4.9 mm
IP67	IP67	IP67	IP67	IP50	IP67	IP67	IP67	IP67	IP67



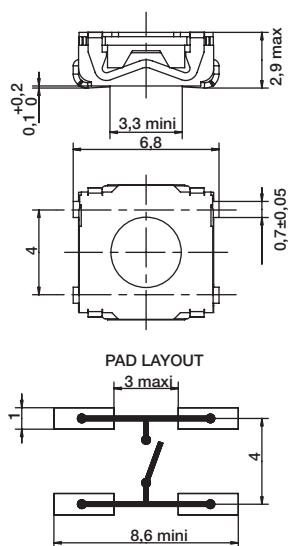
Note: KSC Series is subject to variants. Please contact customer service for other options.

KSC Series Sealed Tact Switch for SMT

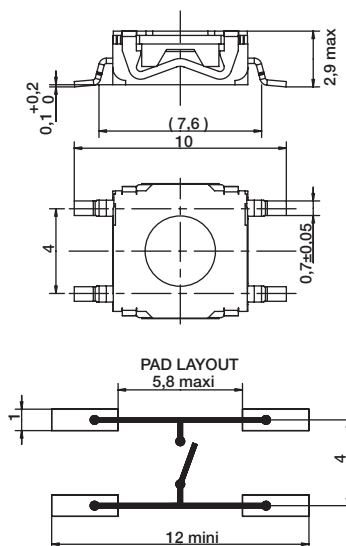
Tactile Switches

B

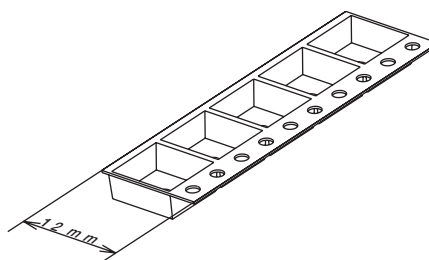
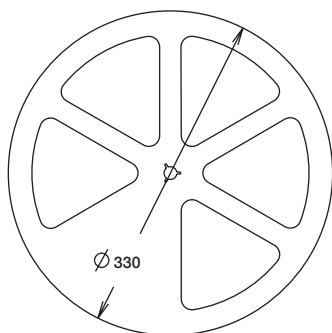
J BEND



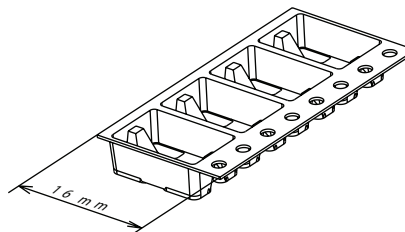
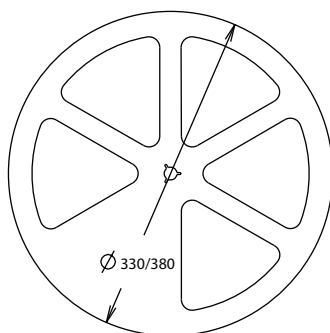
G GULLWING



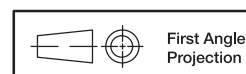
12 MM



16 MM



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



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



KSC-XA Series Soft Sound Tact Switch

NEW

Features/Benefits

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

Typical Applications

- Trunk opening system
- Automatic gear shift paddle
- Steering wheel
- Window lifter
- Seat adjustment module



Tactile Switches

Type	Force (N)	Life (cycles)	Travel (mm)
KSCXA 35J LFS	3.5 +/-1	1,000,000	0.7+/-0.2
KSCXA 40J LFS	4.0 +/-1	1,000,000	0.7+/-0.2
KSCXA 55J LFS	5.5 +/-1.6	1,000,000	0.7+/-0.2
KSCXA 68J LFS	6.8 +/- 1.7	500,000	0.7+/-0.2
KSCXA 96J LFS	9.6 +/- 2.4	150,000	0.7+/-0.2

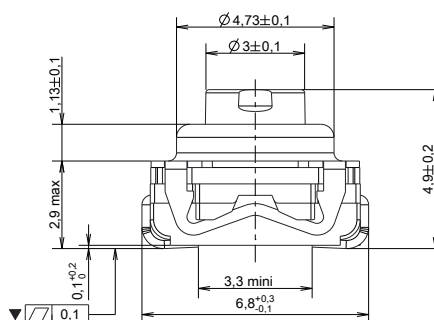
POWER: 0.002 VA min. / 1VA Max.

VOLTAGE: 2V min. / 24V Max.

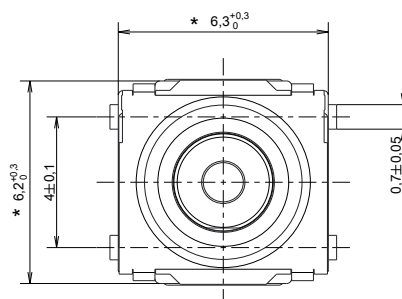
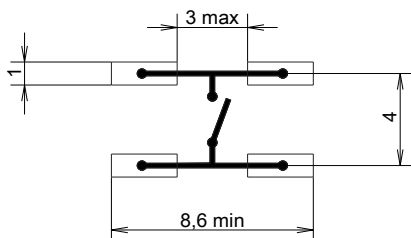
CURRENT: 1mA min. / 42mA Max.

OPERATING TEMPERATURE: -40°C / +95°C

CONTACT RESISTANCE: 0.1 ohm



PCB LAYOUT



Packaging

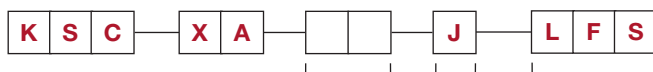
In reels of 1,400 pieces.

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

How To Order

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

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



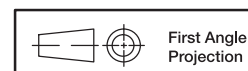
Operating Force

- 35** 3.5 N
- 40** 4.0 N
- 55** 5.5 N
- 68** 6.8 N
- 96** 9.6 N

LFS Lead free compatible, silver plated

Termination

J J bend



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



26 apr 19

NEW

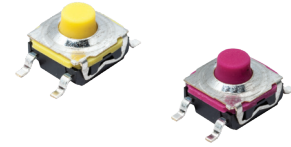
KSC-SLT Series Long Travel Tact Switch

Features/Benefits

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

Typical Applications

- Automotive interior
- Front panel
- Instrumentation



B

Tactile Switches

Specification

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

Mechanical

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

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

Electrical

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

Environmental

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

Process

Compatible with the lead free reflow soldering process.

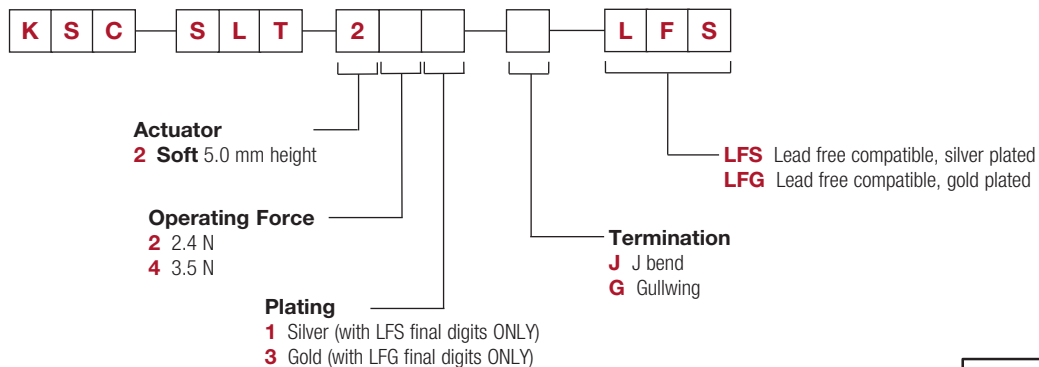
Packaging

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

How To Order

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

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



Dimensions are shown: mm
 Specifications and dimensions subject to change

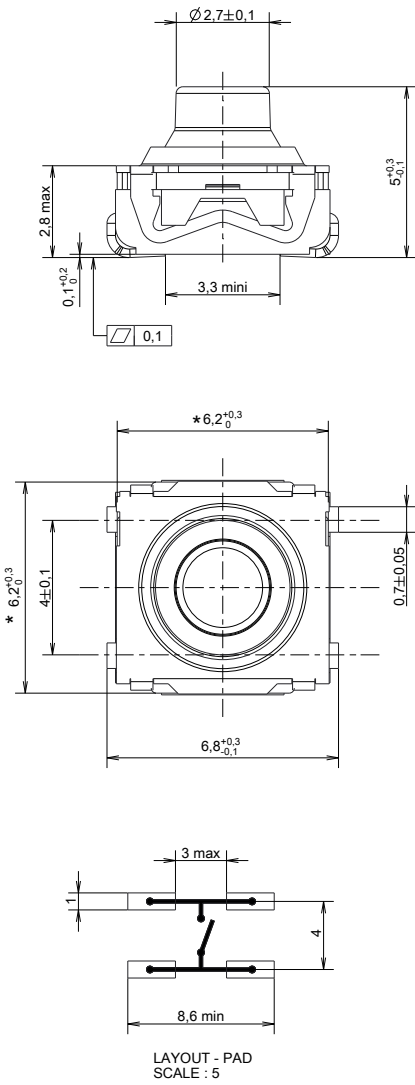


KSC-SLT Series Long Travel Tact Switch

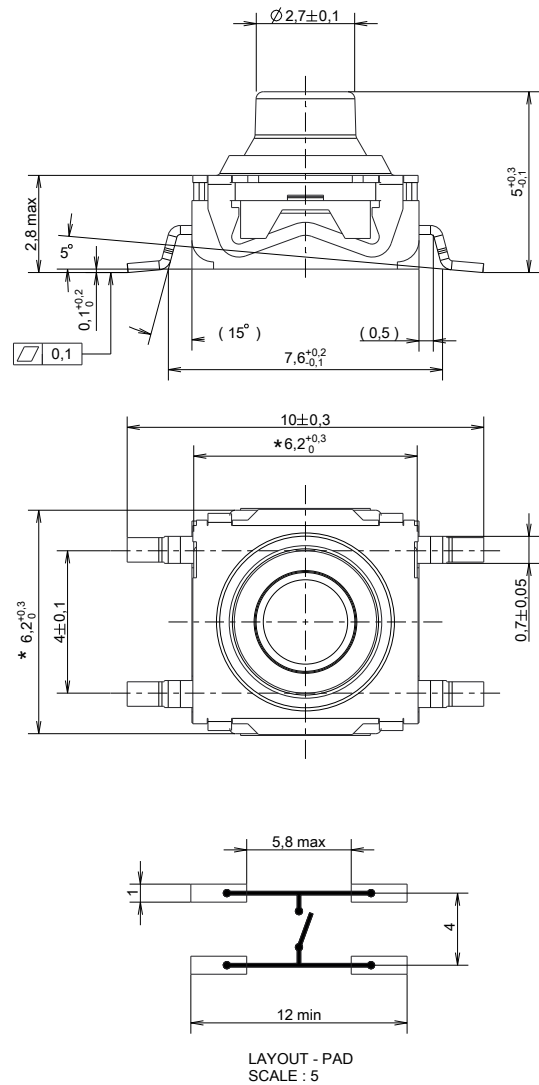
NEW

Tactile Switches

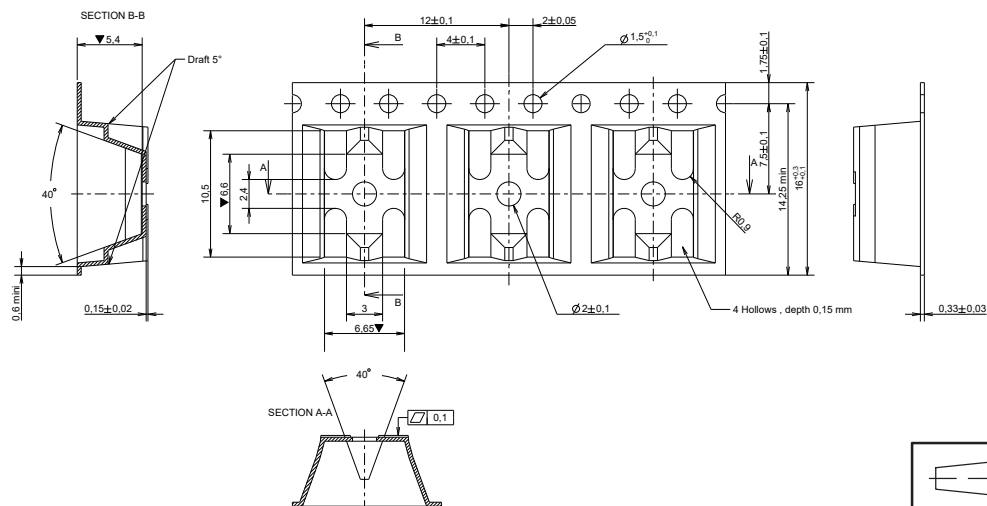
J J Bend



G Gullwing



TAPE & REEL



Dimensions are shown: mm
Specifications and dimensions subject to change



KSC1 Series Sealed Tact Switch for SMT



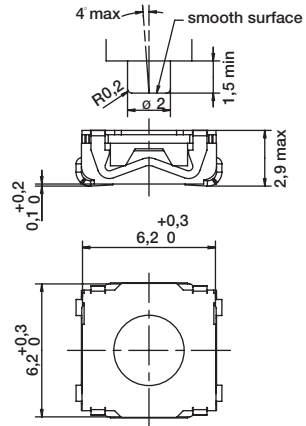
B

Tactile Switches

KSC1 without actuator 2,5 mm high



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



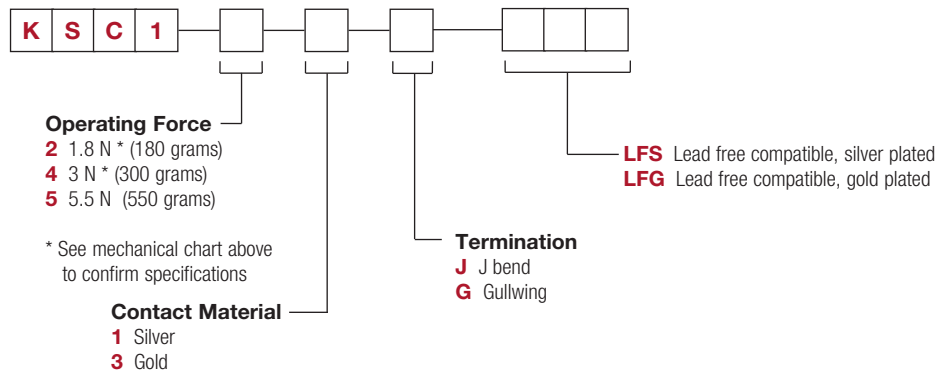
Packaging

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

How To Order

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

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



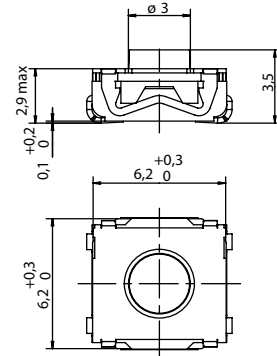
Dimensions are shown: mm
Specifications and dimensions subject to change

KSC2 Series Sealed Tact Switch for SMT

KSC2 soft actuator 3,5 mm high



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



Tactile Switches

Packaging

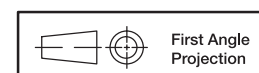
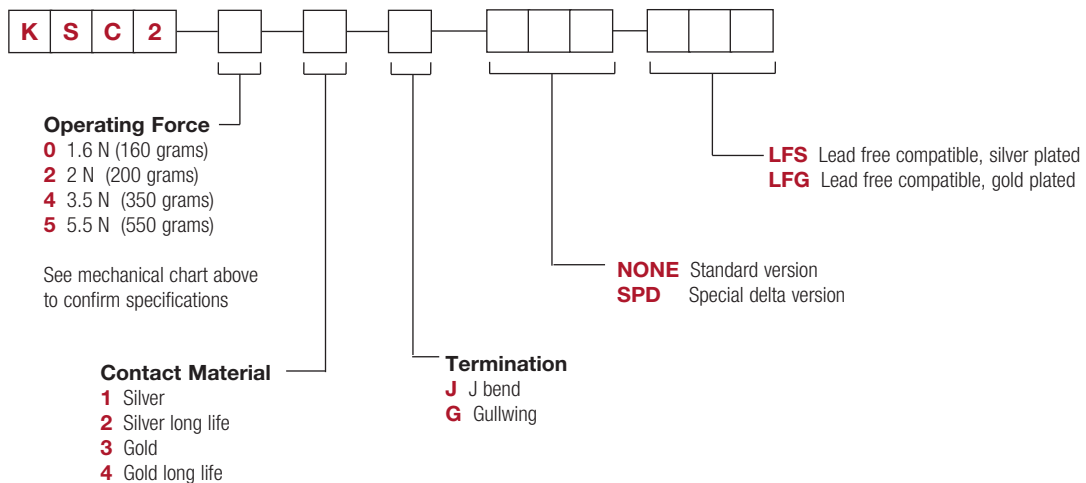
Switches delivered on continuous tape & reels of 2,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

How To Order

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

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

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



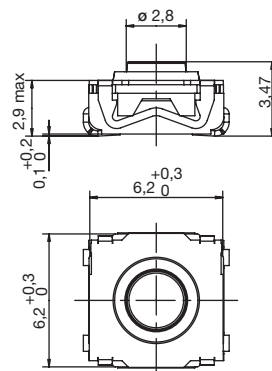
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC3 Series Sealed Tact Switch for SMT

KSC3 hard actuator 3,5 mm high



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



Packaging

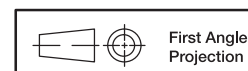
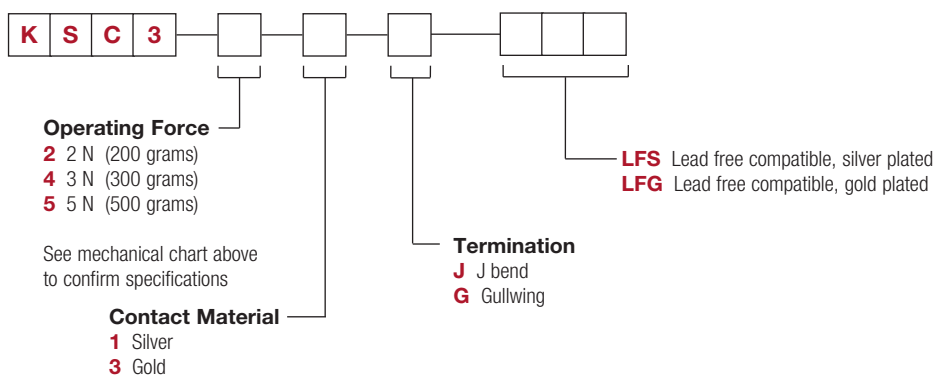
Switches delivered on continuous tape & reels of 2,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

How To Order

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

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

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



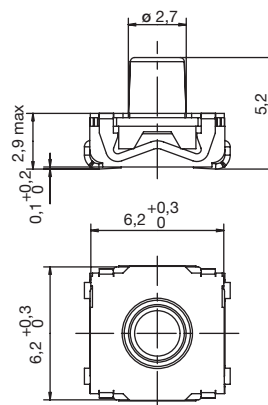
Dimensions are shown: mm
 Specifications and dimensions subject to change

KSC4 Series Sealed Tact Switch for SMT

KSC4 soft actuator 5,2 mm high



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



Packaging

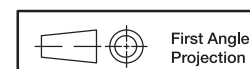
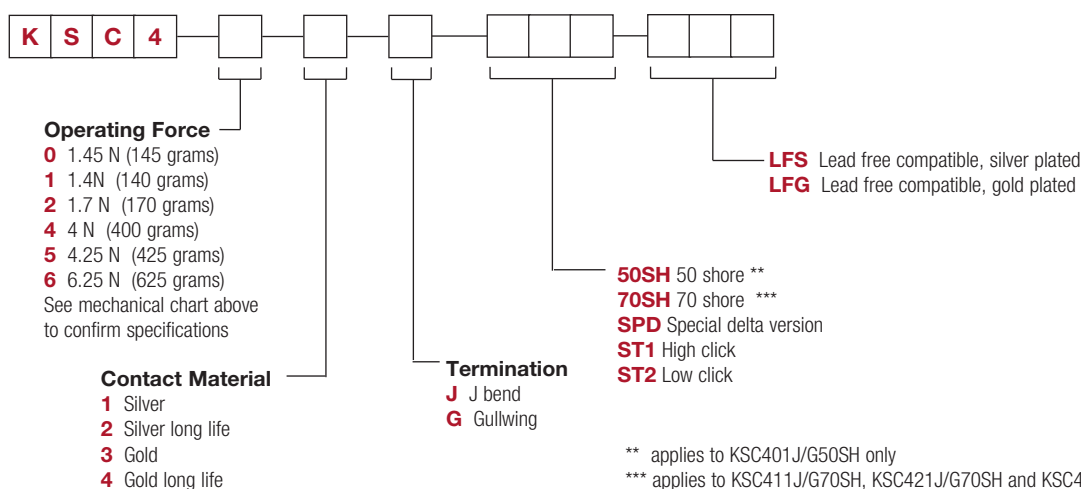
Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

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

NEW

KSC-DCT Series Dual Circuit Technology Tact Switch

Features/Benefits

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

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics



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

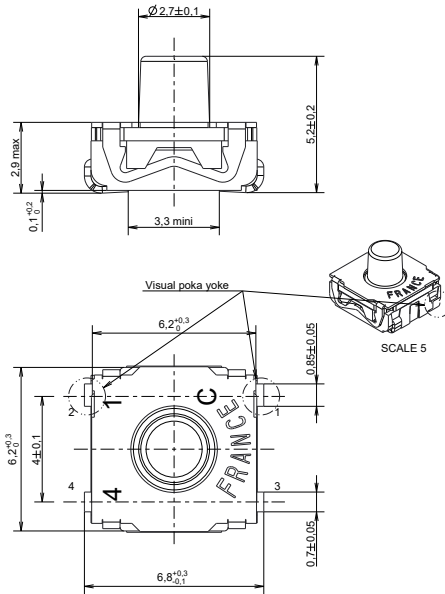
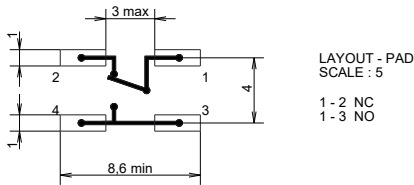
Packaging

In reels of 1,000 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863.

External diameter 330 ± 2 mm

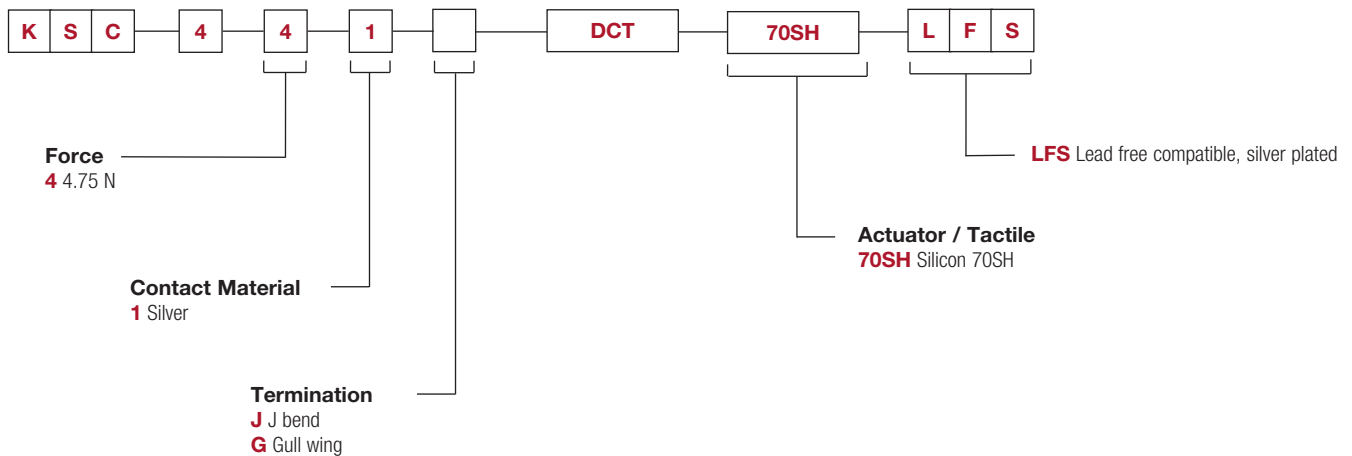
PCB Layout



How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change



25 oct 18

KSC-PF Series Potting Friendly Tact Switch

NEW



Features/Benefits

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

Typical Applications

- Automotive
- Medical equipment
- Industrial electronics

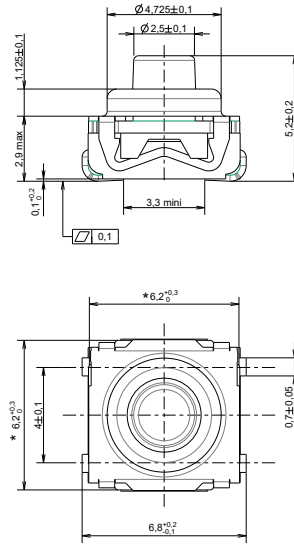
Tactile Switches

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

Max. potting height: 2.9 mm

Packaging

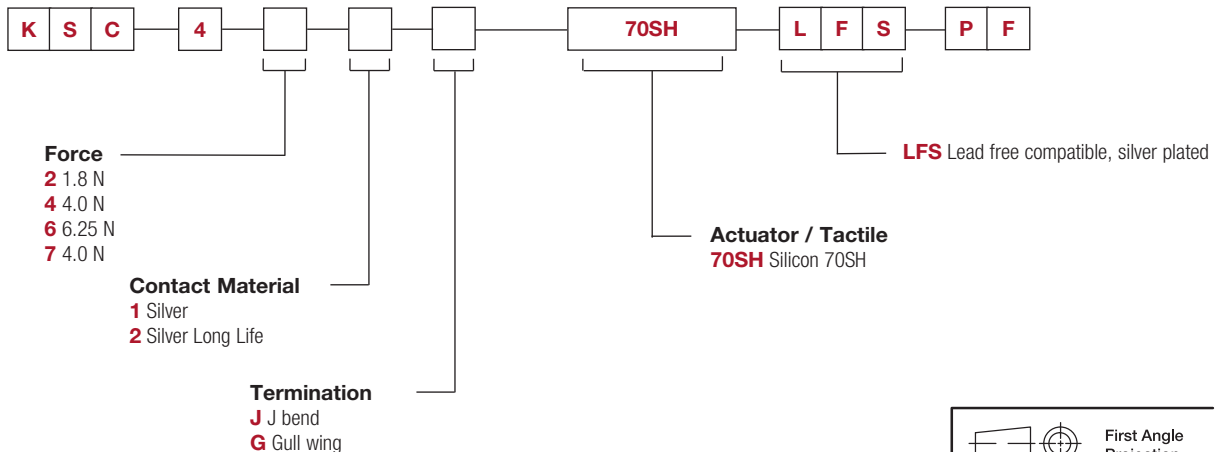
In reels of 1,000 pieces.
Dimensions of reels according to EIA RS481 or IEC 2863.
External diameter 330 ± 2 mm



How To Order

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

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



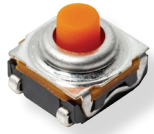
Dimensions are shown: mm
Specifications and dimensions subject to change



18 sep 18

NEW

KSC-OF Series Overload Friendly Tact Switch



Features/Benefits

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

Typical Applications

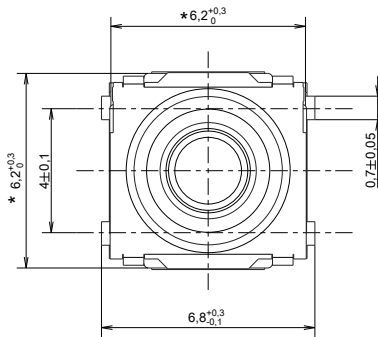
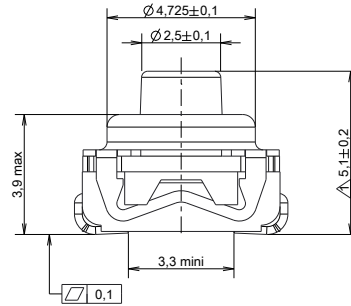
- Industrial electronics
- Consumer
- Medical equipment
- Automotive interior

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

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

Packaging

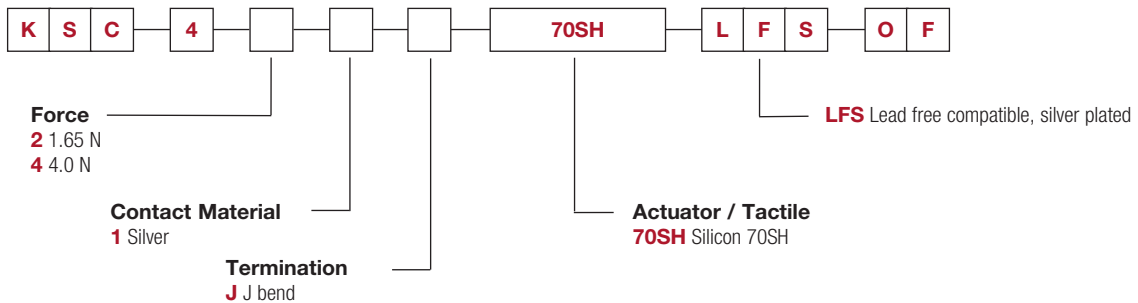
In reels of 1,000 pieces
 Dimensions of reels according to EIA RS481 or IEC 2863
 External diameter 330 ± 2 mm



B Tactile Switches

How To Order

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



Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW

KSC-TE Series Tireless Endurance Tact Switch



Features/Benefits

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

Typical Applications

- Elevator
- Game controllers
- Industrial applications

Tactile Switches

Type	Force (N)	Life	Travel (mm)
KSC2 TE 01J LFS	1.60+/-0.6	10,000,000	0.3+/-0.2

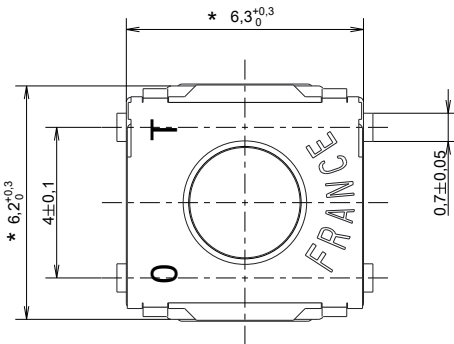
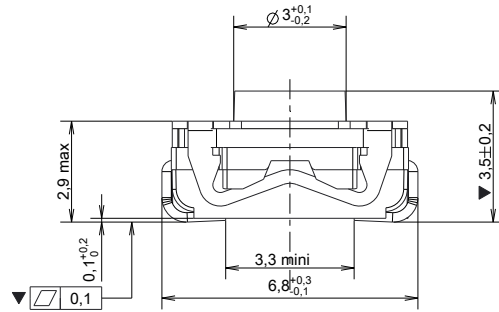
Life time at **10 million actuations** under electrical load (24 V, 1.3 mA)

Packaging

In reels of 2,000 pieces

Dimensions of reels according to EIA RS481 or IEC 2863

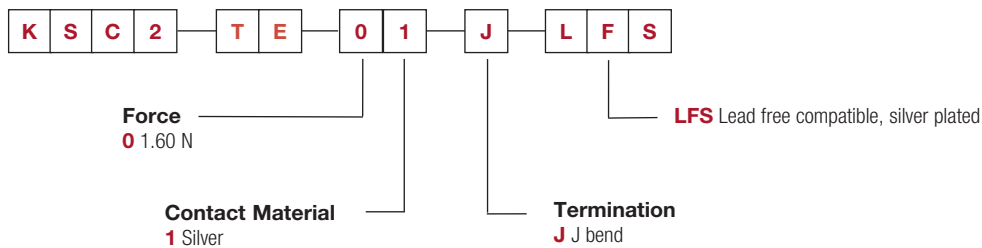
External diameter 330 ± 2 mm



How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

KSC5 Series

Tact Switch with Rocker Option for SMT

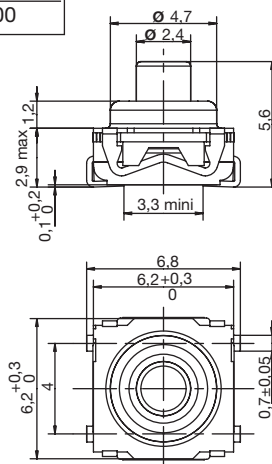
KSC5 hard actuator 5,6 mm high



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

Packaging

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

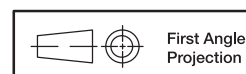
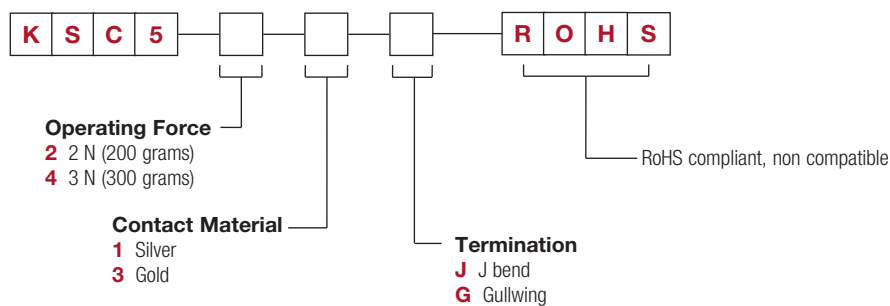


How To Order

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

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

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



First Angle Projection

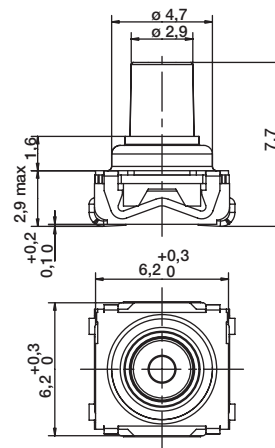
Dimensions are shown: mm
Specifications and dimensions subject to change

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



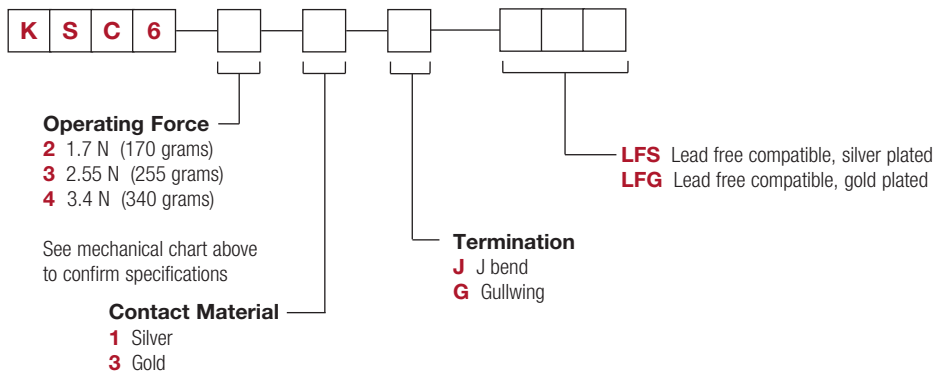
Packaging

Switches delivered on continuous tape & reels of 750 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 380 ± 2 mm

How To Order

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

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



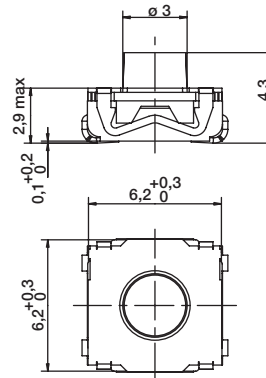
KSC7 Series Sealed Tact Switch for SMT

KSC7 soft actuator 4,3 mm high



Tactile Switches B

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



Packaging

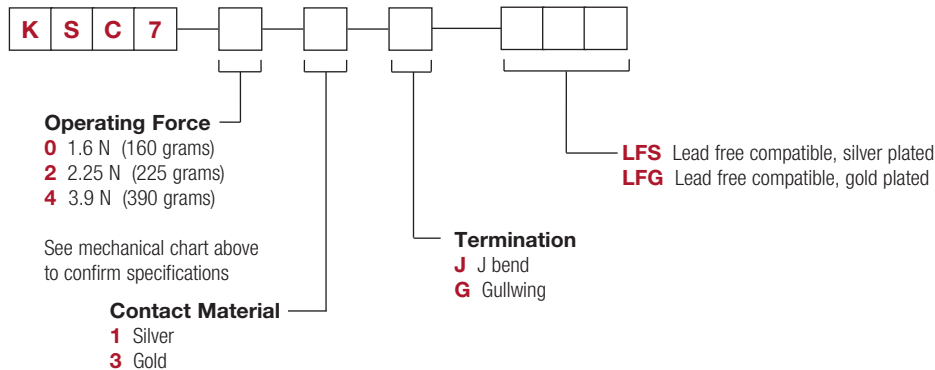
Switches delivered on continuous tape & reels of 1,000 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 330 ± 2 mm

How To Order

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

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

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

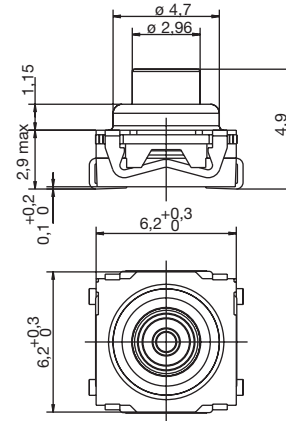


KSC8 Series Sealed Tact Switch for SMT

KSC8 hard actuator 4,9 mm high



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



Packaging

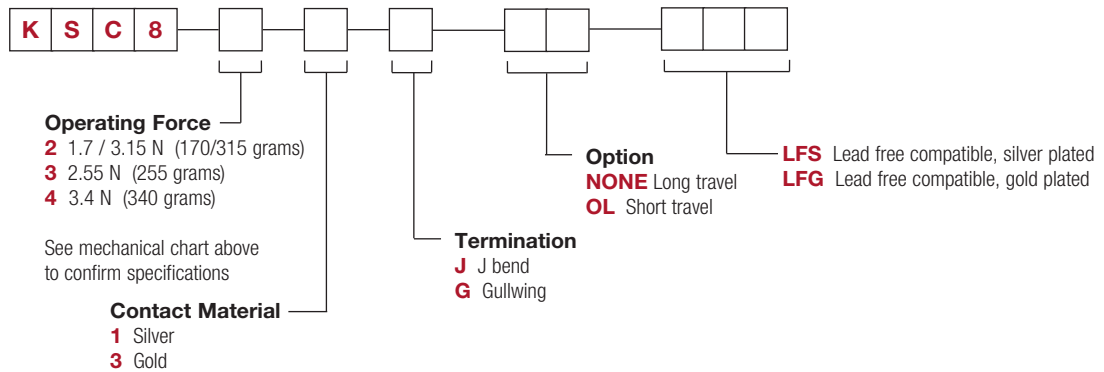
Switches delivered on continuous tape & reels of 1,000 pieces
 Dimensions according to EIA RS-481/ IEC 60286-3 standard
 External diameter 330 ± 2 mm

How To Order

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

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

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



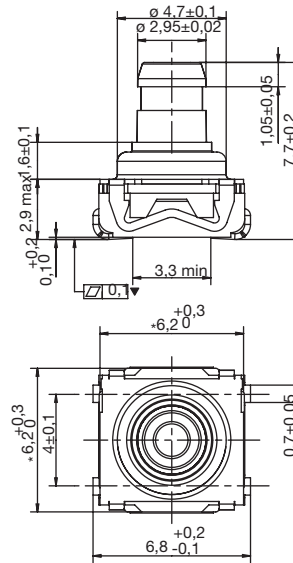
Dimensions are shown: mm
 Specifications and dimensions subject to change

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



Tactile Switches

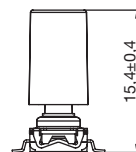
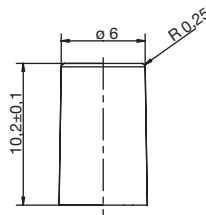
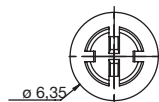
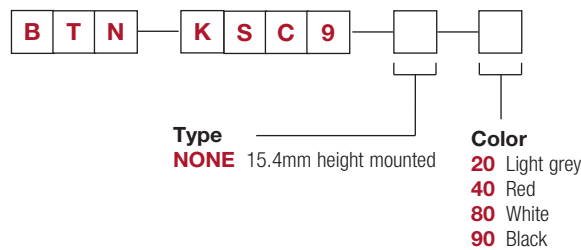
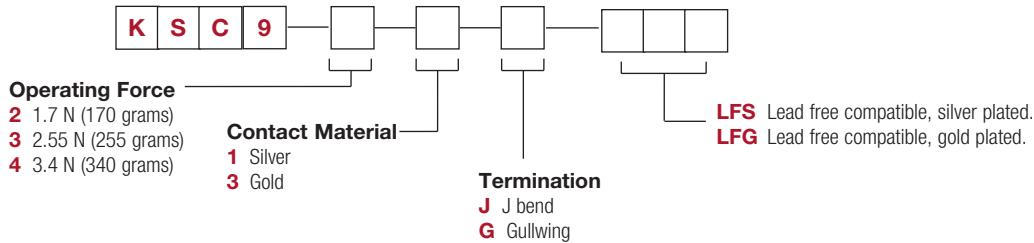
Packaging

Switches delivered on continuous tape & reels of 750 pieces
Dimensions according to EIA RS-481/ IEC 60286-3 standard
External diameter 380 ± 2 mm

How To Order

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

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



SWITCH WITH CAP



First Angle Projection



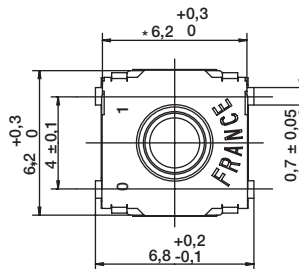
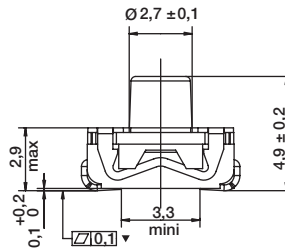
KSC10 Series Sealed Tact Switches for SMT

B Tactile Switches

KSC10 soft actuator 4,9 mm high



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



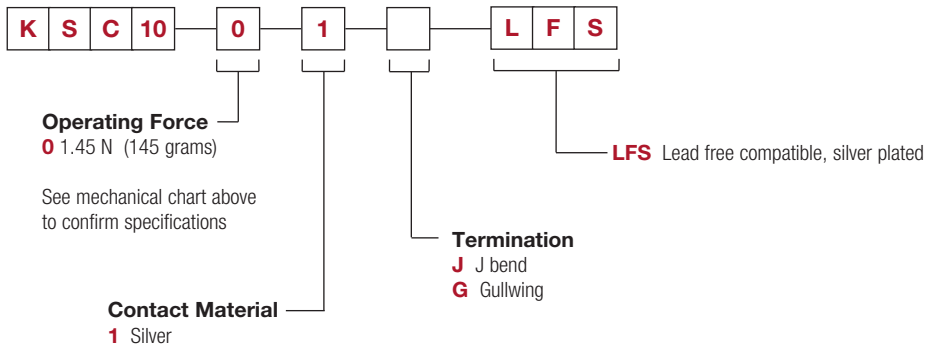
Packaging

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

How To Order

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

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



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



Dimensions are shown: mm
 Specifications and dimensions subject to change

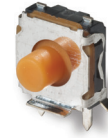
KSC V2 Series Side Actuated Sealed Tact Switch

Features/Benefits

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

Typical Applications

- Automotive
- Industrial electronics
- Network equipment
- Telecommunications



Specification

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

Mechanical

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

NOTE: Basic version is based on KSC441V2 SPDELTA LFS.
 Other configurations of haptics are available upon demand.

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

Electrical

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

DIELECTRIC STRENGTH (50 Hz, 1 min.): ≥ 250 Vrms
 CONTACT RESISTANCE: ≤ 100 mΩ
 INSULATION RESISTANCE (100 V, initial stage): > 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	-55°C to 125°C

Process

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

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

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

Packaging

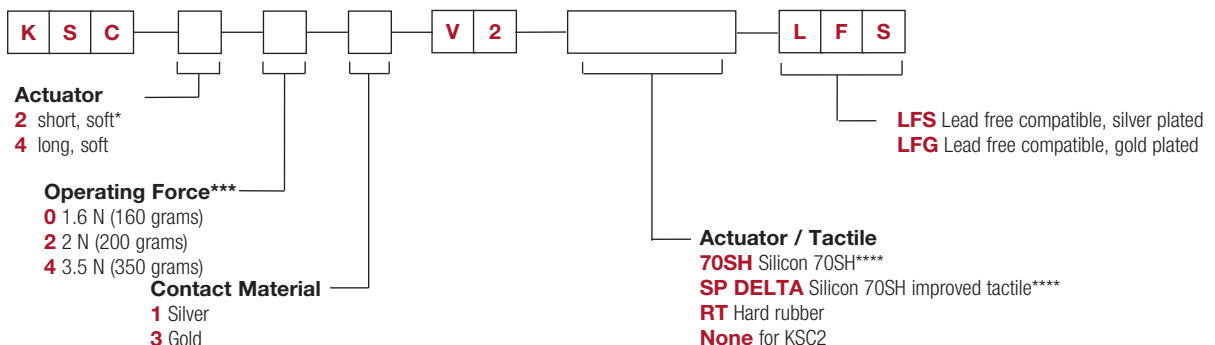
In reels of 800 pieces.
 Dimensions of reels according to EIA RS481 or IEC 2863.
 External diameter 380 mm ± 2 mm.

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

How To Order

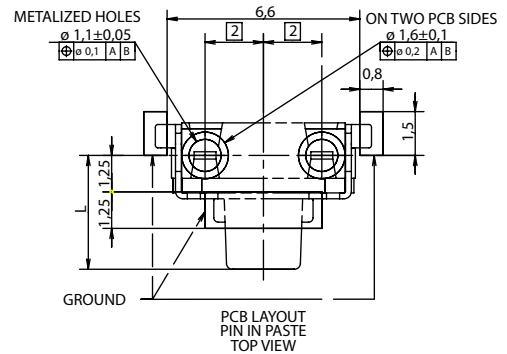
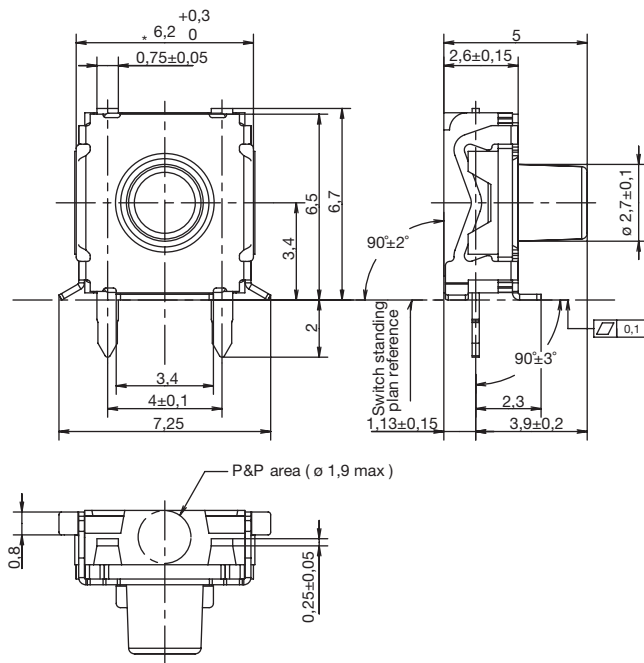
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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



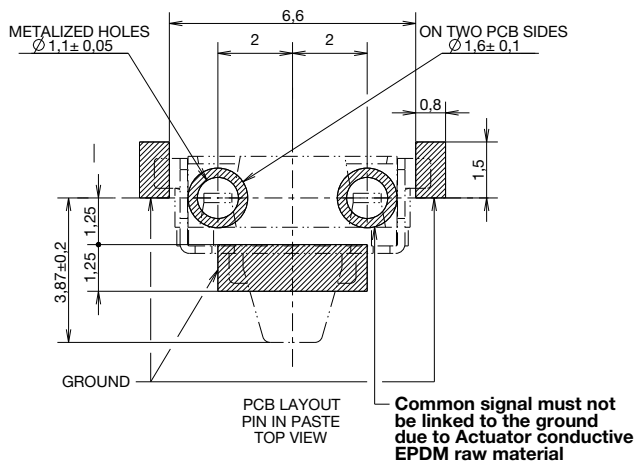
* KSC2 version available upon demand
 *** Force available upon demand (variant version)
 **** Available for KSC4 only

KSC V2 Series Side Actuated Sealed Tact Switch



Series	L
KSC2	2,3
KSC4	3,9

IMPORTANT NOTE FOR RT ACTUATOR

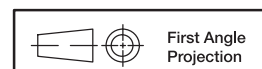


This actuator is not compatible with grease even with restricted contact.

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

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

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

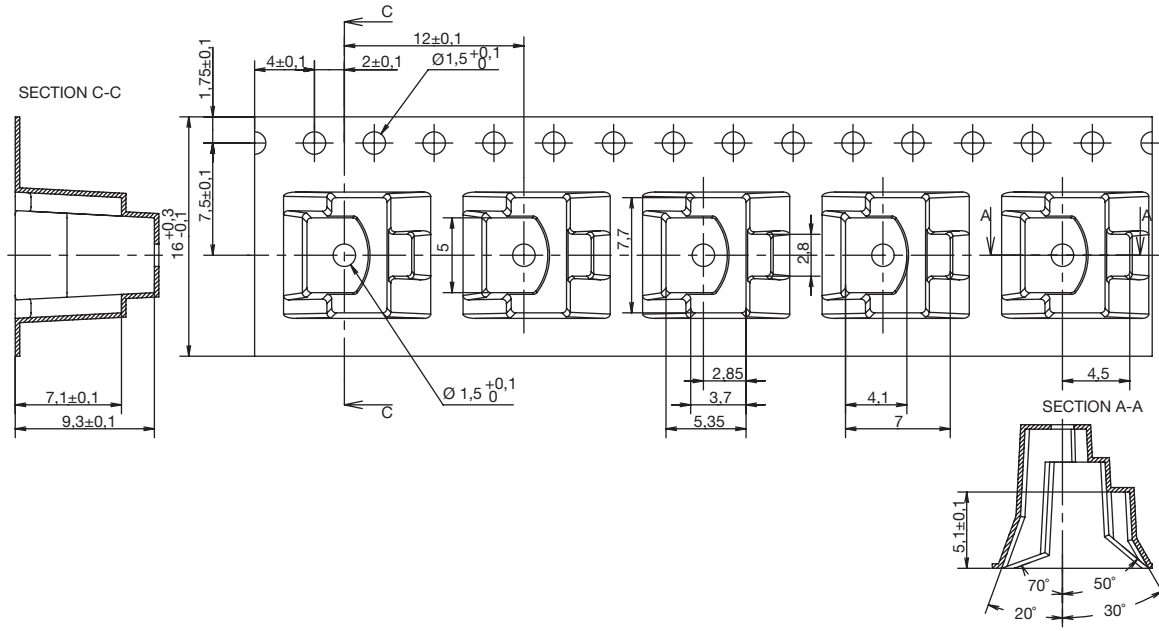


First Angle
Projection

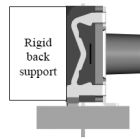
Dimensions are shown: mm

Specifications and dimensions subject to change

TAPE AND REEL



INTEGRATION

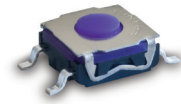


Features/Benefits

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

Typical Applications

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



Specification

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

Mechanical

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

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

Packaging

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

Electrical

MAXIMUM POWER: 1 VA
MINIMUM/MAXIMUM VOLTAGE: 20 mV / 32 VDC
MINIMUM/MAXIMUM CURRENT: 1 mA / 50 mA
DIELECTRIC STRENGTH: (50 Hz, 1 min.): ≥ 250 V
CONTACT RESISTANCE: ≤ 100 mΩ
INSULATION RESISTANCE: (100 V): ≥ 10⁹ Ω
BOUNCE TIME: ≤ 1 ms

Environmental

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

Process

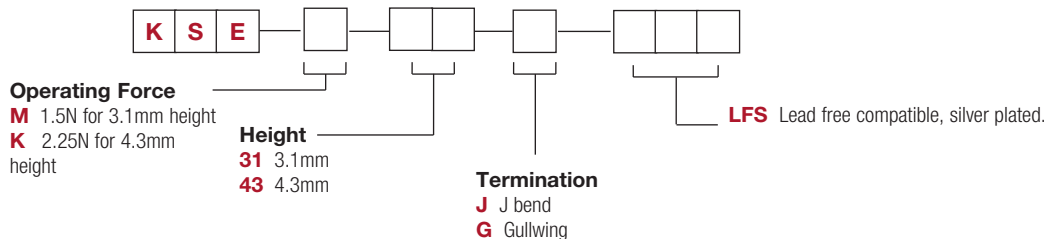
SOLDERING: Depending on the application, this component is suited to the following methods:
– Cleaning according to typical washing processes.
– Lead free reflow soldering process in accordance with IEC 61760-1.

NOTE:

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

How To Order

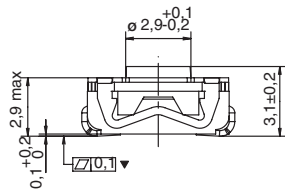
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



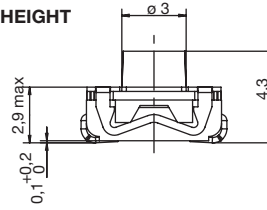
KSE Series Low Profile Tact Switch

HEIGHT

31 3.1 MM HEIGHT

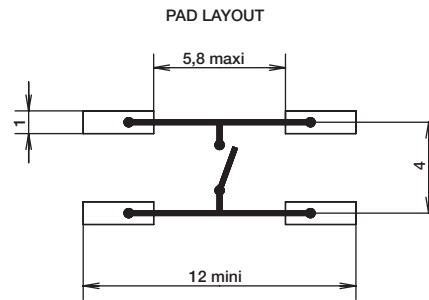
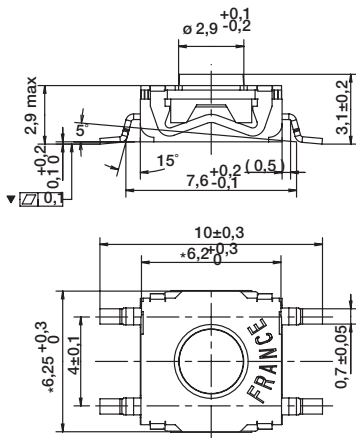


43 4.3 MM HEIGHT

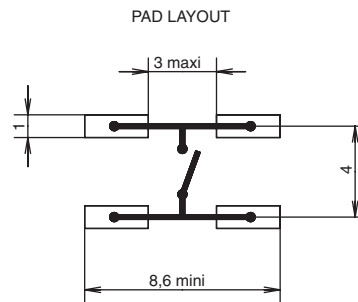
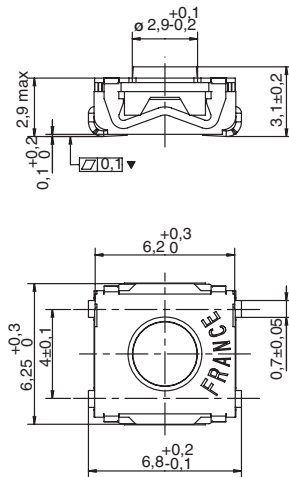


TERMINATION

G GULLWING



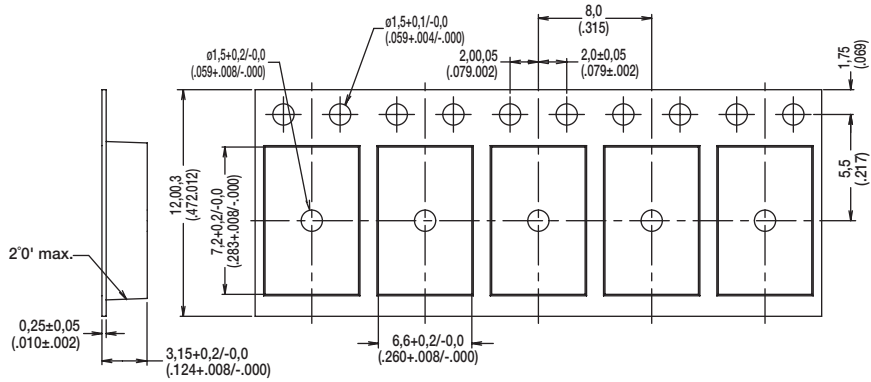
J J BEND



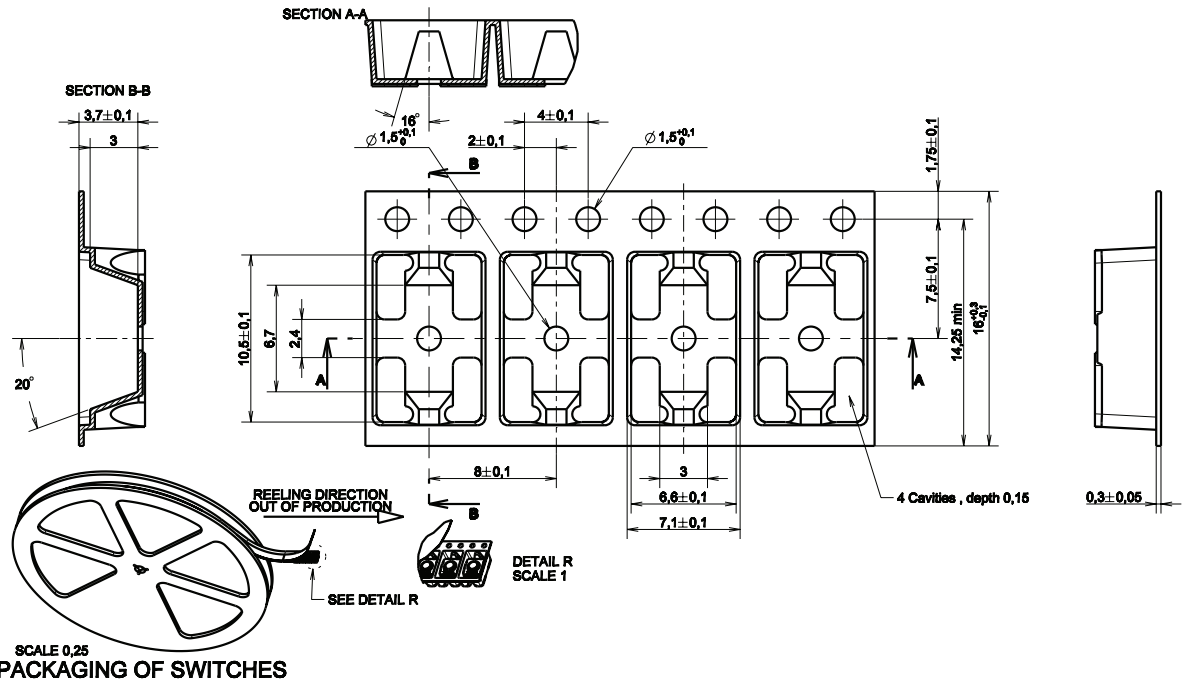
KSE Series Low Profile Tact Switch

TAPE & REEL

12 mm height



16 mm height



B
Tactile Switches

KST Series Long Travel Tact Switch for SMT

Features/Benefits

- Rubber actuator
- Silver contact material
- J or G terminals
- Compatible with pick and place machines

Typical Applications

- Front panel
- Car dashboards
- Telephone set
- Instrumentation



- IP40 sealed
- RoHS compliant and compatible

Specification

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

Mechanical

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

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

Packaging

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

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

Electrical

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

Environmental

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

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

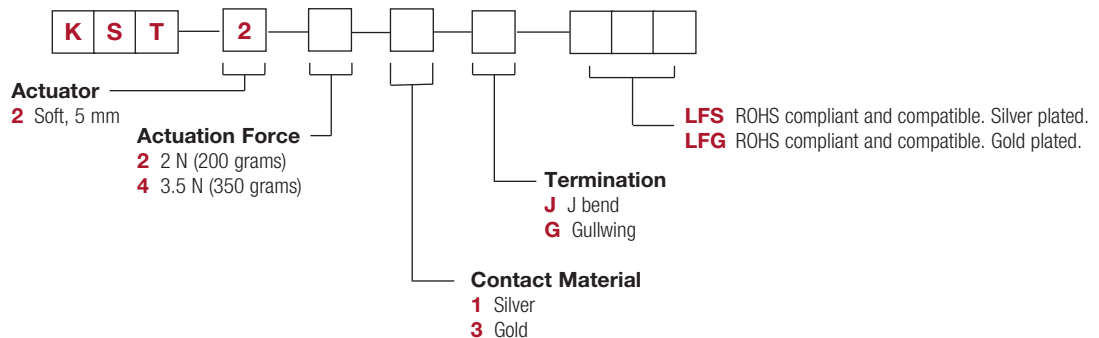
Process

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

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

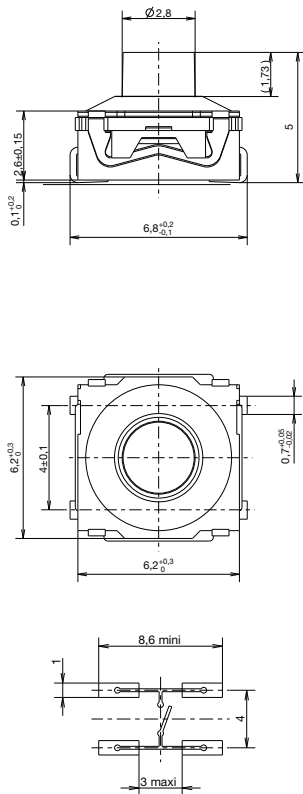
How To Order

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

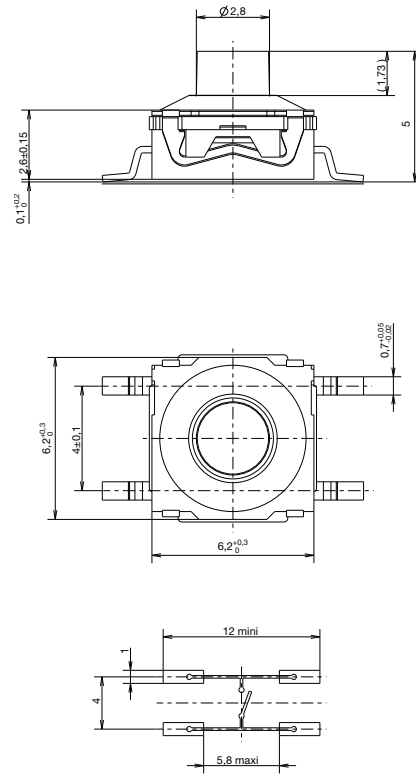


KST Series Long Travel Tact Switch for SMT

J J BEND



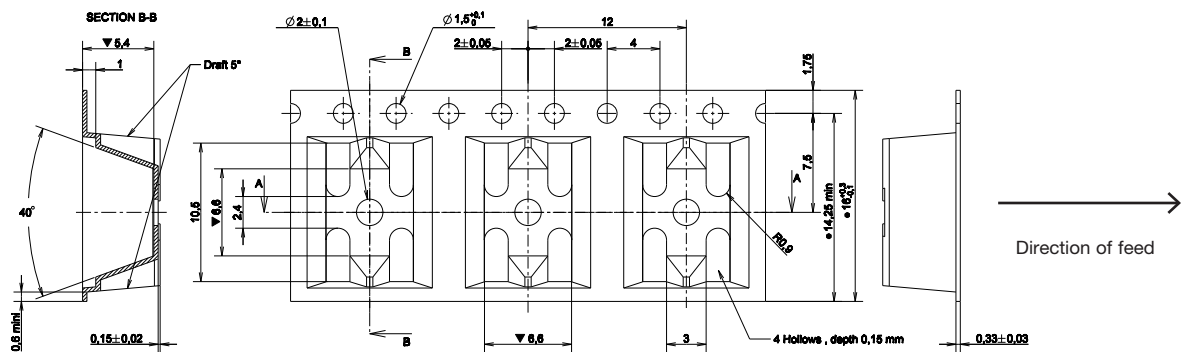
G GULLWING



B Tactile Switches

TAPE & REEL

FOR J AND G TERMINATION



Dimensions are shown: mm
Specifications and dimensions subject to change

KT Series

Full SMT Top & Side Actuated Sealed Tact Switch



Features/Benefits

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

Typical Applications

- Telecommunications
- Computer products
- Instrumentation
- Power supply

Specification

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

Electrical

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

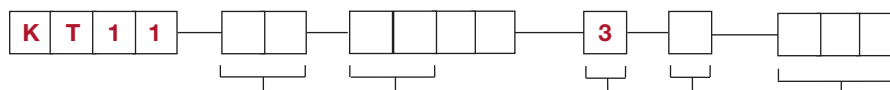
How To Order

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

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

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

SWITCH



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 (with anti-rotation)

Orientation and Mounting Style

- SM** Top Gullwing
- JM** Top J Bend ****
- SAM** Right angle
- SA1M** Right angle with front solder pad
- SA2M** Right angle with front solder pad and pick & place tab
- SA3M** Right angle with pick & place tab

Contact Plating

- 4** Silver
- 5** Gold

Contact Plating

- LFS** RoHS compliant and compatible. Silver plated
- LFG** RoHS compliant and compatible. Gold plated

* 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 Style

- 02** Press fit
- 03** Snap fit, high temperature

Button Color

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



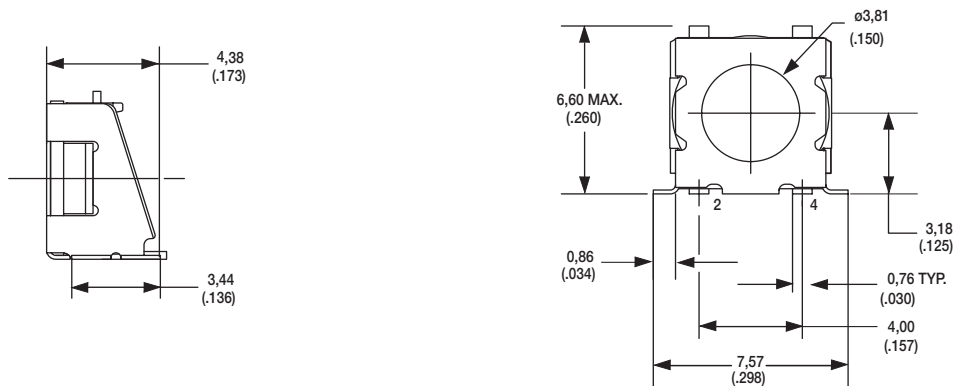
Dimensions are shown: mm
Specifications and dimensions subject to change

KT Series

Full SMT Top & Side Actuated Sealed Tact Switch

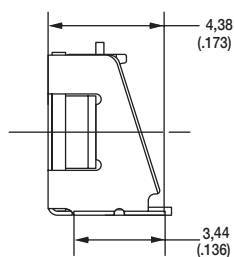
SERIES

KT11

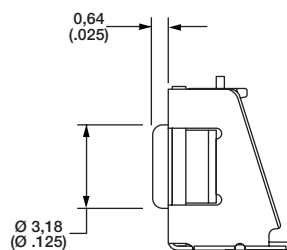


ACTUATOR

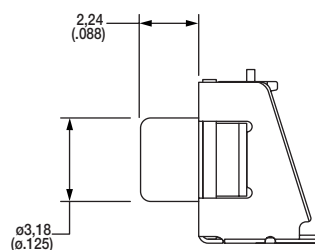
B0 SOFT, FLUSH*



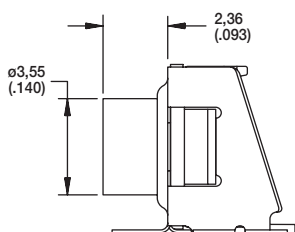
B1 SOFT, 0,64 mm*



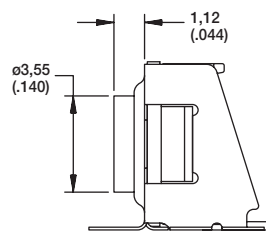
B2 SOFT, 2,24 mm*



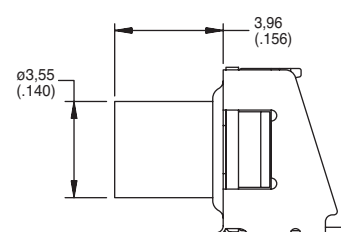
P2 HARD, 2,36 mm



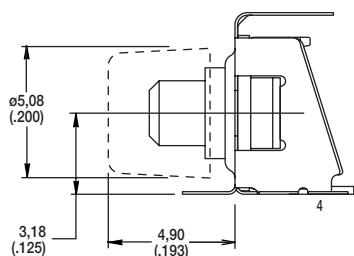
P3 HARD, 1,12 mm



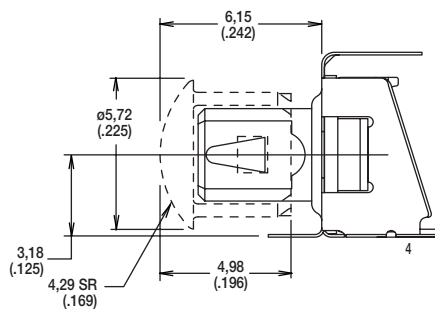
P4 HARD, 3,96 mm**



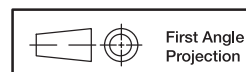
S1 Ø0,1" FOR PRESS FIT CAPS***



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.

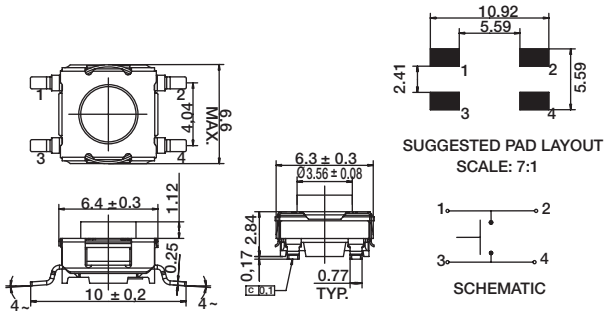


Dimensions are shown: mm
 Specifications and dimensions subject to change

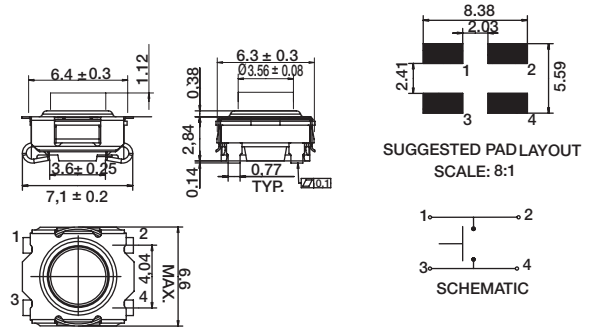
KT Series Full SMT Top & Side Actuated Sealed Tact Switch

ORIENTATION & MOUNTING STYLE

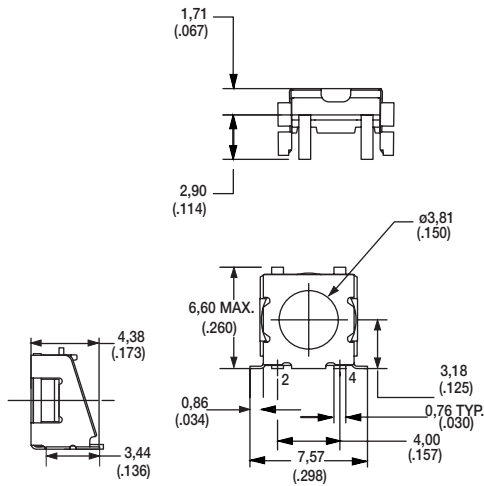
SM TOP GULLWING



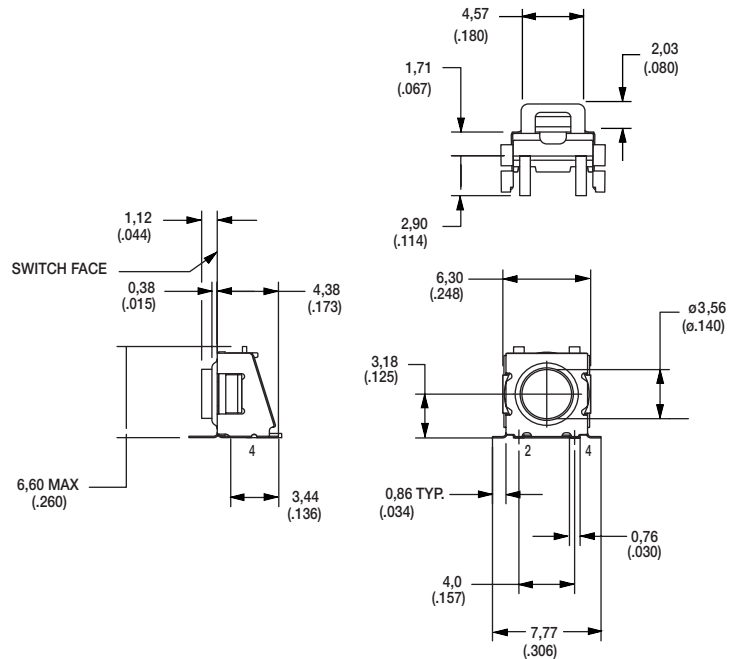
JM TOP J BEND



SAM RIGHT ANGLE



SA1M RIGHT ANGLE WITH FRONT SOLDER PAD



Dimensions shown in mm
Specific dimensions are subject to change

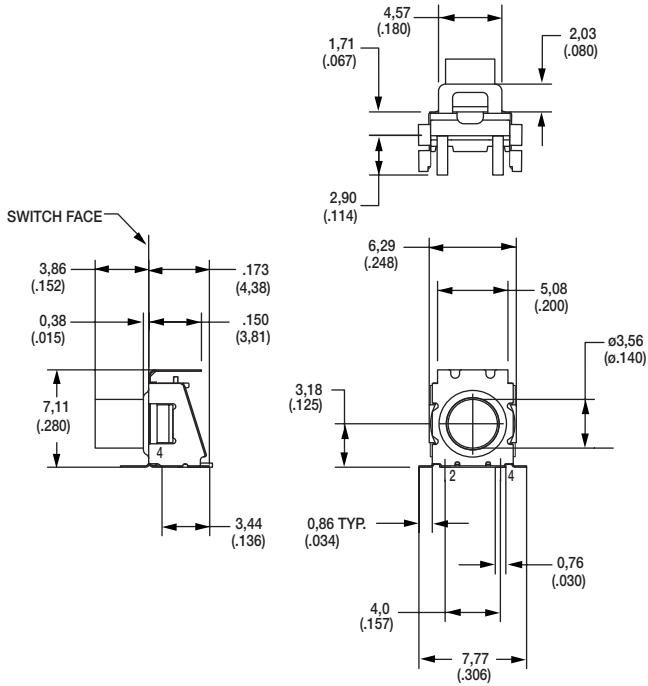
KT Series Full SMT Top & Side Actuated Sealed Tact Switch



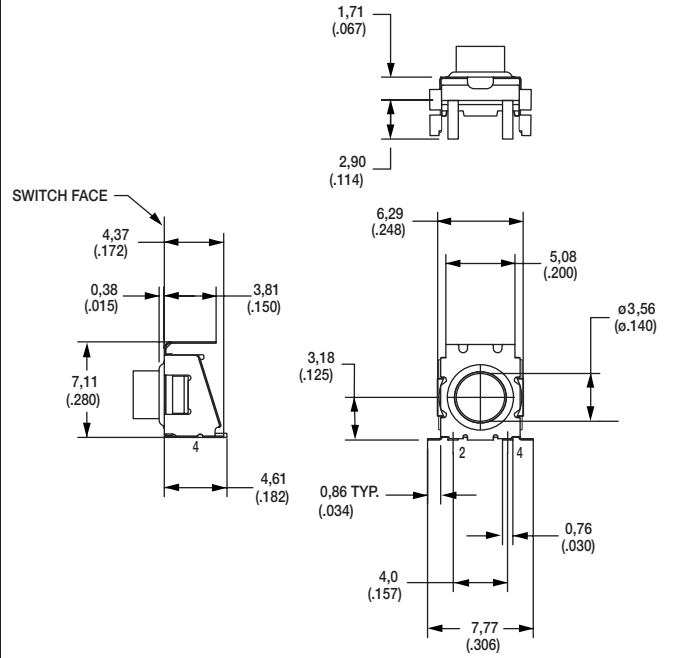
B

Tactile Switches

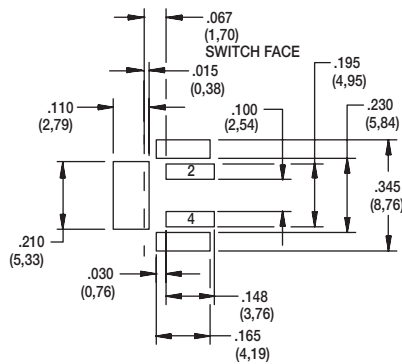
SA2M RIGHT ANGLE WITH FRONT SOLDER PAD AND PICK & PLACE TAB



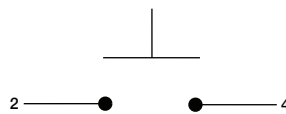
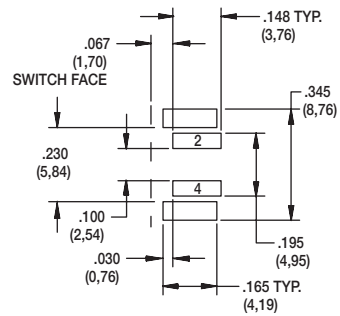
SA3M RIGHT ANGLE WITH PICK & PLACE TAB



**PAD LAYOUT
SA1M & SA2M MOUNTING BRACKET**



**PAD LAYOUT
SAM & SA3M MOUNTING BRACKET**



SCHEMATIC



First Angle
Projection



Dimensions are shown: mm
Specifications and dimensions subject to change

KT Series Full SMT Top & Side Actuated Sealed Tact Switch

BUTTON

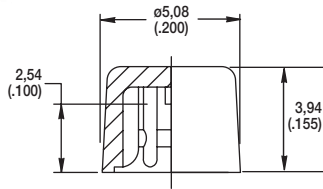
BUTTON

To order buttons in bulk

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

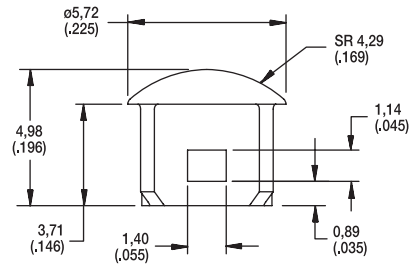
Materials: Nylon
Finish: Gloss



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



K5AT Illuminated SMT Tact Switch

Features

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

Typical Applications

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



B

Tactile Switches

Specification

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

Mechanical

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

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

Electrical

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

Environmental

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

Process

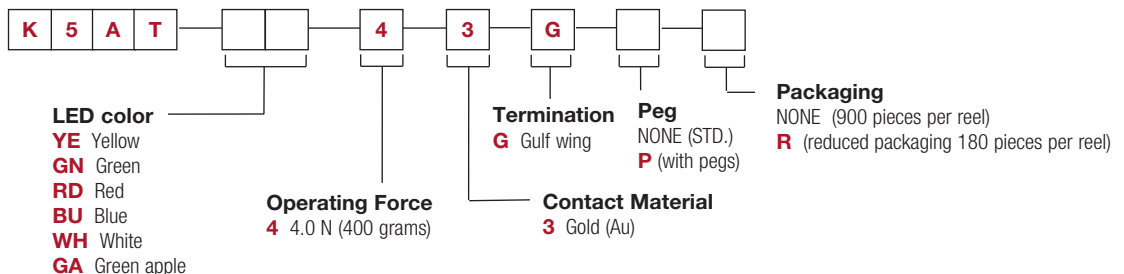
SOLDERING: Compatible with the lead free soldering profile.
 No washing
 MSL Level: 5

Materials

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

How To Order

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



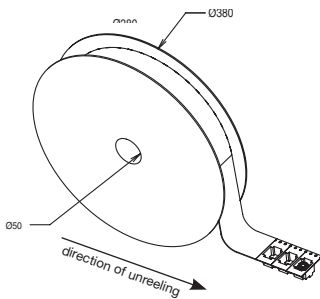
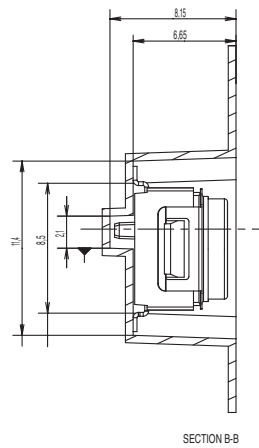
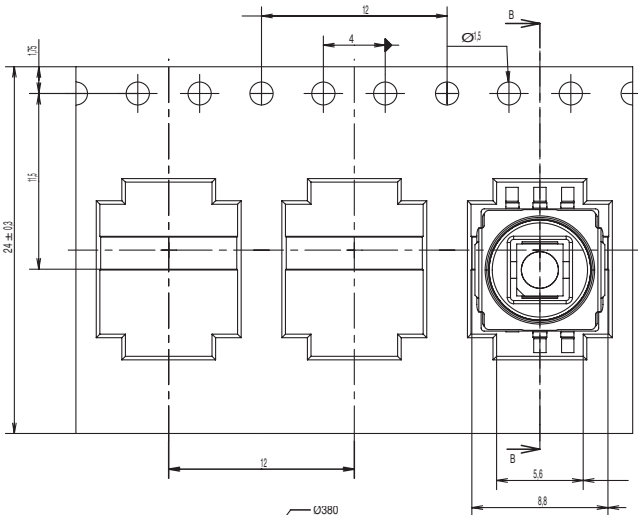
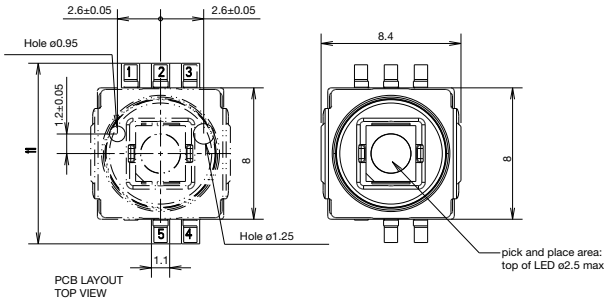
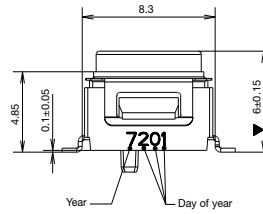
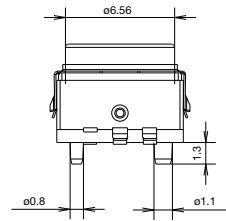
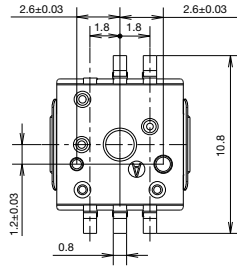
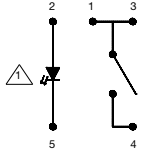
K5AT Illuminated SMT Tact Switch

K5AT

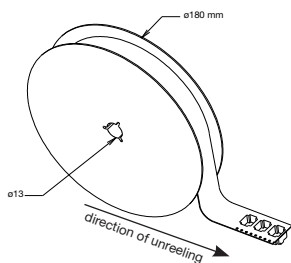
Tactile Switches

B

ELECTRICAL GRAPH



900 pieces per reel (ø380mm)



180 pieces per reel (ø180mm)



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change



10 jan 18

K8

Illuminated SMT Tact Switch with Dedicated LED

Features

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

Typical Applications

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



Specification

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

Mechanical

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

Tolerances on actuation force is $\pm 25\%$.
 SEALING LEVEL: IP40

Illumination Colors

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

Packaging

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

Electrical

MAXIMUM POWER: 1.0 VA
 MAXIMUM VOLTAGE: 32 VDC
 MINIMUM VOLTAGE: 20 mV
 MAXIMUM CURRENT: 50 mA
 MINIMUM CURRENT: 1 mA
 DIELECTRIC STRENGTH: (50 Hz, 1 min.) ≥ 250 Vrms
 CONTACT RESISTANCE: $< 100\text{m}\Omega$
 INSULATION RESISTANCE: (100 V, initial stage) $> 10^9\Omega$
 BOUNCE TIME: < 10 ms

Environmental

OPERATING TEMPERATURE: -40°C to $+85^\circ\text{C}$
 STORAGE TEMPERATURE: -55°C to $+85^\circ\text{C}$

Process

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

Materials

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

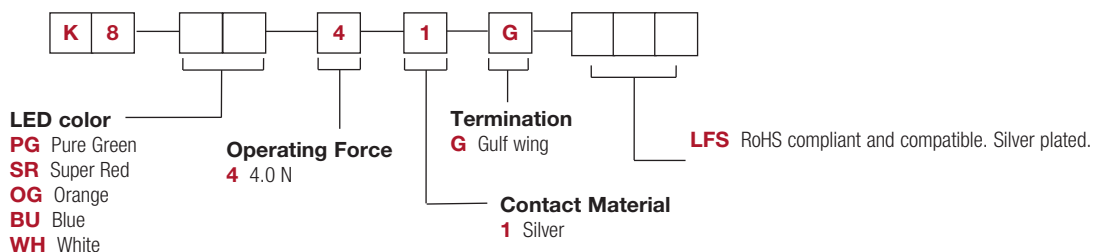
NOTE:

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

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

How To Order

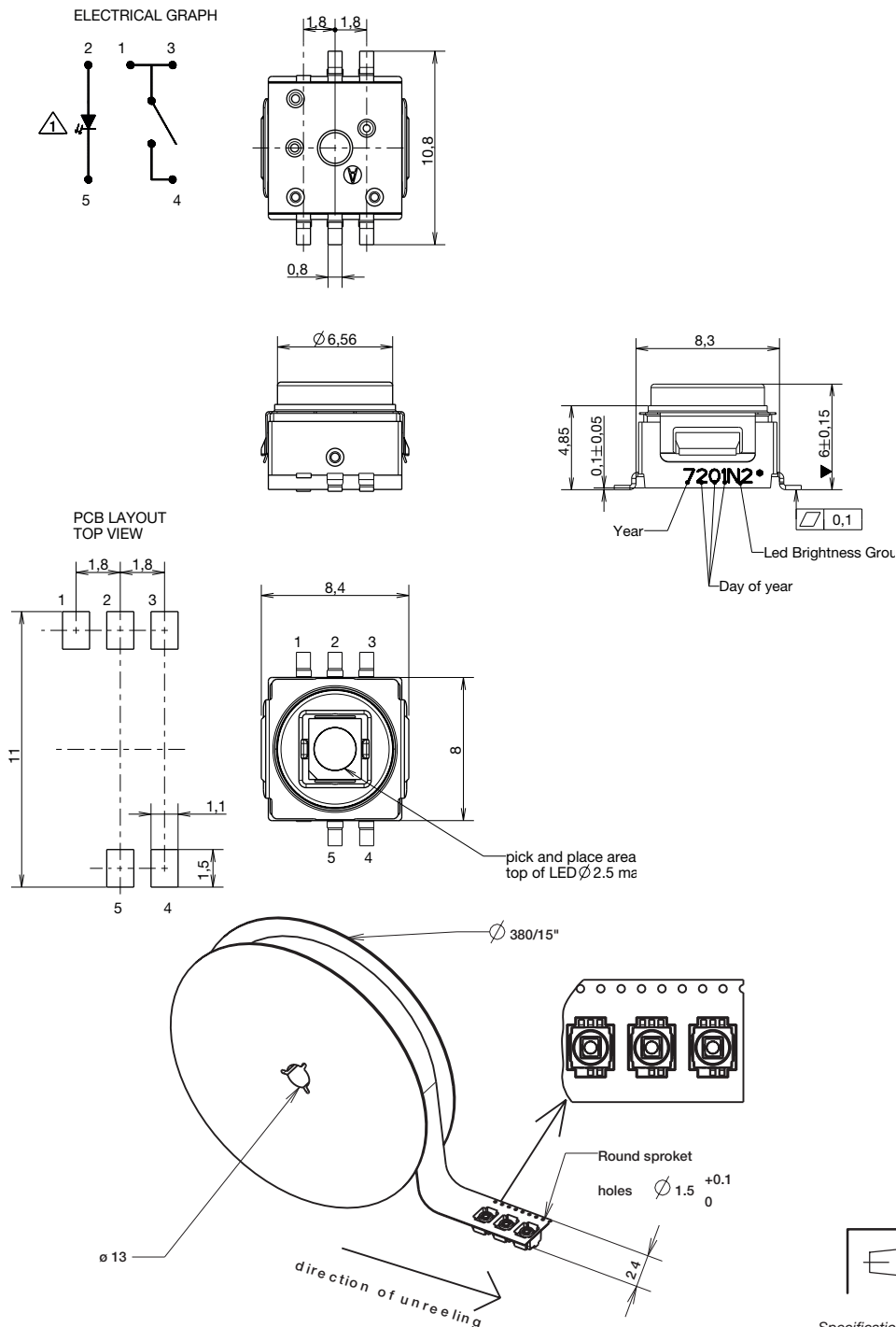
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



K8 Illuminated SMT Tact Switch with Dedicated LED

Tactile Switches

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



K5V Illuminated Tact Switch



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

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%.

Environmental

OPERATING TEMPERATURE: -40°C to 85°C
 STORAGE TEMPERATURE: -50°C to 85°C
 RELATIVE HUMIDITY: 90 to 96% according to NF EN 60068-2-30
 PROTECTION: dust protection and flux tight
 OVERLOAD: 40N min

Packaging

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

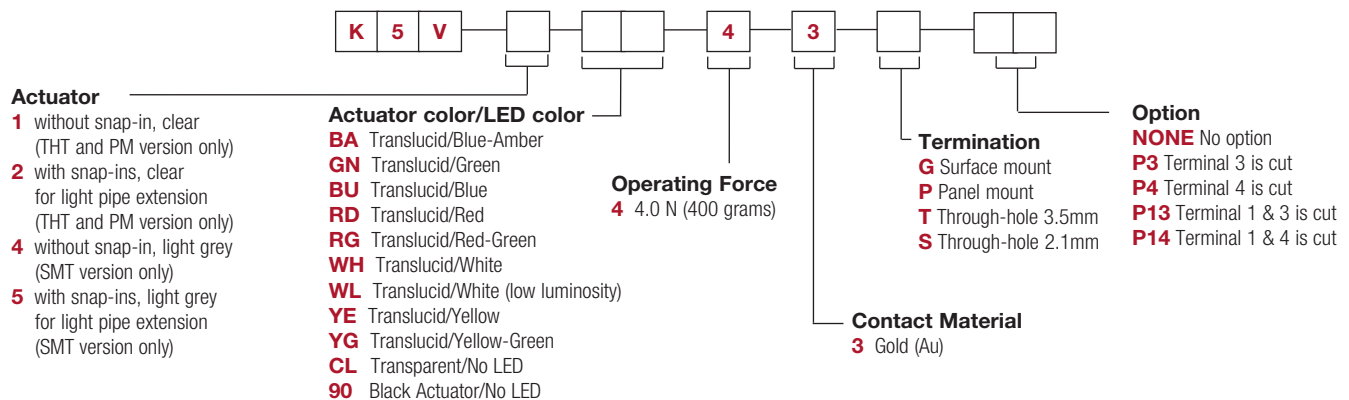
SMT
 Soldering: Compatible with the lead free soldering profile
 No washing
 THT
 Soldering: Compatible with the lead free soldering profile
 No washing
 PM
 Soldering: Low wattage soldering iron (25-50 watts max).
 Solder time 3 seconds max. No washing

Materials

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

How To Order

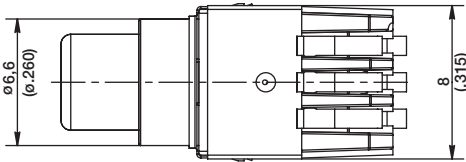
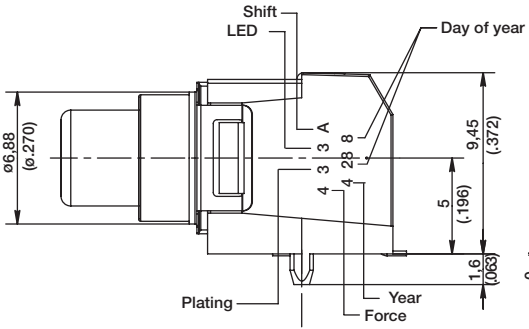
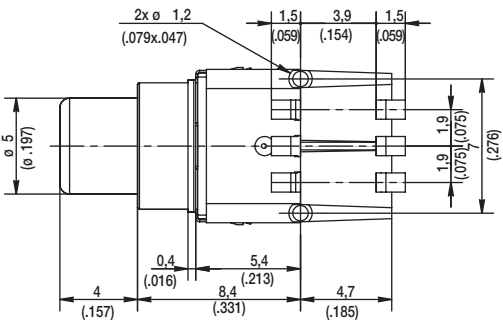
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.



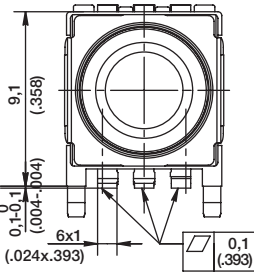
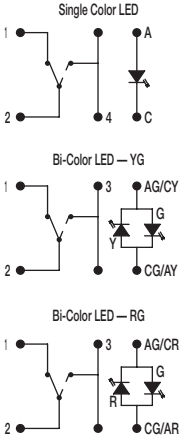
Dimensions are shown: mm
 Specifications and dimensions subject to change

K5V Illuminated Tact Switch

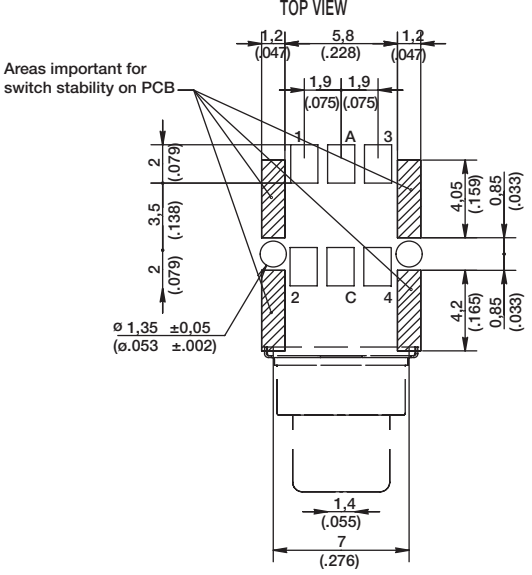
K5V SMT



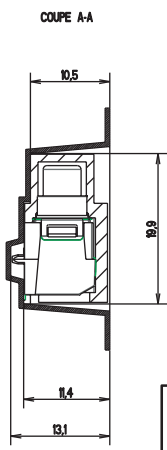
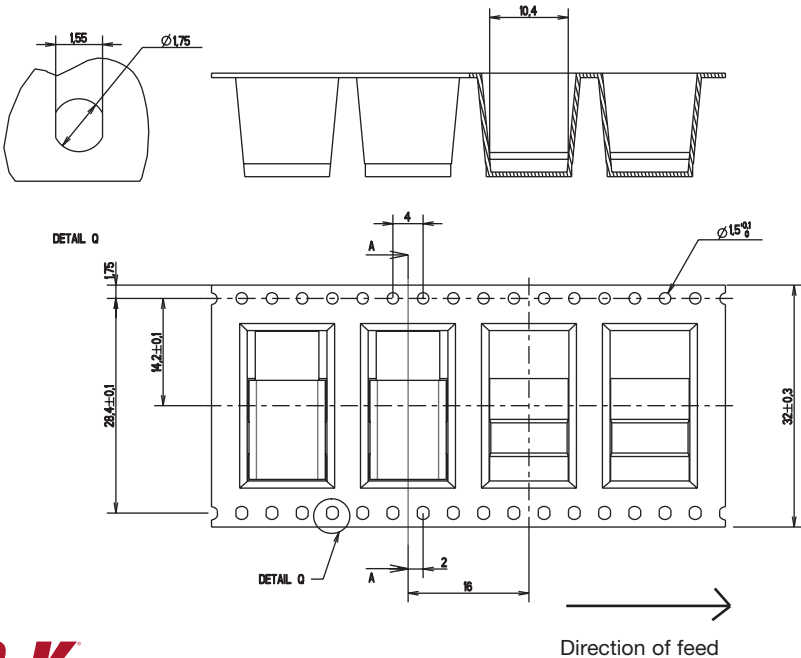
ELECTRICAL DIAGRAM



RECOMMENDED PCB LAYOUT (WITH HOLES)



TAPE & REEL



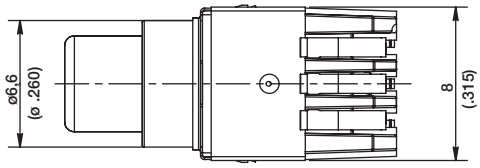
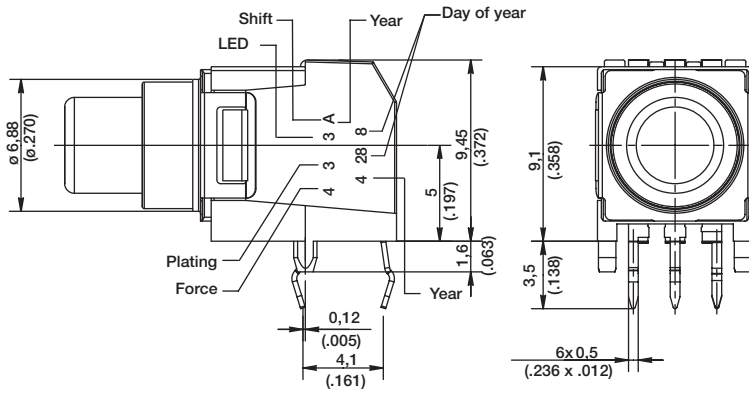
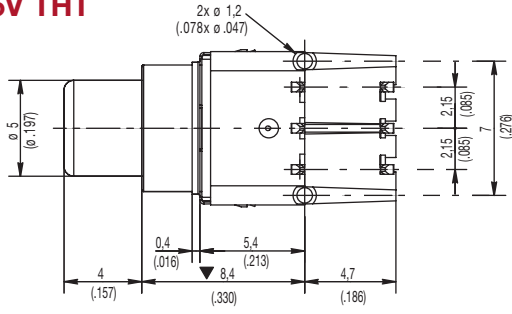
Dimensions are shown: mm
Specifications and dimensions subject to change



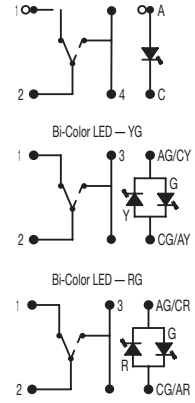
K5V Illuminated Tact Switch

Tactile Switches B

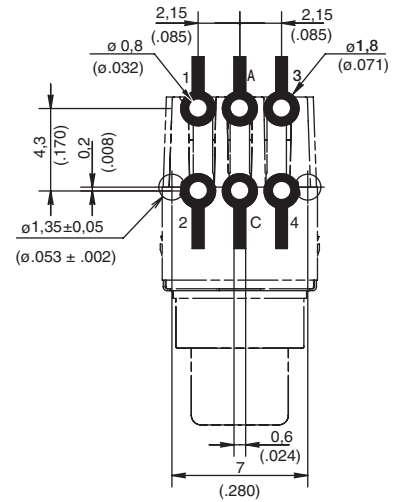
K5V THT



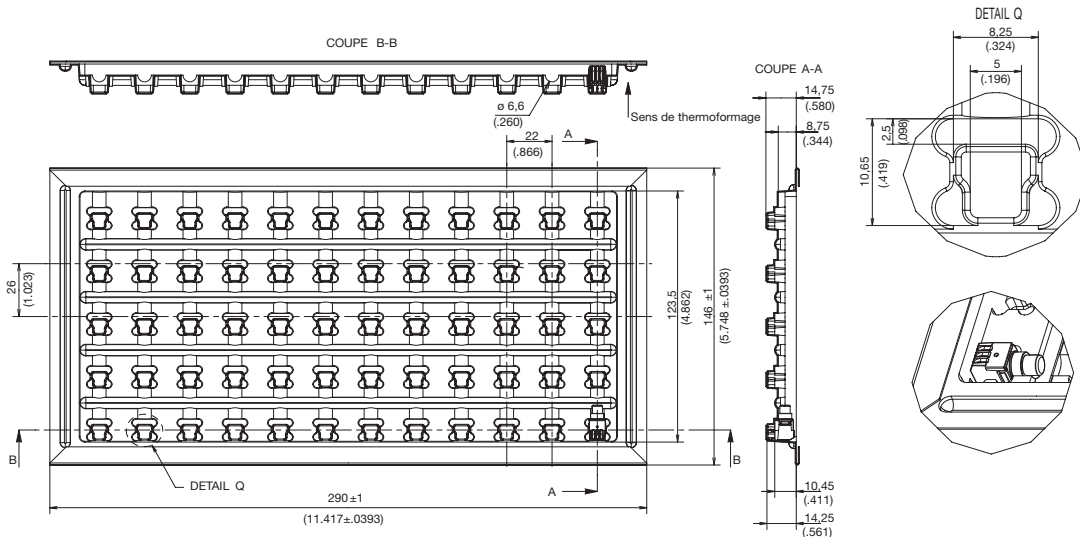
ELECTRICAL DIAGRAM



RECOMMENDED PCB LAYOUT (WITH HOLES) TOP VIEW



TRAY

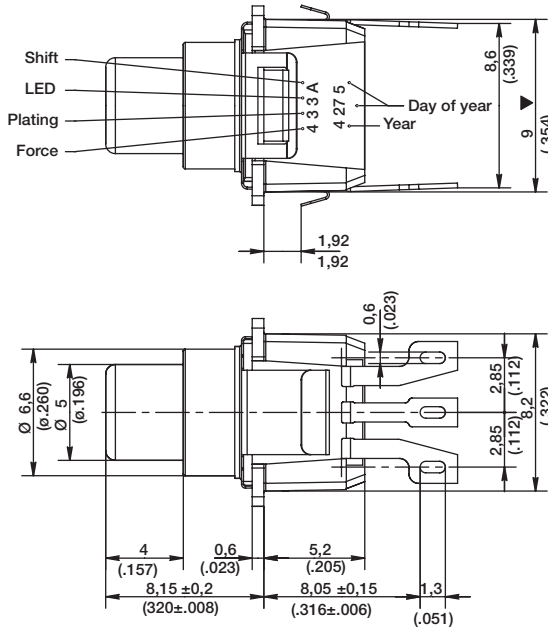


Dimensions are shown: mm
Specifications and dimensions subject to change

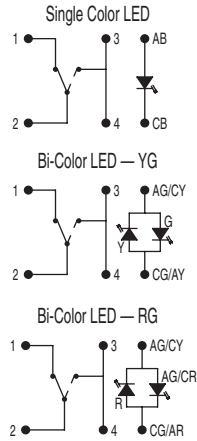
K5V Illuminated Tact Switch

K5V PM

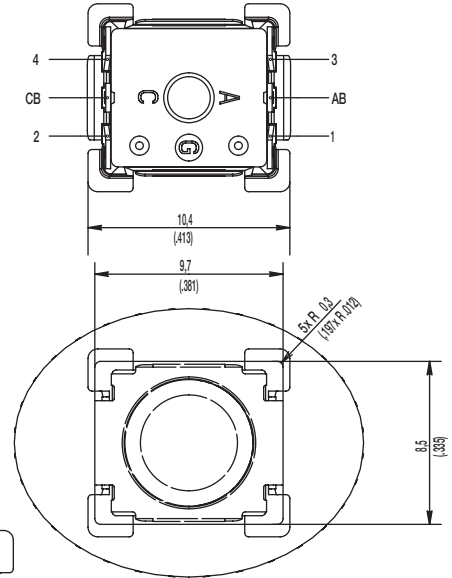
PRODUCT IDENTIFICATION AND DATE CODES



ELECTRICAL DIAGRAM

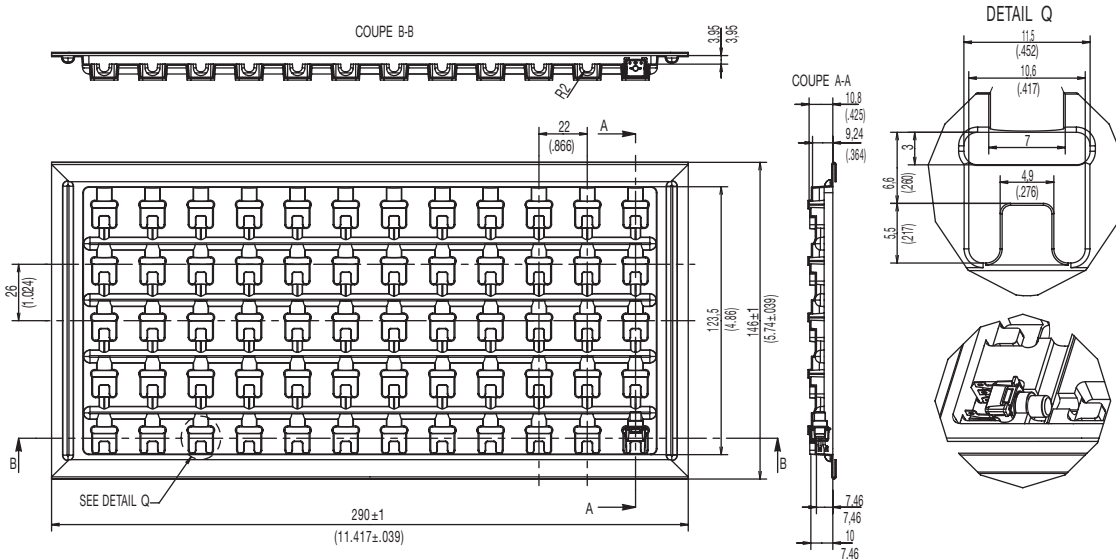


TERMINAL REFERENCES



TRAY

SUITABLE FOR PANEL THICKNESS OF 1.8MM MAX



KSF & KSFI Series Soft Actuated Tact Switch



Features/Benefits

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

Typical Applications

- Low profile keyboards
- Automotive interfaces
- Industrial control

Specification

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

Mechanical

Type	Force (N)	Operating life (operations)	Travel (mm)
KSF0M211LFTR	1.5 ± 0.5	100,000	0.25 ± 0.1
KSF0M311LFTR	1.9 ± 0.5	100,000	0.25 ± 0.1
KSF0M411LFTR	3.0 ± 0.75	100,000	0.25 ± 0.1
KSF0M511LFTR	5.2 ± 1.0	100,000	0.25 ± 0.1
KSF10V91170SH 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): > 10 ⁹ Ω		
BOUNCE TIME: < 1 ms		

Environmental

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

Process

SOLDERING

Packaging

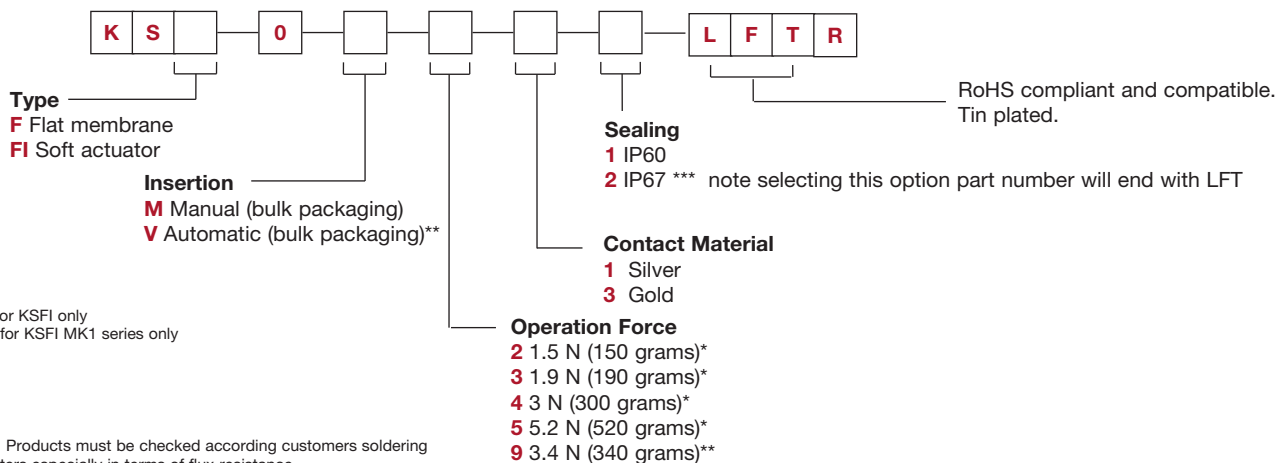
In boxes of 250 pieces (V type) or 500 pieces (M type).

How To Order

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

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

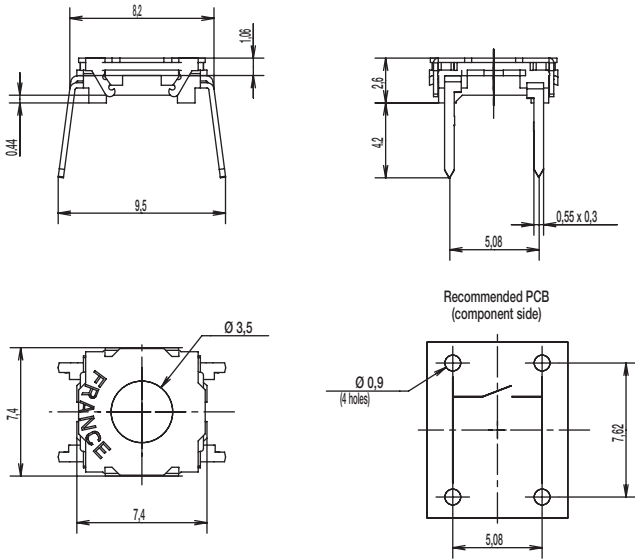
For any part number different from those listed above, please consult your local representative.



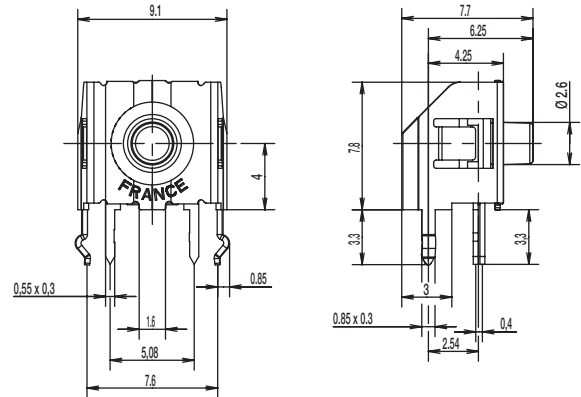
NOTE: Products must be checked according customers soldering parameters especially in terms of flux resistance.

KSF & KSFI Series Soft Actuated Tact Switch

KSF



KSFI 0V



Tactile Switches

KSA & KSL Series Sealed Tact Switch



Features/Benefits

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

Typical Applications

- Automotive
- Industrial
- Telecommunication networks

Tactile Switches

Specification

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

Mechanical

Type	Actuation force N	Operating life (operations)	Travel to make
KSA0M211	1,4 ± 0,4	100,000	0,5 ± 0,2
KSA0M311	1,4 ± 0,4	1,000,000	0,5 ± 0,2
KSA0M411	3 ± 0,75	100,000	0,6 ± 0,2
KSA0M511	5 ± 1,5	100,000	0,7 ± 0,2
KSA0M911	3 ± 0,75	500,000	0,6 ± 0,2
KSL0M211	1,4 ± 0,4	100,000	0,5 ± 0,2
KSL0M311	1,4 ± 0,4	1,000,000	0,5 ± 0,2
KSL0M411	3 ± 0,75	100,000	0,6 ± 0,2
KSL0M511	5 ± 1,5	100,000	0,7 ± 0,2
KSL0M911	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.

Electrical

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

Environmental

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

Process

Wave soldering compatible with lead free soldering profile.

Packaging

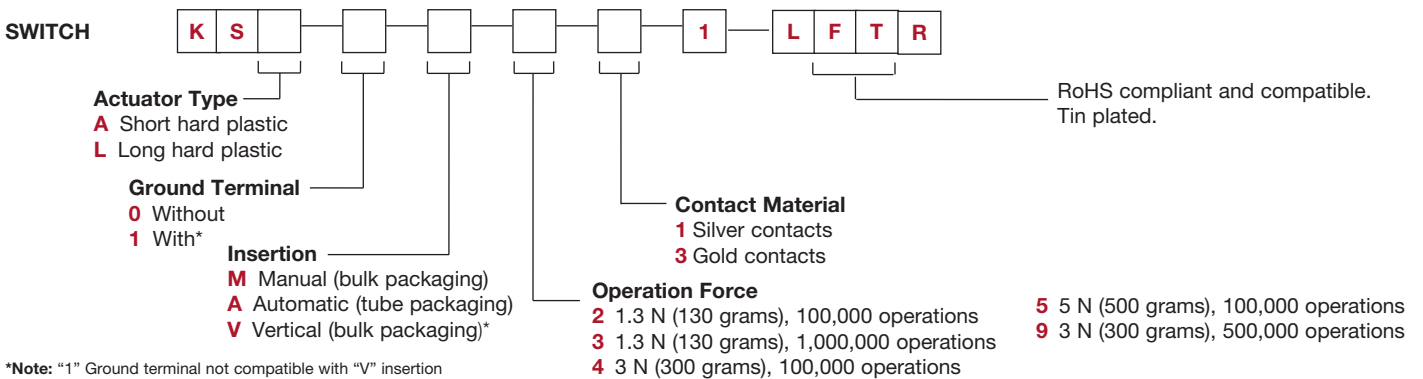
Can be delivered in tubes of 65 pieces for automatic insertion or in boxes of 500 pieces for manual insertion (250 pieces for KSL, KSLV, KSAV).

How To Order

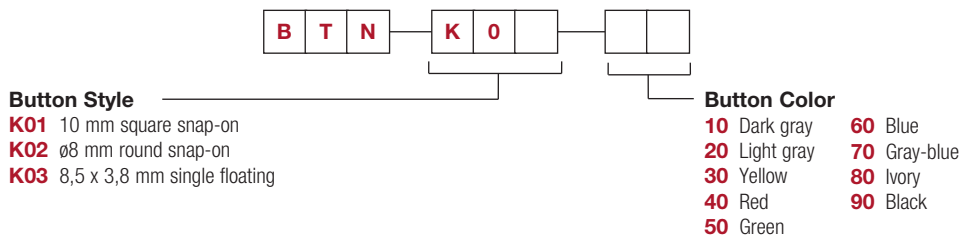
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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.



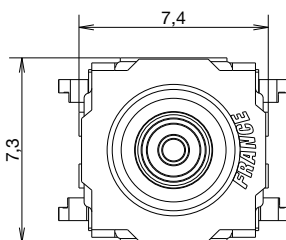
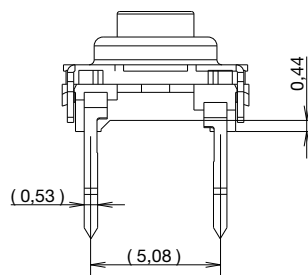
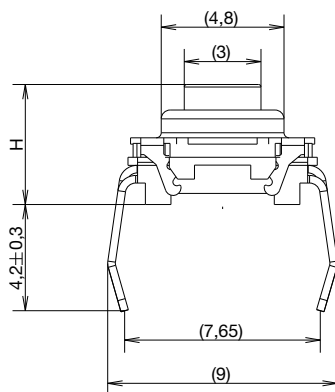
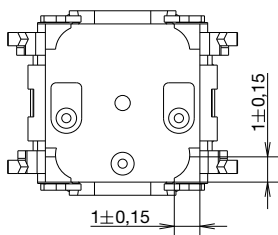
BUTTONS Buttons must be ordered separately and will be supplied in bulk.



KSA & KSL Series Sealed Tact Switch

ACTUATOR TYPE 

KSA & KSL



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

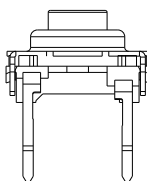


B

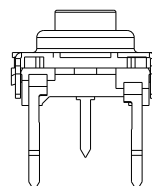
Tactile Switches

GROUND TERMINAL 

0 WITHOUT



1* WITH



*Not compatible with "V" insertion



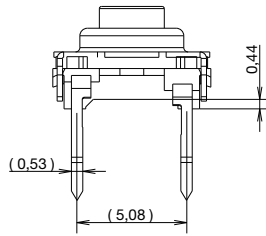
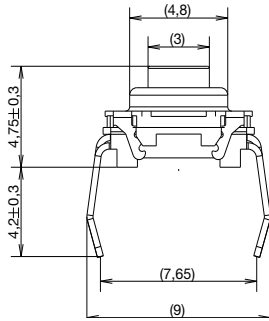
First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

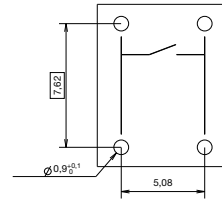
KSA & KSL Series Sealed Tact Switch

INSERTION

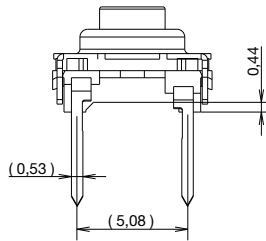
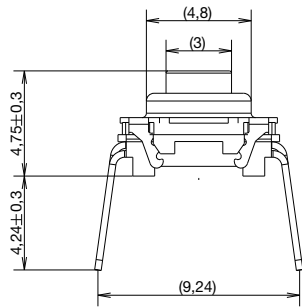
M MANUAL (BULK PACKAGING)



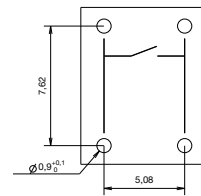
PCB LAYOUT



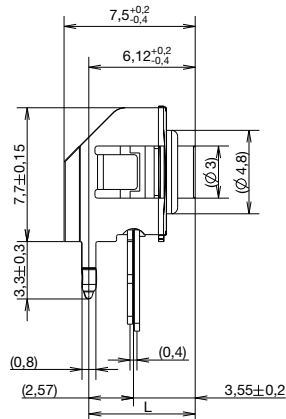
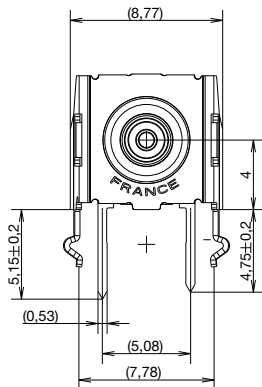
A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)



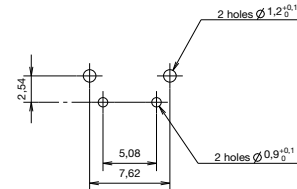
PCB LAYOUT



V VERTICAL



PCB LAYOUT



DIMENSION L

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

OPERATING FORCE

OPTION CODE	OPERATING FORCE
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



First Angle
Projection

Dimensions are shown: mm

Specifications and dimensions subject to change

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL
1	Silver contacts
3	Gold contacts

SEALING



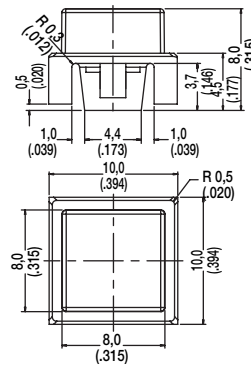
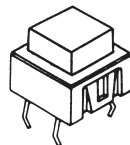
OPTION CODE	SEALING
1	Sealing level IP60

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

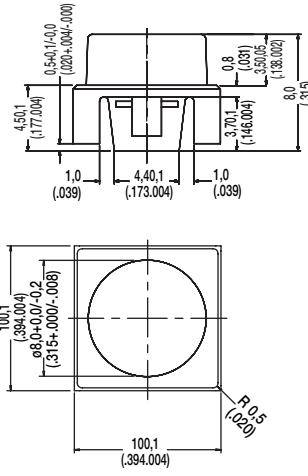
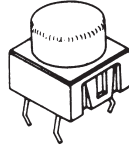
K01



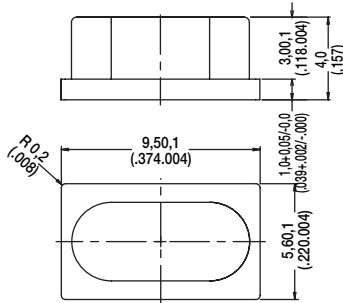
Dimensions are shown: mm
Specifications and dimensions subject to change

KSA & KSL Series Sealed Tact Switch

K02



K03



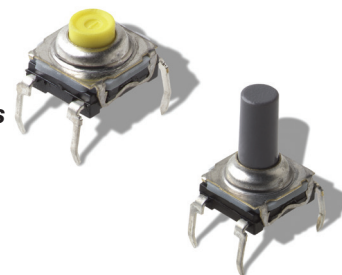
KSA & KSL MKII Series High Performance Sealed Tact Switch

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



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

Environmental

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

Process

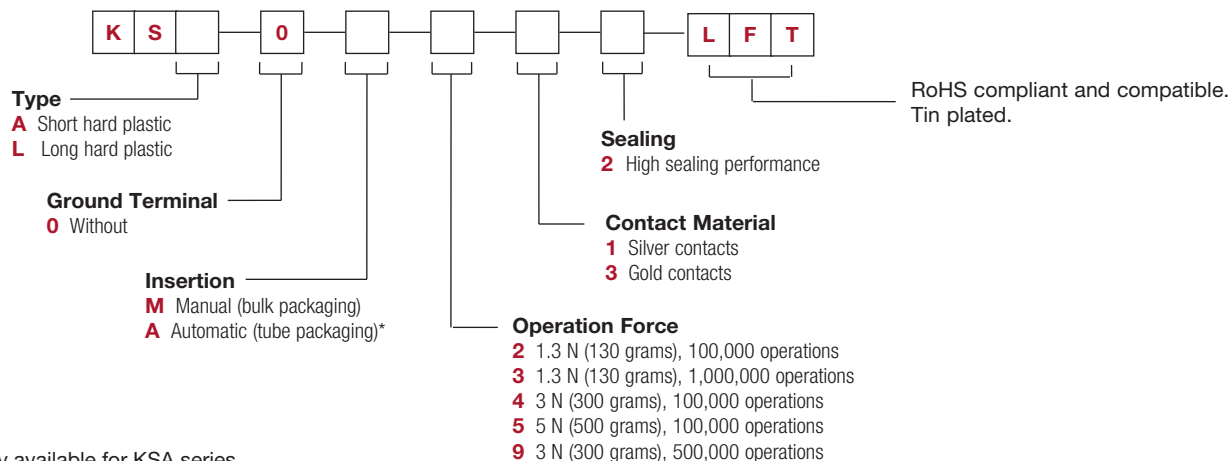
Wave soldering compatible with lead free soldering profile.

How To Order

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

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

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



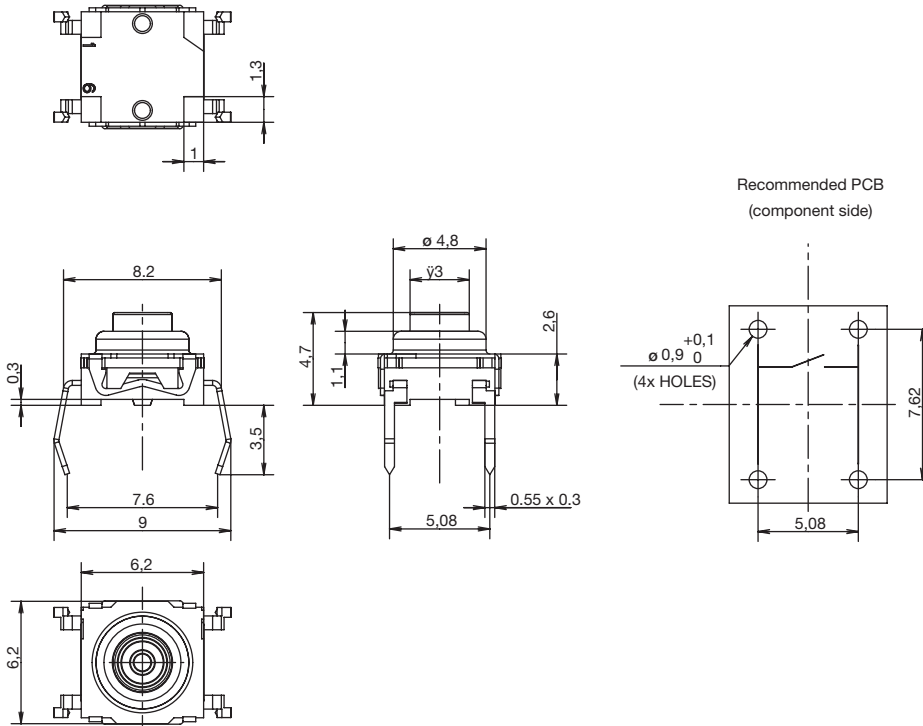
* only available for KSA series

KSA & KSL MKII Series High Performance Sealed Tact Switch

TYPE 

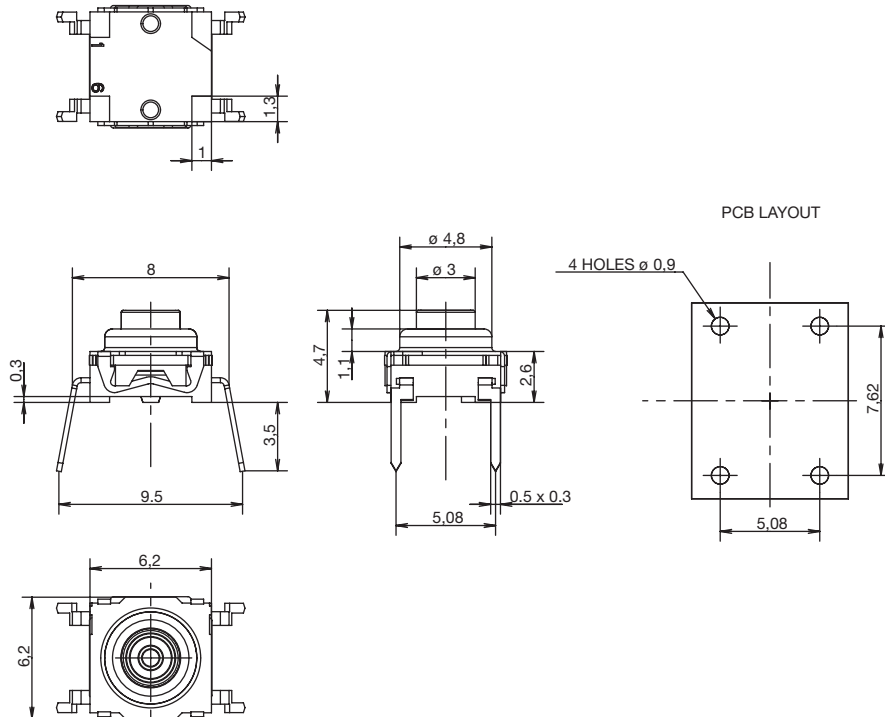
KSA & KSL

MANUAL INSERTION



KSA & KSL

AUTOMATIC INSERTION

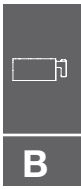


Dimensions are shown: mm
Specifications and dimensions subject to change

C&K

30 Jan 19

KSJ Series Spherical Actuator Tact Switches



Tactile Switches
B

Features/Benefits

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

Typical Applications

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



Specification

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

Environmental

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

Packaging

Delivered in boxes of 250 pieces.

Mechanical

Type	Actuation force 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.

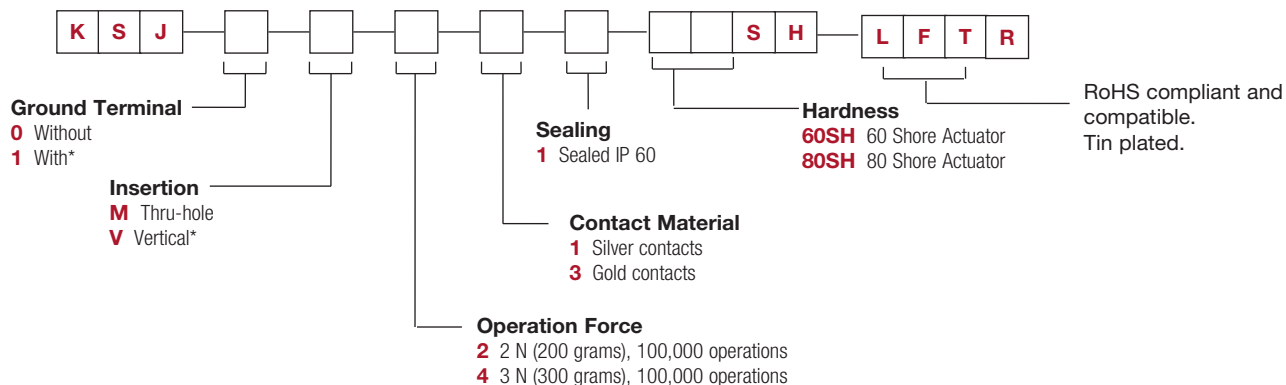
* Please contact your C&K representative for any question regarding the product integration.

How To Order

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

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

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

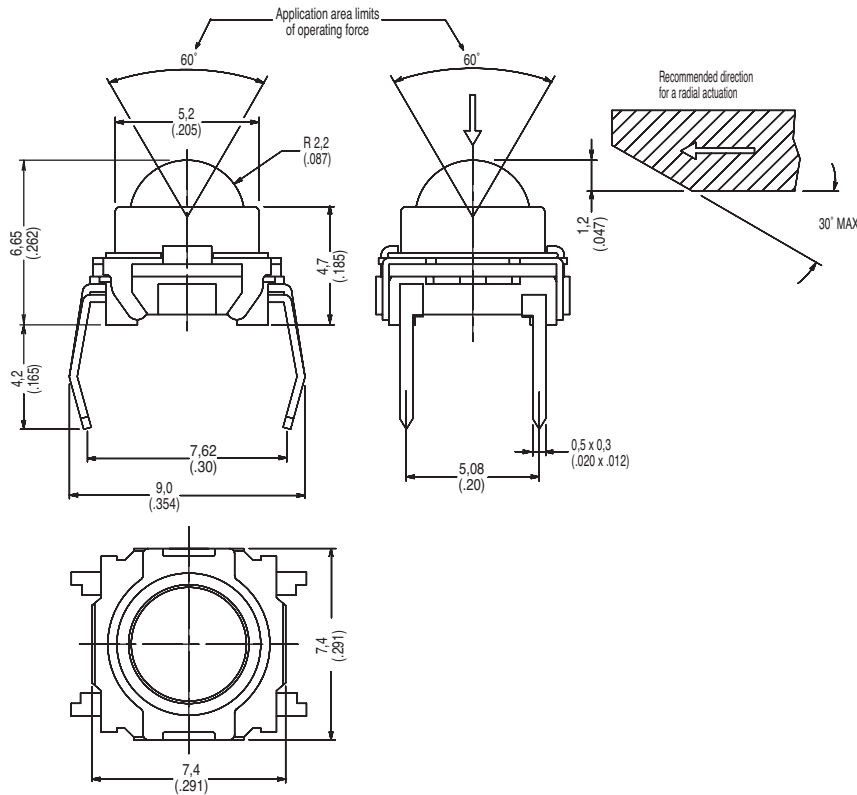


*Note: "1" ground terminal option not available with "V" version. The bracket for the "V" version plays this role.



KSJ Series Spherical Actuator Tact Switches

KSJ



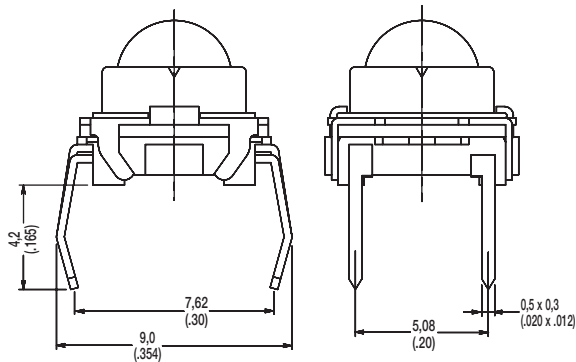
KSJ0M211

Tactile Switches

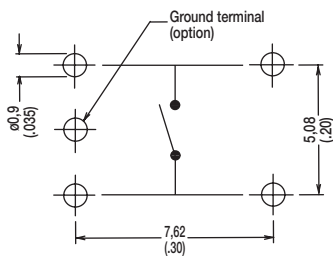
B

INSERTION

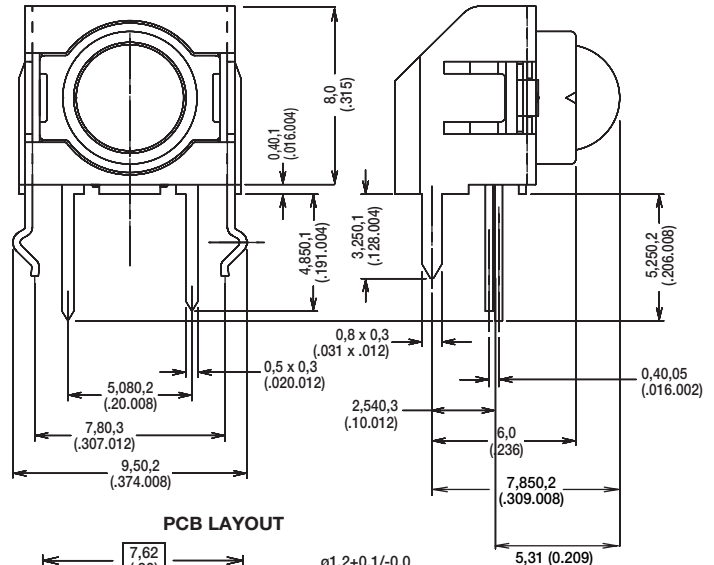
M THRU-HOLE



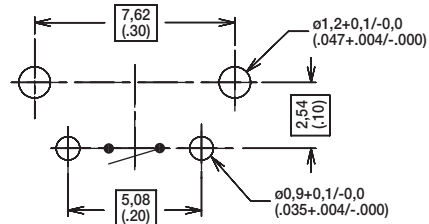
PCB LAYOUT



V VERTICAL



PCB LAYOUT



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



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: 10¹¹Ω 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: Tin plated stainless steel
DOME CONTACTS: Phosphor bronze, silver clad.
STATIONARY CONTACTS: Brass, silver plated.
TERMINALS: Brass, silver plated. Insert molded.

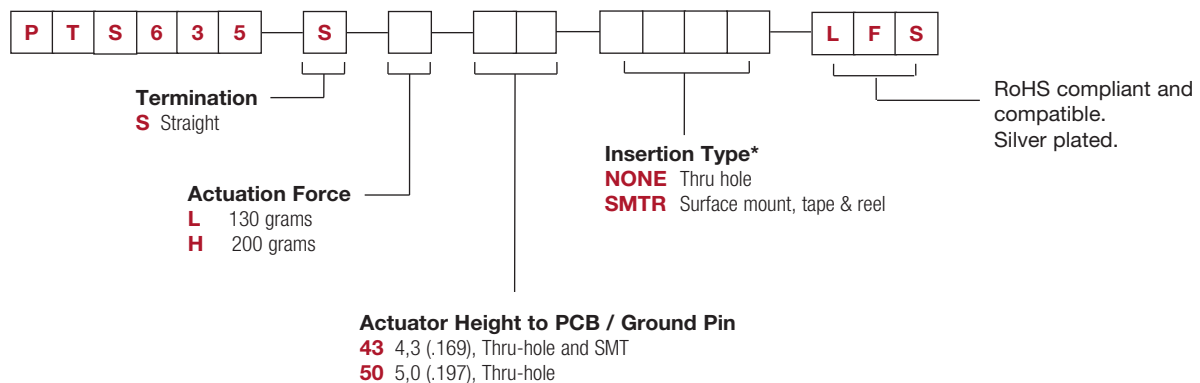
Packaging

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.

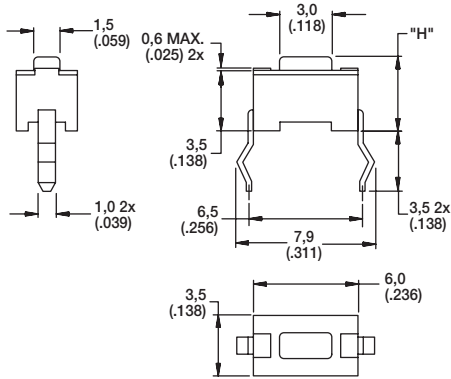


* SMTR only available with PTS635 43 Actuator Height options.

PTS635 Series 3,5 mm Tact Switches

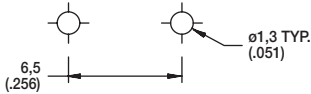
Tactile Switches

THRU-HOLE

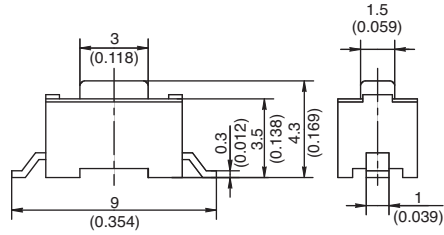


For "H" dimension please refer to chart on next page

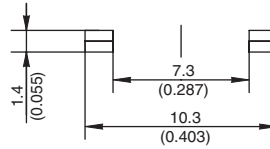
PCB LAYOUT



SMT



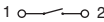
PCB LAYOUT



ACTUATION FORCE

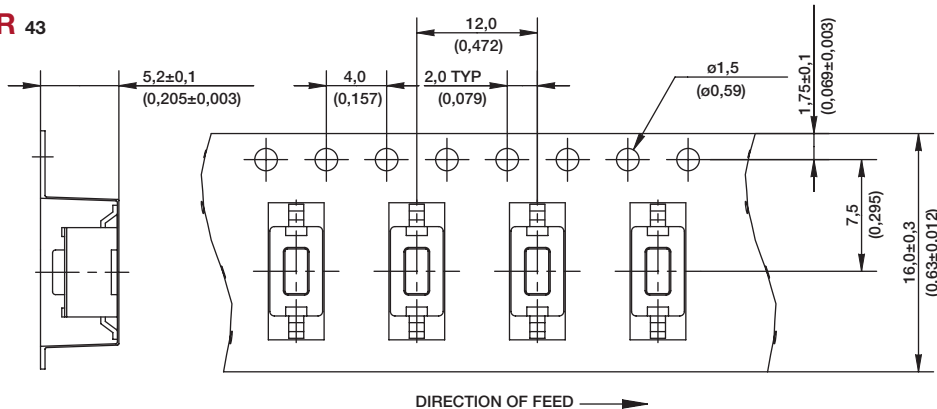
OPTION CODE	FORCE
L	130 grams
H	200 grams

ACTUATOR HEIGHT

OPTION CODE	HEIGHT "H" or LENGTH "L"	TERMINATION	SCHEMATIC
43	4,3 (.169)	Thru-hole & SMT	1  2
50	5,0 (.197)	Thru-hole	

INSERTION TYPE

SMTR 43



NEW

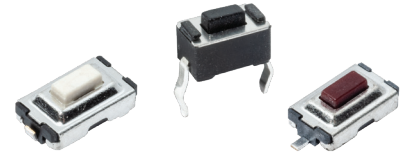
PTS636 Series 6,0 x 3,5 Top Actuated

Features/Benefits

- 6,0 x 3,5 mm footprint
- Multiple heights
- THT or SMT type

Typical Applications

- IoT devices
- Home automation
- Remote controls



Specification

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -20°C to 70°C

Process

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

Packaging

In bags of 1,000 pcs for THT
In reels of 3,000 pieces for 2.5 mm height
In reels of 1.500 pieces for 4.3 and 5.0 mm height
Dimensions of reels according to EIA 481B
External diameter 330 mm

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

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

Available part numbers and characteristics

Description	Height (mm)	Lead Shape	Ground Pin	Force	Travel (mm)	Operating Life	Actuator Color
PTS636 SL43 LFS	4.3	THT	No	130gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SM43 LFS	4.3	THT	No	180gf ± 50gf	0.30 ± 0.1	50,000	Black
PTS636 SK43 LFS	4.3	THT	No	250gf ± 50gf	0.30 ± 0.1	30,000	Black
PTS636 SP43 LFS	4.3	THT	No	320gf ± 50gf	0.30 ± 0.1	20,000	Black
PTS636 SL50 LFS	5.0	THT	No	130gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SM50 LFS	5.0	THT	No	180gf ± 50gf	0.30 ± 0.1	50,000	Black
PTS636 SK50 LFS	5.0	THT	No	250gf ± 50gf	0.30 ± 0.1	30,000	Black
PTS636 SP50 LFS	5.0	THT	No	320gf ± 50gf	0.30 ± 0.1	20,000	Black
PTS636 SL43 SMTR LFS	4.3	G	No	130gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SM43 SMTR LFS	4.3	G	No	180gf ± 50gf	0.30 ± 0.1	50,000	Black
PTS636 SK43 SMTR LFS	4.3	G	No	250gf ± 50gf	0.30 ± 0.1	30,000	Black
PTS636 SP43 SMTR LFS	4.3	G	No	320gf ± 50gf	0.30 ± 0.1	20,000	Black
PTS636 SL50 SMTR LFS	5.0	G	No	130gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SM50 SMTR LFS	5.0	G	No	180gf ± 50gf	0.30 ± 0.1	50,000	Black
PTS636 SK50 SMTR LFS	5.0	G	No	250gf ± 50gf	0.30 ± 0.1	30,000	Black
PTS636 SP50 SMTR LFS	5.0	G	No	320gf ± 50gf	0.30 ± 0.1	20,000	Black
PTS636 SM43J SMTR LFS	4.3	J	No	180gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SK43J SMTR LFS	4.3	J	No	250gf ± 50gf	0.25 ± 0.1	30,000	Red
PTS636 SM50J SMTR LFS	5.0	J	No	180gf ± 50gf	0.25 ± 0.1	50,000	Black
PTS636 SK50J SMTR LFS	5.0	J	No	250gf ± 50gf	0.25 ± 0.1	30,000	Red
PTS636 SM25 SMTR LFS	2.5	G	No	180gf ± 30gf	0.25 ± 0.1	70,000	White
PTS636 SK25 SMTR LFS	2.5	G	No	250gf ± 50gf	0.25 ± 0.1	100,000	Red
PTS636 SMG25 SMTR LFS	2.5	G	Yes	180gf ± 30gf	0.25 ± 0.1	70,000	White
PTS636 SKG25 SMTR LFS	2.5	G	Yes	250gf ± 50gf	0.25 ± 0.1	100,000	Red
PTS636 SM25J SMTR LFS	2.5	J	No	180gf ± 30gf	0.25 ± 0.1	70,000	White
PTS636 SK25J SMTR LFS	2.5	J	No	250gf ± 50gf	0.25 ± 0.1	100,000	Red
PTS636 SMG25J SMTR LFS	2.5	J	Yes	180gf ± 30gf	0.25 ± 0.1	70,000	White
PTS636 SKG25J SMTR LFS	2.5	J	Yes	250gf ± 50gf	0.25 ± 0.1	100,000	Red
PTS636 SM25F SMTR LFS	2.5	Flat	No	180gf ± 30gf	0.25 ± 0.1	70,000	White
PTS636 SK25F SMTR LFS	2.5	Flat	No	250gf ± 50gf	0.25 ± 0.1	100,000	Red

Dimensions are shown: mm

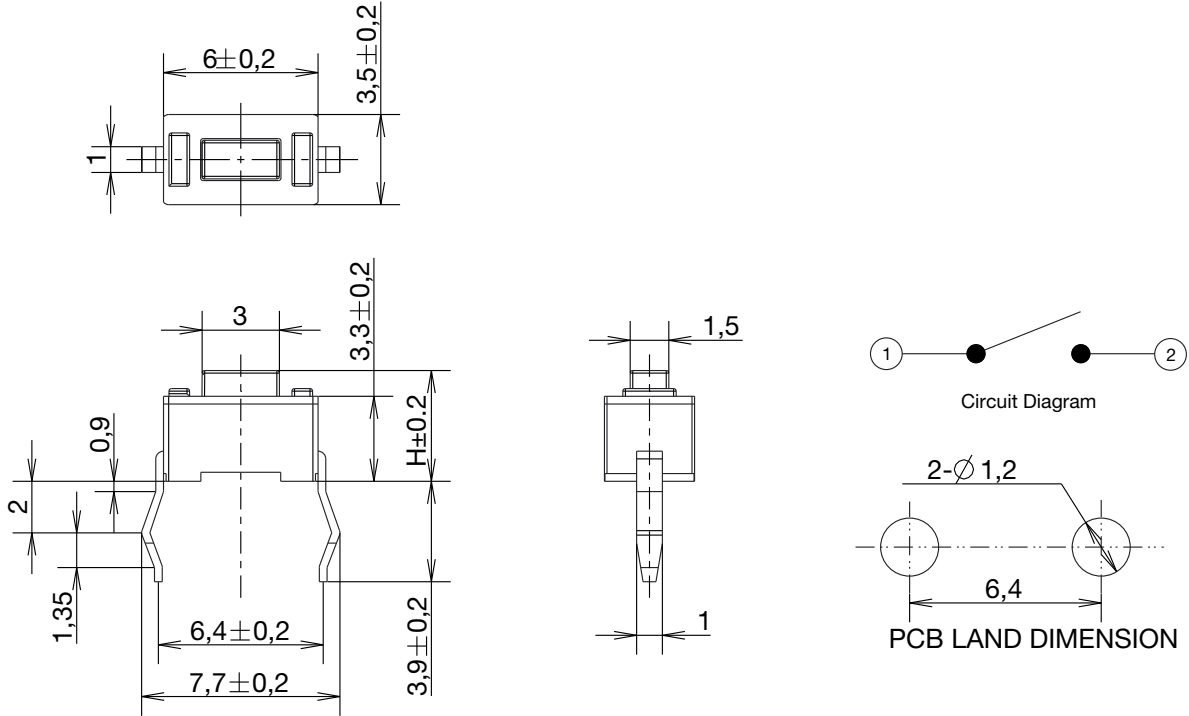
Specifications and dimensions subject to change

PTS636 Series 6,0 x 3,5 Top Actuated

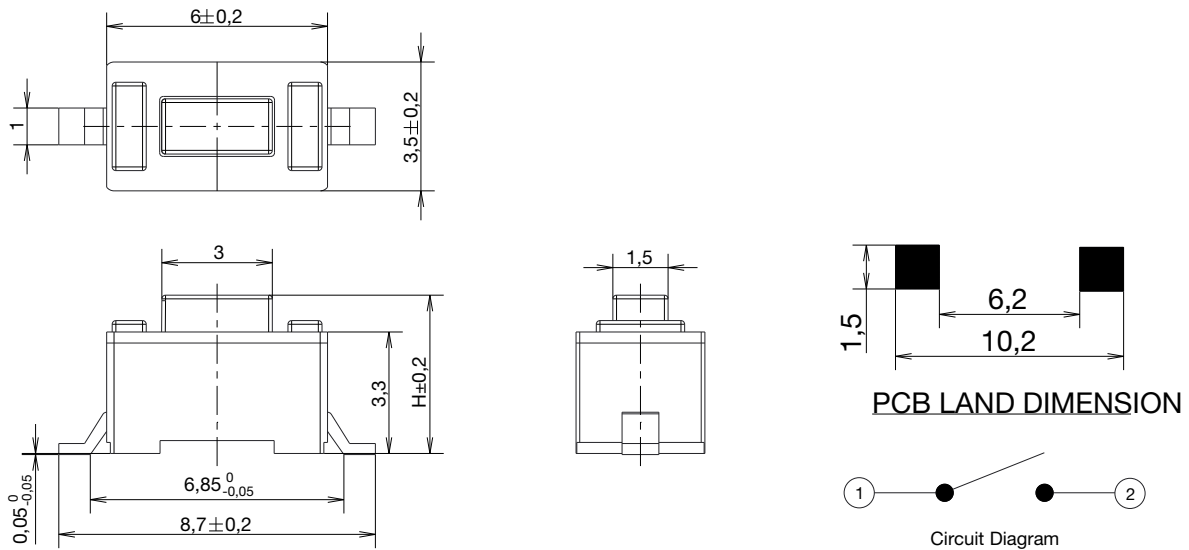
NEW

THT versions (4,3 & 5,0 mm height)

Tactile Switches



SMT G leads (4,3 & 5,0 mm height)

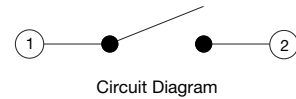
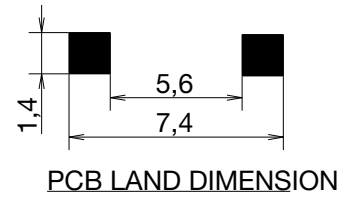
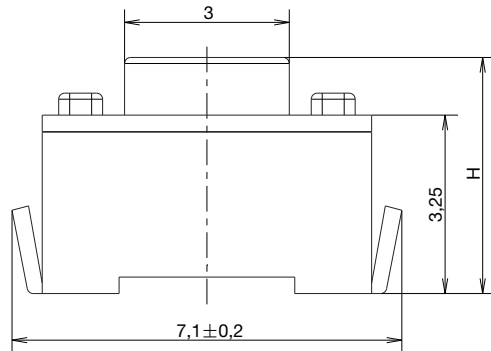
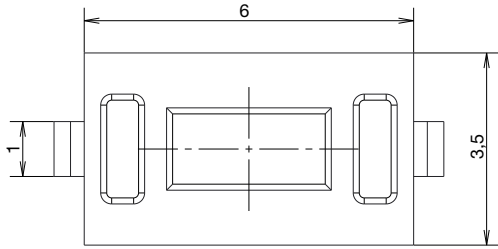


Dimensions are shown: mm
Specifications and dimensions subject to change

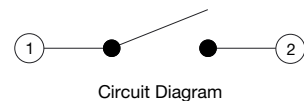
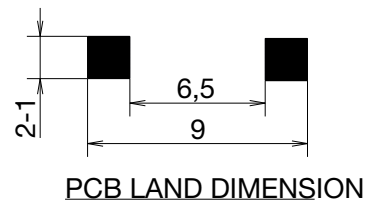
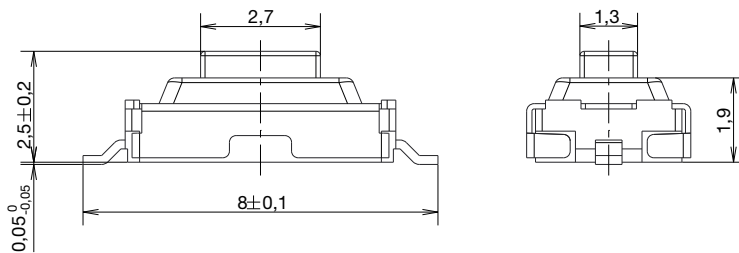
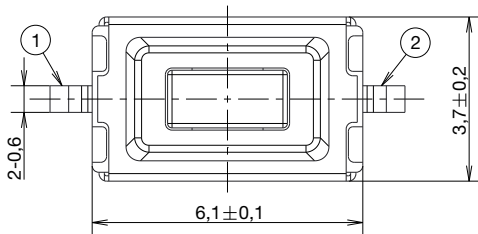
NEW

PTS636 Series 6,0 x 3,5 Top Actuated

SMT J leads (4,3 & 5,0 mm height)



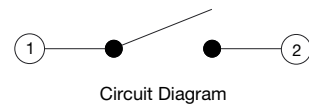
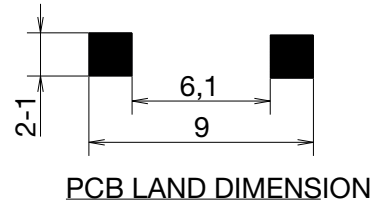
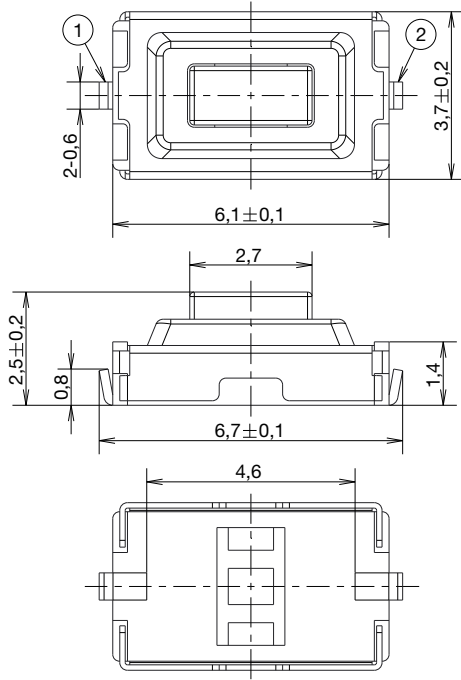
SMT G leads (2,5 mm height)



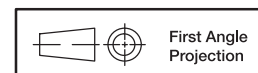
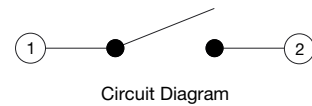
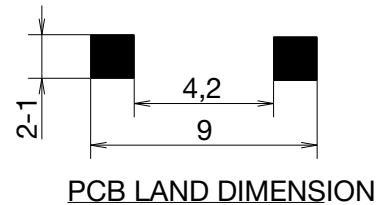
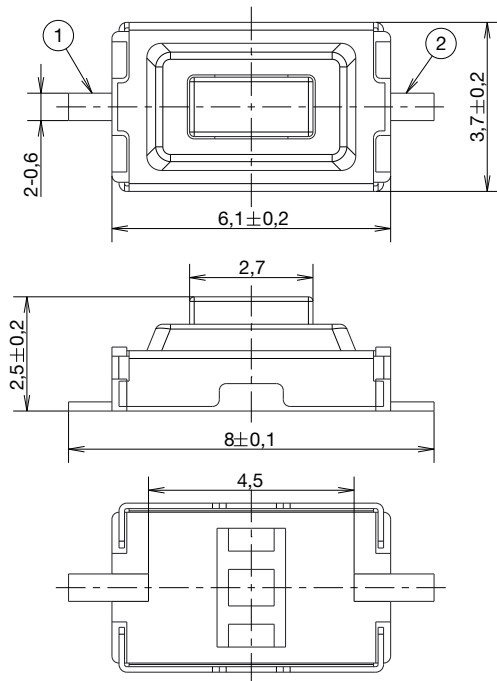
PTS636 Series 6,0 x 3,5 Top Actuated

NEW

SMT J leads (2,5 mm height)



SMT F leads (2,5 mm height)

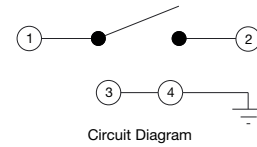
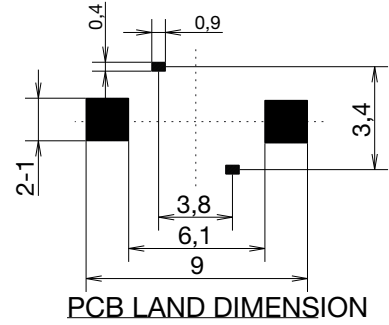
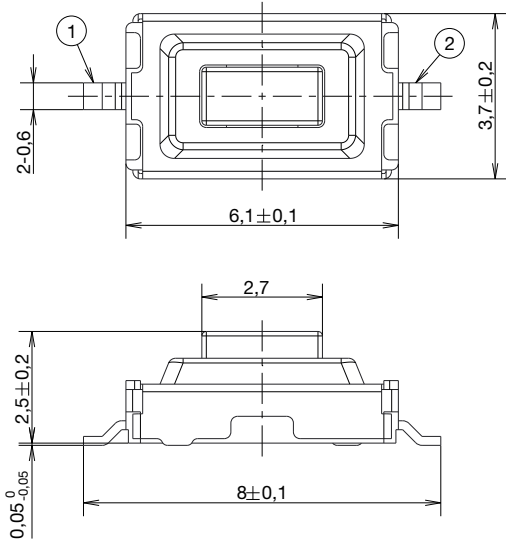


Dimensions are shown: mm
Specifications and dimensions subject to change

NEW

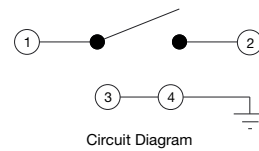
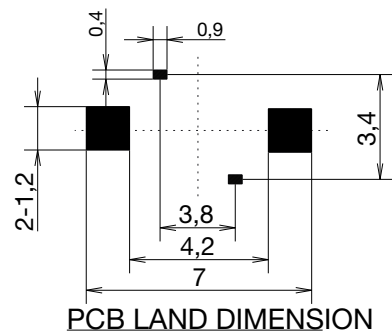
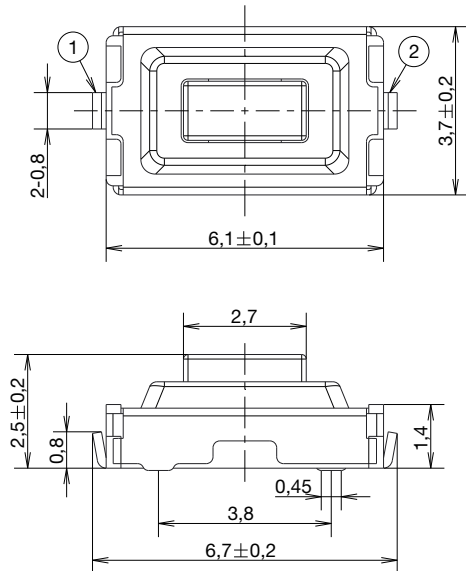
PTS636 Series 6,0 x 3,5 Top Actuated

SMT G leads, with ground pin (2,5 mm height)



Tactile Switches

SMT J leads, with ground pin (2,5 mm height)



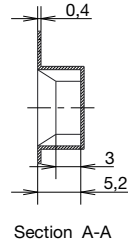
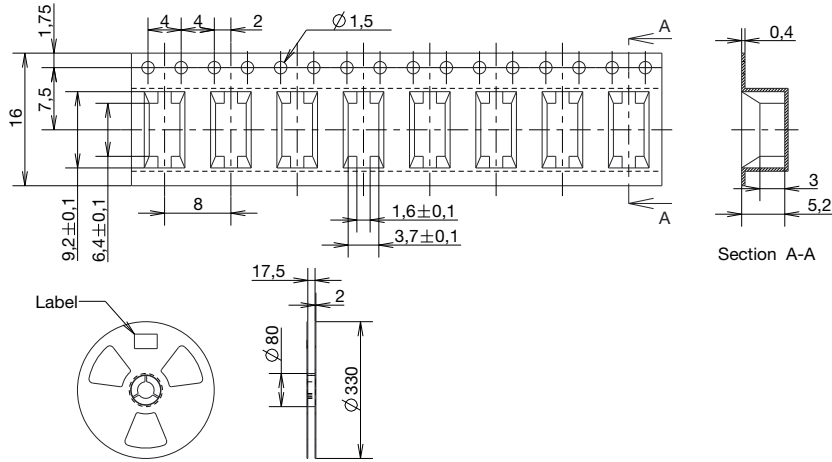
PTS636 Series 6,0 x 3,5 Top Actuated

NEW

PACKAGING

4,3 and 5,0 mm height - G leads

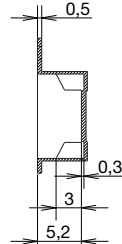
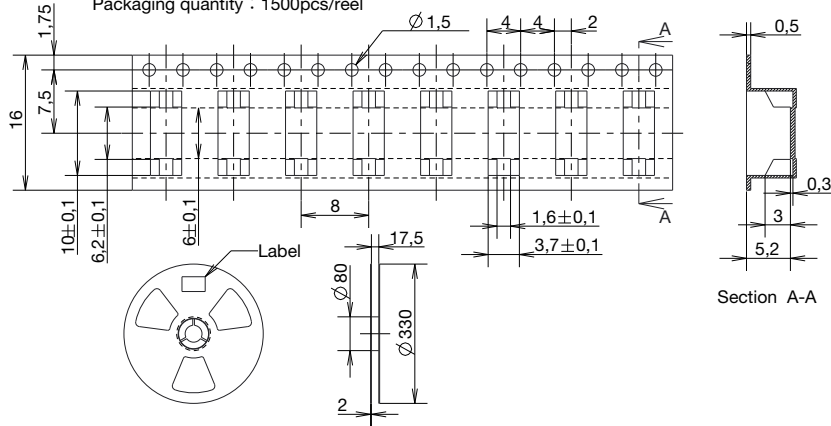
THE DIMENSION OF CARRIER TAPE AND REEL
Packaging quantity : 1500pcs/reel



Section A-A

4,3 and 5,0 mm height - J leads

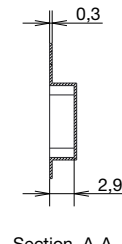
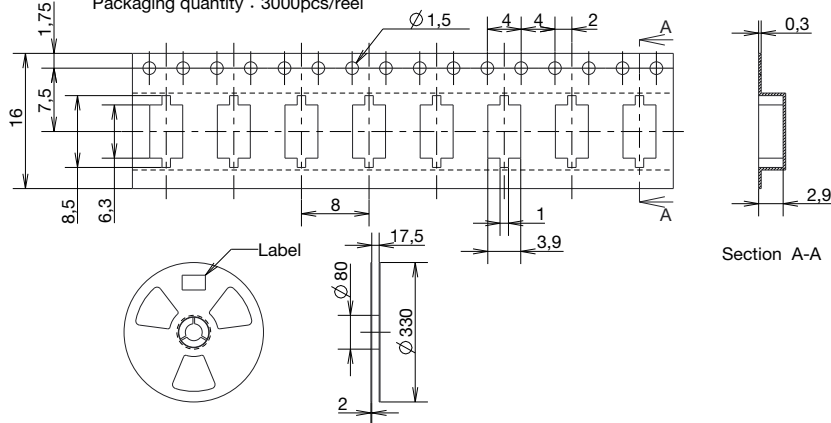
THE DIMENSION OF CARRIER TAPE AND REEL
Packaging quantity : 1500pcs/reel



Section A-A

2,5 mm height

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



Section A-A



First Angle
Projection

Dimensions are shown: mm
Specifications and dimensions subject to change

PTS641 Series SMT Top Actuated Switches

Tactile Switches

B



Features/Benefits

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

Typical Applications

- Metering
- White goods
- Home and garden equipment

Specification

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

Mechanical

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

Packaging

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

Electrical

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

Environmental

OPERATING TEMPERATURE: -20°C to 85°C

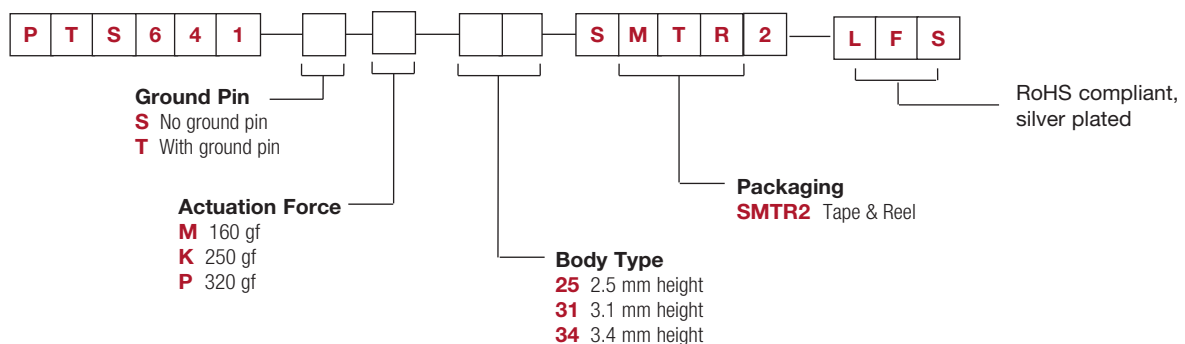
Process

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

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

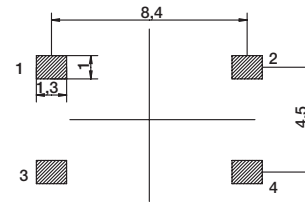
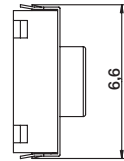
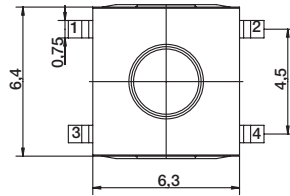
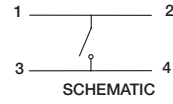
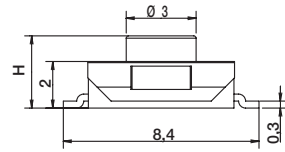
How To Order

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.



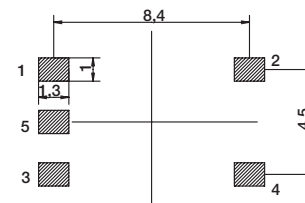
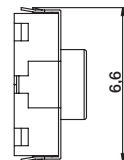
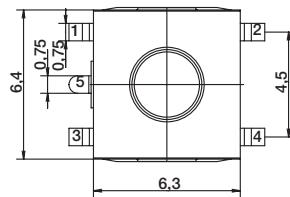
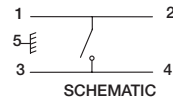
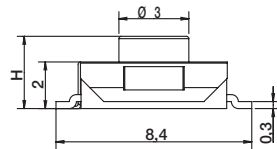
PTS641 Series SMT Top Actuated Switches

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



B

Tactile Switches

PTS645 Series 6 mm Tact Switches



Features/Benefits

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

Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial

Tactile Switches

B

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:
- Thru-hole and SMT with J actuator shape: -20°C to 70°C
- SMT (except for J actuator shape): -20°C to 85°C

Process

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

Packaging

Bulk packaging.

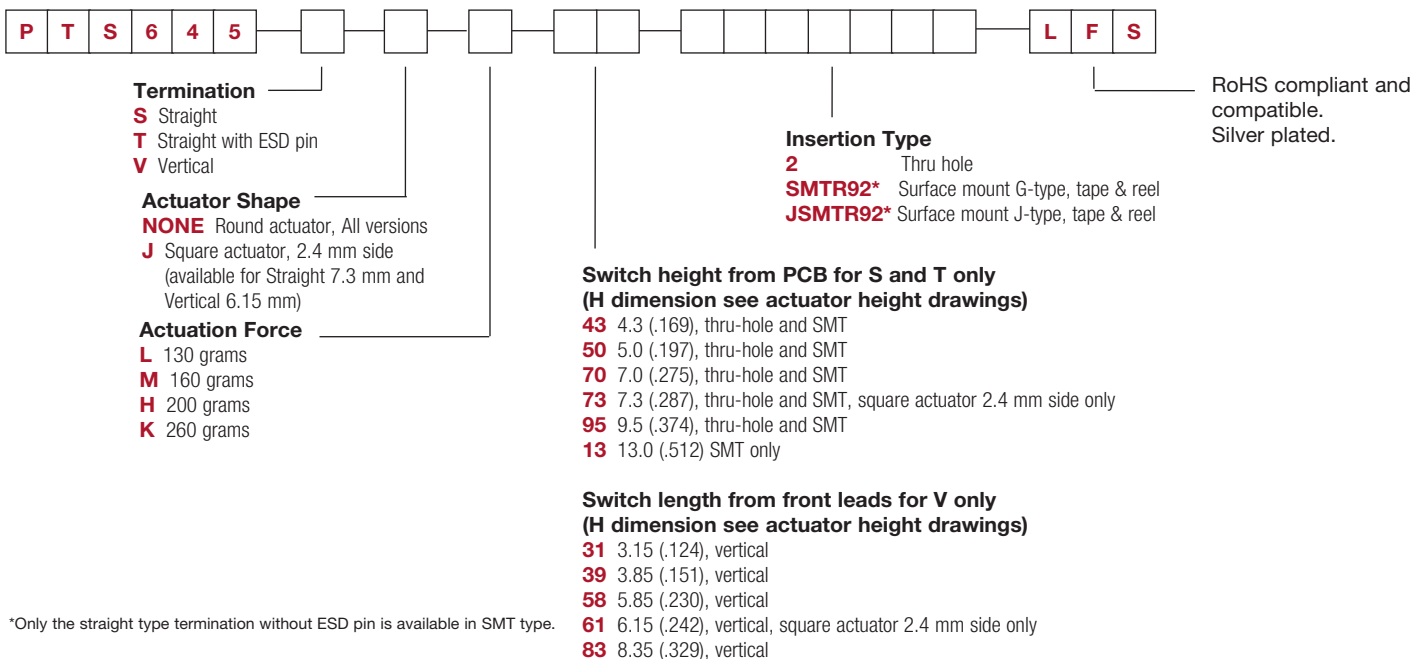
Tape & reel for the SMT type:

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

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

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.

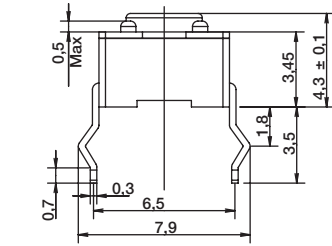


*Only the straight type termination without ESD pin is available in SMT type.

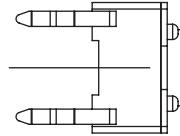
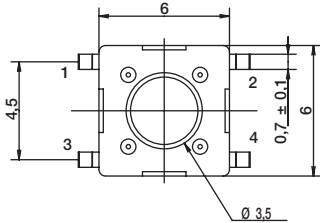
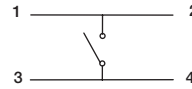


TERMINATION

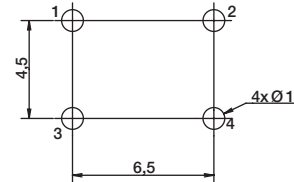
S STRAIGHT



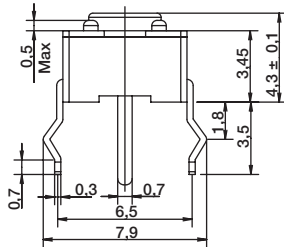
SCHEMATIC



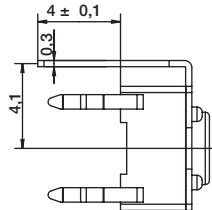
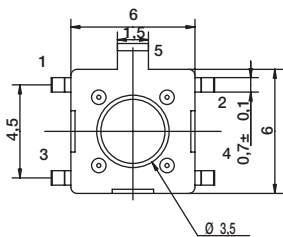
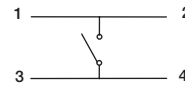
PCB LAYOUT



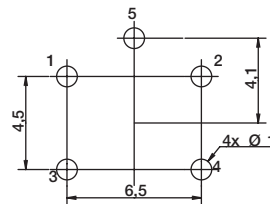
T STRAIGHT WITH ESD PIN



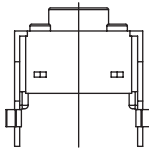
SCHEMATIC



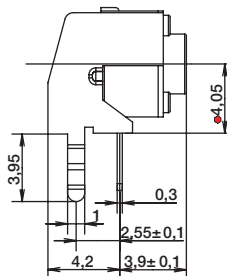
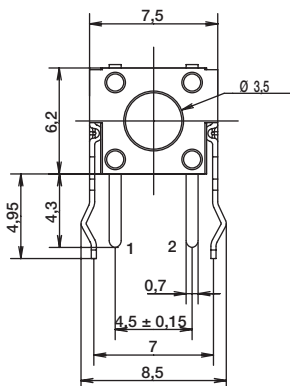
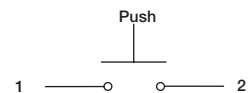
PCB LAYOUT



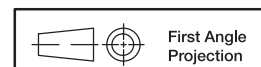
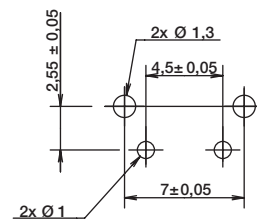
V VERTICAL



SCHEMATIC



PCB LAYOUT

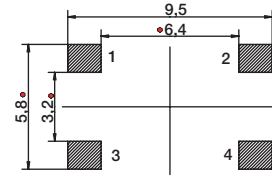
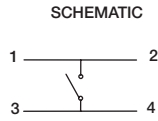
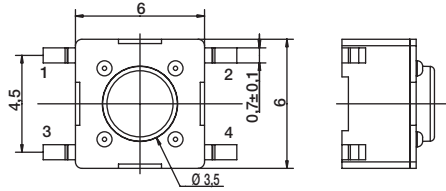
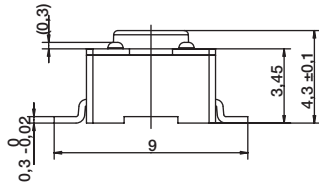


Dimensions are shown: mm
Specifications and dimensions subject to change

PTS645 Series 6 mm Tact Switches

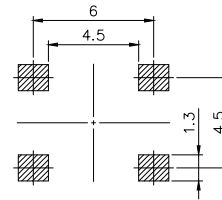
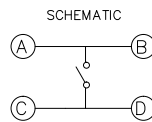
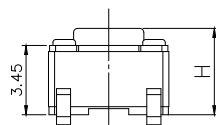
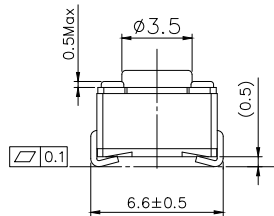
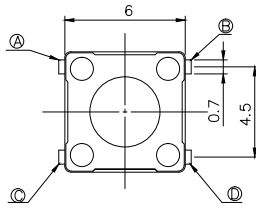
TERMINATION

SMT G Type



PCB LAYOUT

SMT J Type



PCB LAYOUT



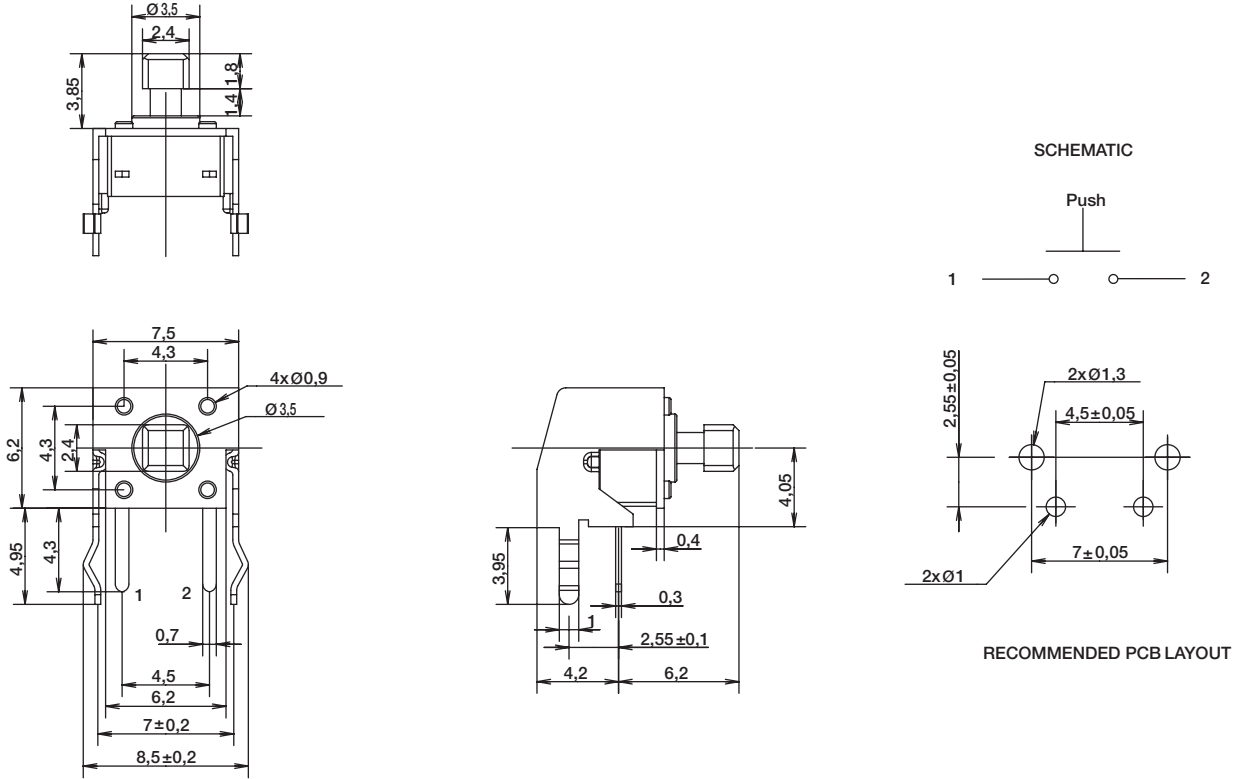
Dimensions are shown: mm
Specifications and dimensions subject to change



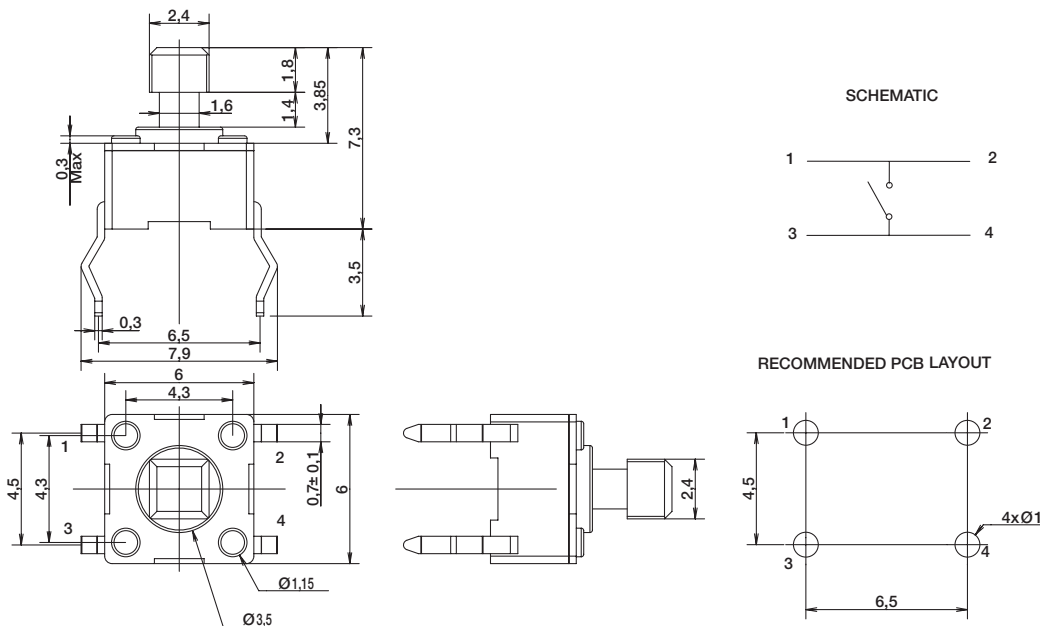
ACTUATOR SHAPE

J SQUARE ACTUATOR

VERTICAL THT - FOR 6.15MM LENGTH ONLY



VERTICAL THT - FOR 7.3MM HEIGHT ONLY

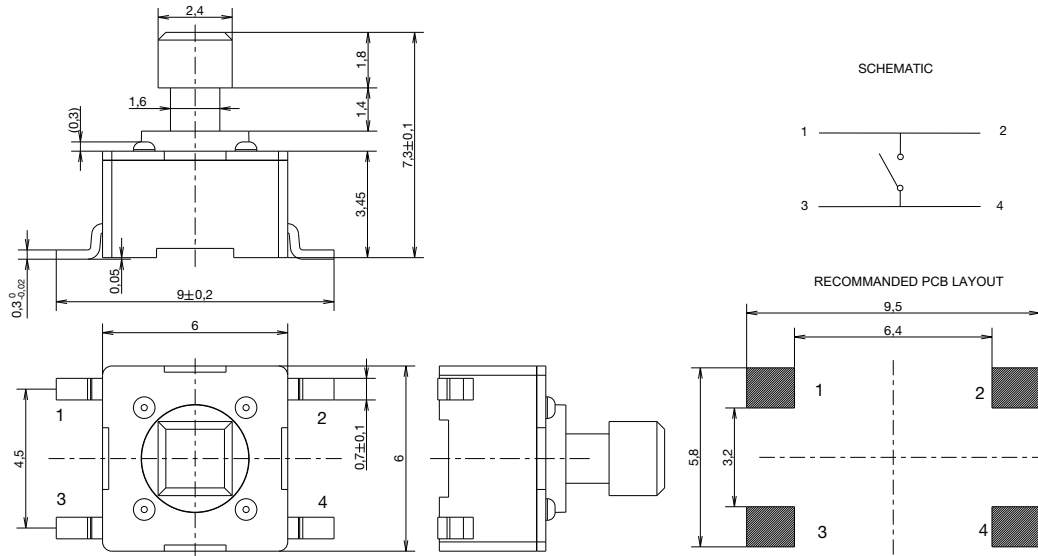


Dimensions are shown: mm
Specifications and dimensions subject to change

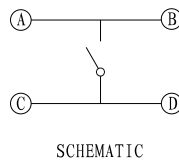
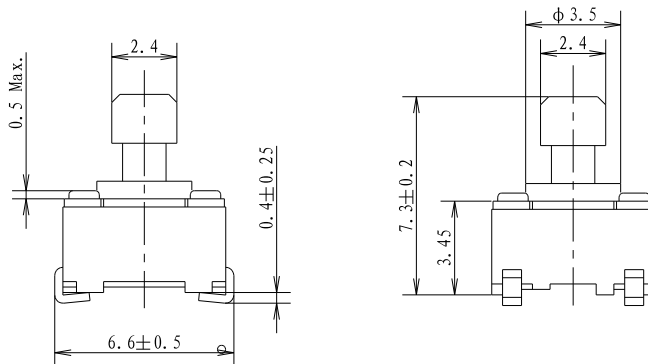
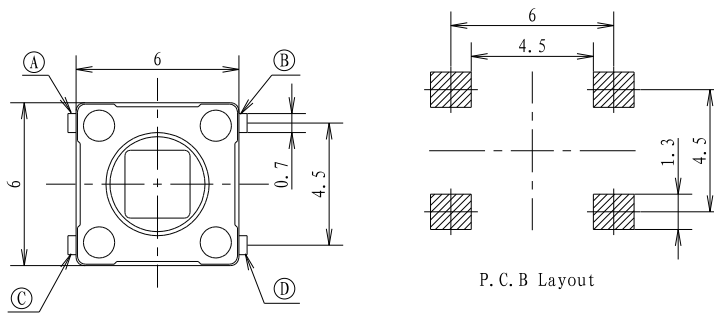
PTS645 Series 6 mm Tact Switches

ACTUATOR SHAPE

STRAIGHT SMT G TYPE - FOR 7.3MM HEIGHT ONLY



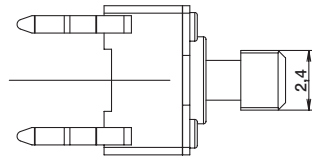
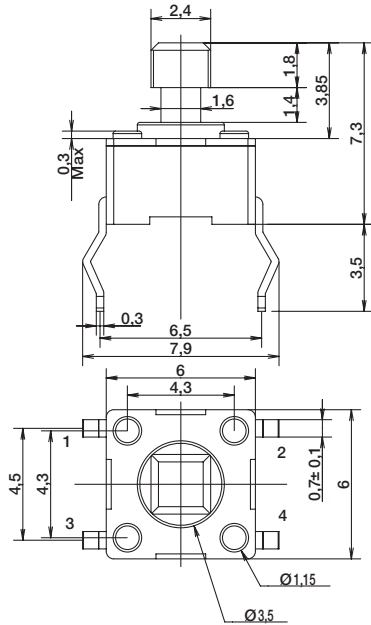
STRAIGHT SMT J TYPE - FOR 7.3MM HEIGHT ONLY



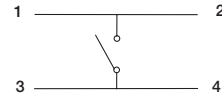
Dimensions are shown: mm
Specifications and dimensions subject to change

ACTUATOR SHAPE

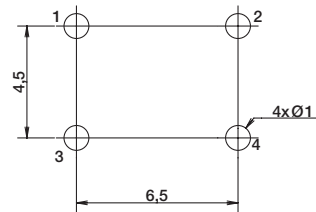
VERTICAL THT - FOR 7.3MM HEIGHT ONLY



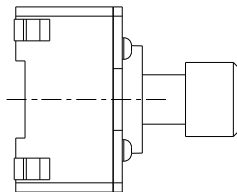
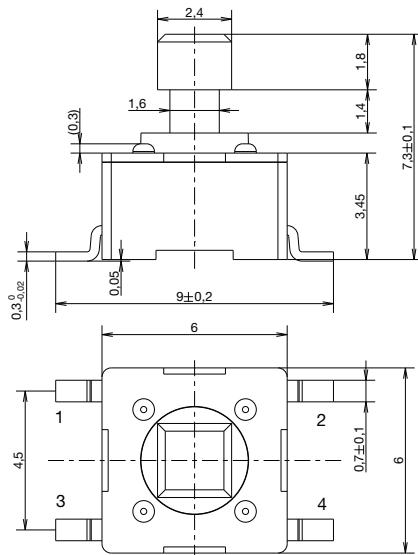
SCHEMATIC



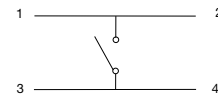
RECOMMENDED PCB LAYOUT



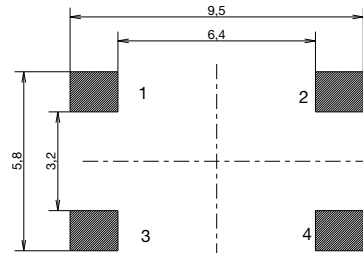
STRAIGHT SMT - FOR 7.3MM HEIGHT ONLY



SCHEMATIC



RECOMMENDED PCB LAYOUT



Dimensions are shown: mm
Specifications and dimensions subject to change

PTS645 Series 6 mm Tact Switches

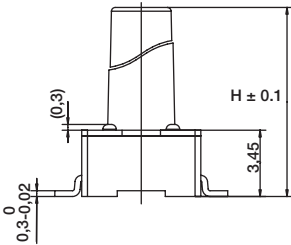
ACTUATION FORCE

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

Tactile Switches

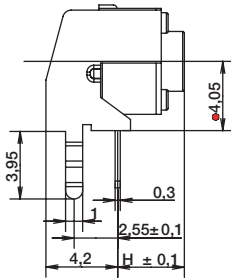
ACTUATOR HEIGHT

Switch height from PCB for S and T only



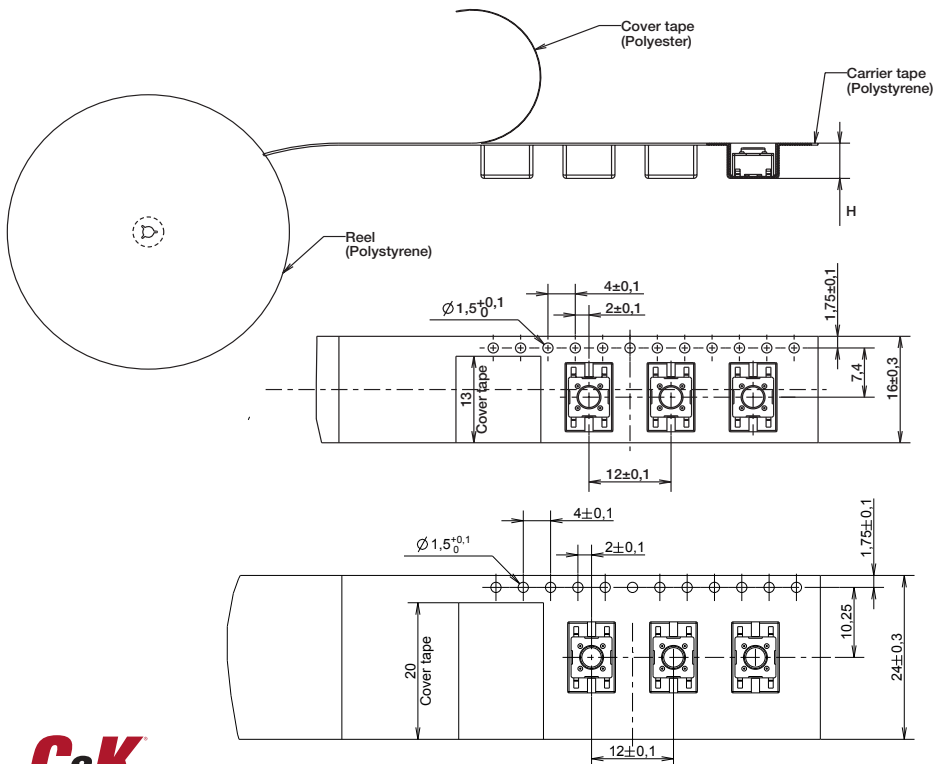
OPTION CODE	DIMENSION H	TERMINATION	SCHEMATIC	
			Without EMC pin	With EMC pin
43	4,3 (.169)	Thru-hole and SMT		
50	5,0 (.197)	Thru-hole and SMT		
70	7,0 (.275)	Thru-hole and SMT		
95	9,5 (.374)	Thru-hole and SMT		
13	13,0 (.512)	SMT		

Switch length from front leads for V only



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

TAPE & REEL FOR SMT G TYPE VERSIONS



OPTION CODE	WIDTH TAPE	POCKET HEIGHT
43	16 ± 0.3	5.3
50	16 ± 0.3	5.3
70	16 ± 0.3	7.3
73	16 ± 0.3	7.6
95	24 ± 0.3	10.3
13	24 ± 0.3	13.3

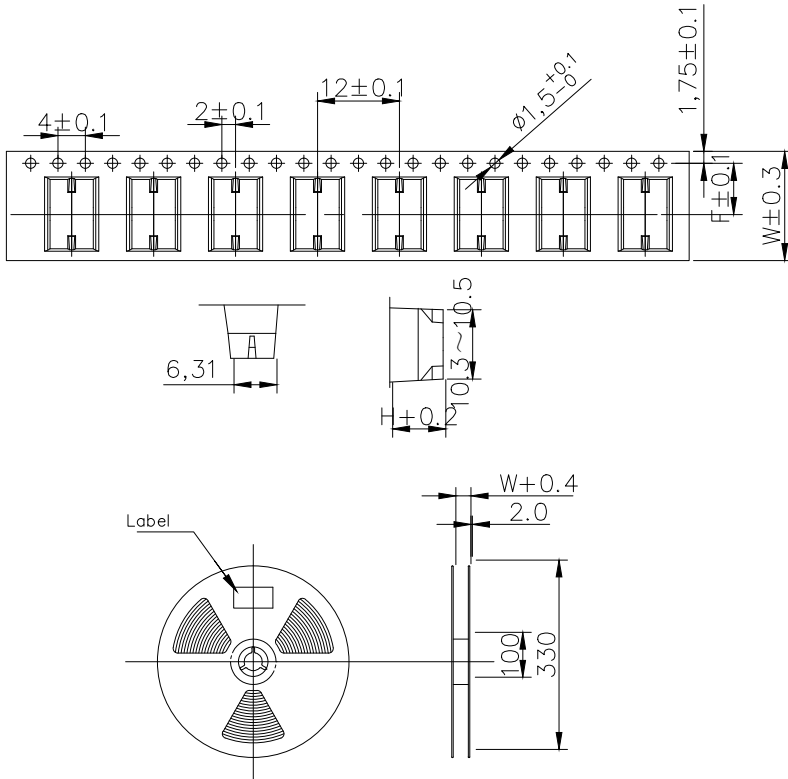


Dimensions are shown: mm
Specifications and dimensions subject to change



14 Apr 20

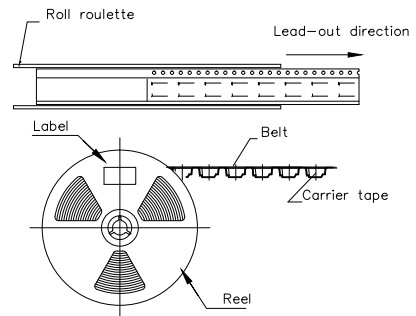
TAPE & REEL FOR SMT J TYPE VERSIONS



Tape specifications

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

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



Tactile Switches

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



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

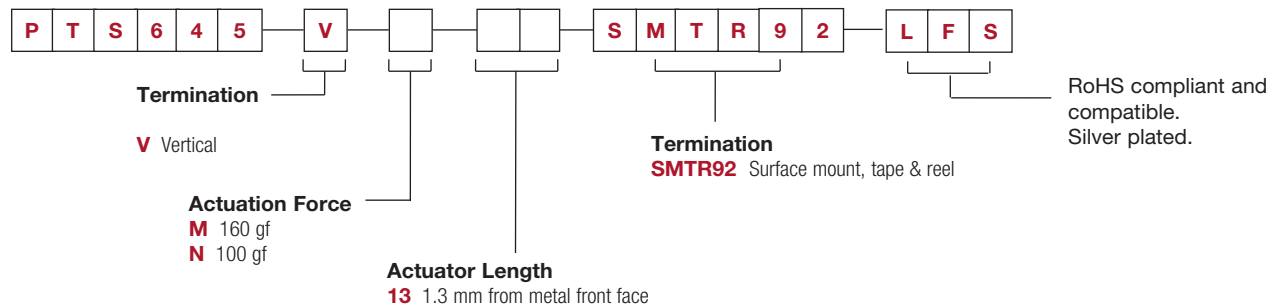
Packaging

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

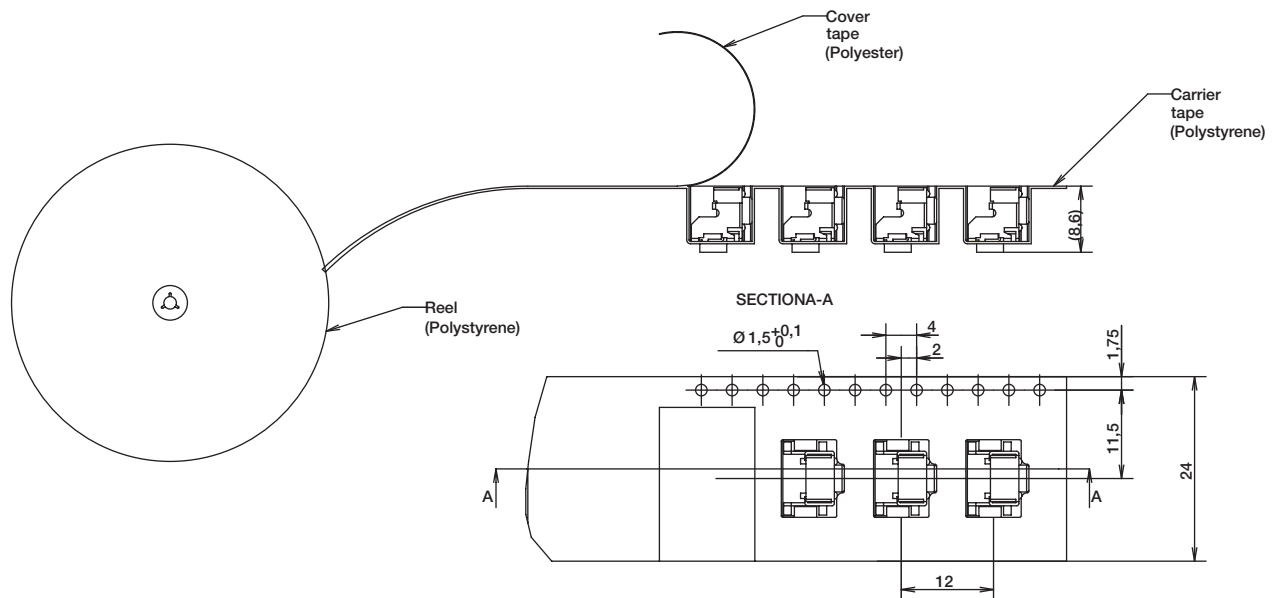
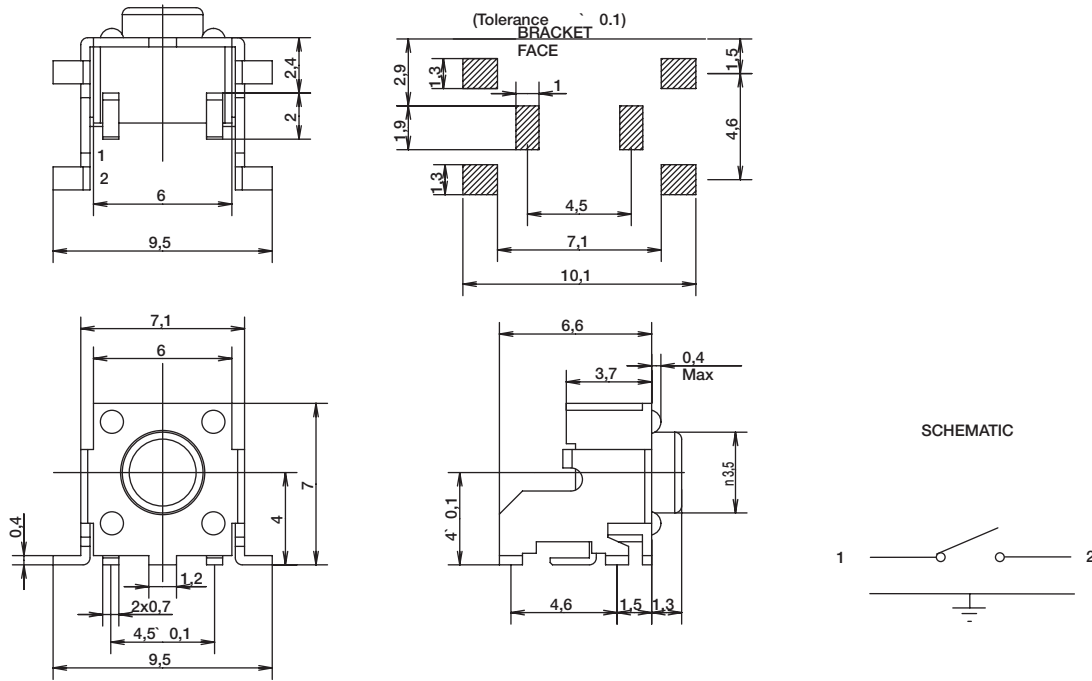
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



PTS645 V SMT Series

6 mm SMT Side Actuated Tact Switch

RECOMMENDED PCB LAYOUT



NEW

PTS647 Series 4.5 mm Tact Switch

Features/Benefits

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

Typical Applications

- Consumer
- Industrial control panels
- Computer products



Tactile Switches

Part Number	Operating Force (gf)	Life	Height (H)
PTS 647 SN38 SMTR2 LFS	100 +/- 50	100,000	3.8 mm
PTS 647 SM38 SMTR2 LFS	180 +/- 50	100,000	3.8 mm
PTS 647 SK38 SMTR2 LFS	250 +/- 50	100,000	3.8 mm
PTS 647 SN50 SMTR2 LFS	100 +/- 50	100,000	5.0 mm
PTS 647 SM50 SMTR2 LFS	180 +/- 50	100,000	5.0 mm
PTS 647 SK50 SMTR2 LFS	250 +/- 50	100,000	5.0 mm
PTS 647 SN70 SMTR2 LFS	100 +/- 50	100,000	7.0 mm
PTS 647 SM70 SMTR2 LFS	180 +/- 50	100,000	7.0 mm
PTS 647 SK70 SMTR2 LFS	250 +/- 50	100,000	7.0 mm

Mechanical

TRAVEL: 0.25 mm +/- 0.15 mm

Electrical

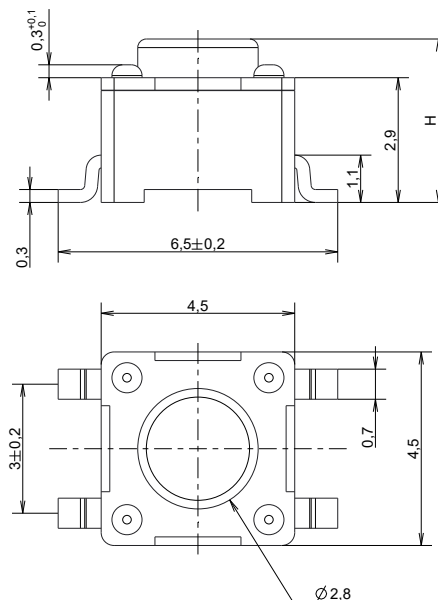
CONTACT RATING: 50 mA @ 12 V DC.
 DIELECTRIC STRENGTH: 250 V AC min.
 CONTACT RESISTANCE: 100 mΩ max. initial.
 INSULATION RESISTANCE: 100 MΩ min.

Environmental

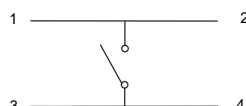
OPERATING TEMPERATURE: -20°C to 70°C

Packaging

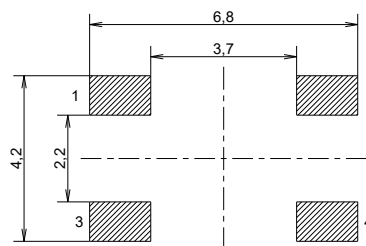
In reels of 1,000 pieces for 7.0 mm height
 In reels of 1,500 pieces for 5.0 mm height
 In reels of 2,000 pieces for 3.8 mm height
 Dimensions of reels according to EIA RS481 or IEC 2863.
 External diameter 330 mm ± 2 mm.



SCHEMATIC



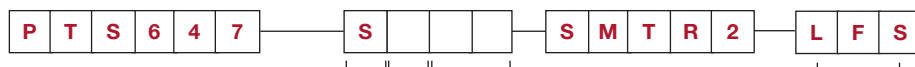
RECOMMENDED PCB LAYOUT



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.



Termination
S Straight

Actuation Force
N 100 grams
M 180 grams
K 250 grams

Total Height
38 3.8 mm
50 5.0 mm
70 7.0 mm

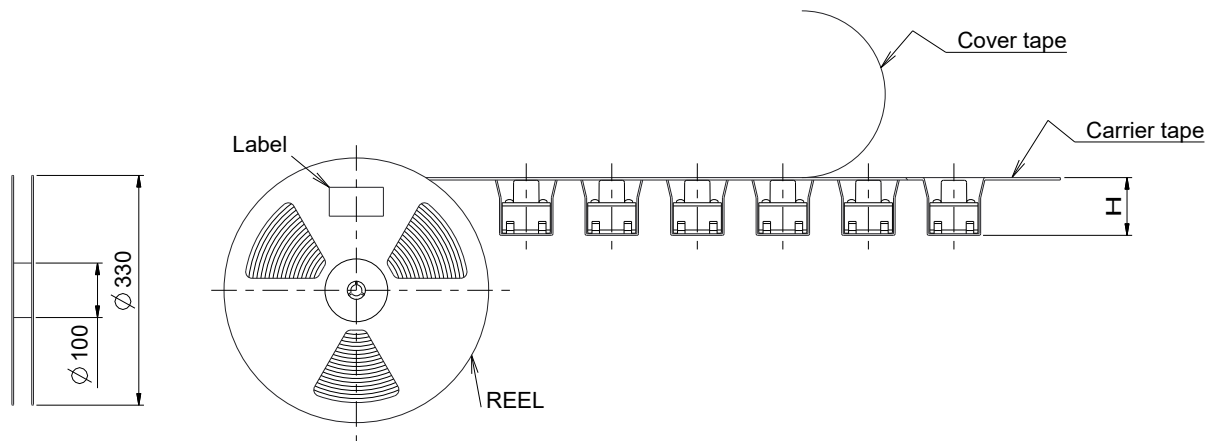
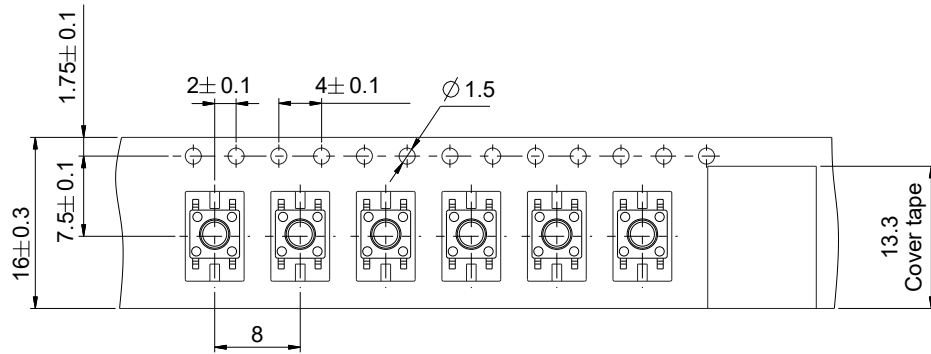
LFS Lead free compatible, silver plated



PTS647 Series 4.5 mm Tact Switch

NEW

TAPE & REEL



Part Number	Pocket Height (H)
PTS 647 SN38 SMTR2 LFS	4.2 mm
PTS 647 SM38 SMTR2 LFS	4.2 mm
PTS 647 SK38 SMTR2 LFS	4.2 mm
PTS 647 SN50 SMTR2 LFS	5.4 mm
PTS 647 SM50 SMTR2 LFS	5.4 mm
PTS 647 SK50 SMTR2 LFS	5.4 mm
PTS 647 SN70 SMTR2 LFS	7.2 mm
PTS 647 SM70 SMTR2 LFS	7.2 mm
PTS 647 SK70 SMTR2 LFS	7.2 mm

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

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

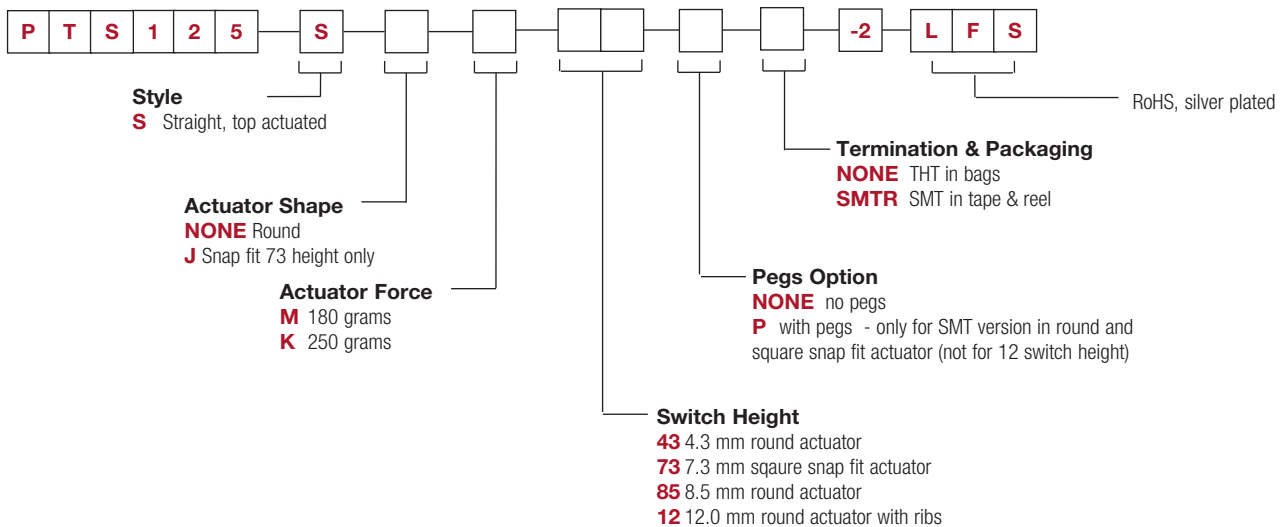
Packaging

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

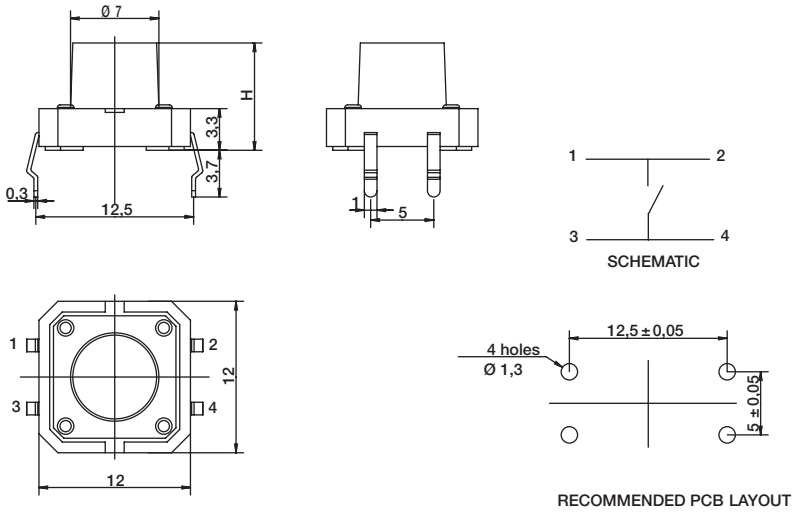
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



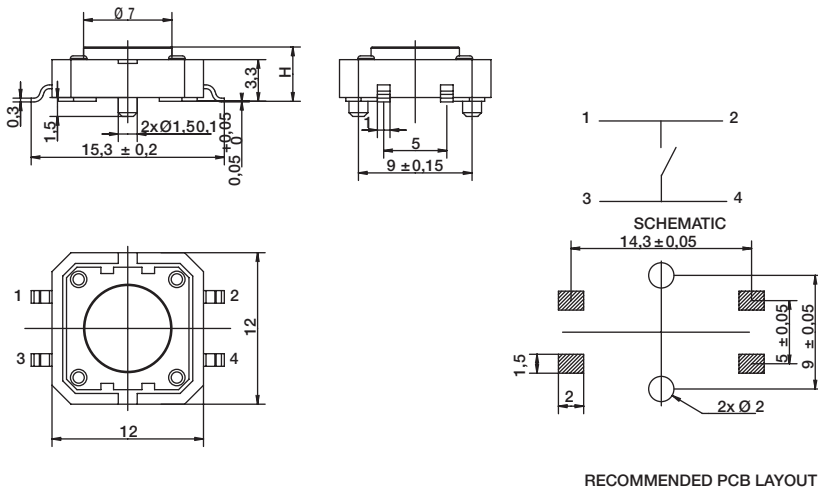
Other heights with the round actuator are available upon request. Different minimum order quantities than the stand may apply.

PTS125 Series 12 mm Tact Switches

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



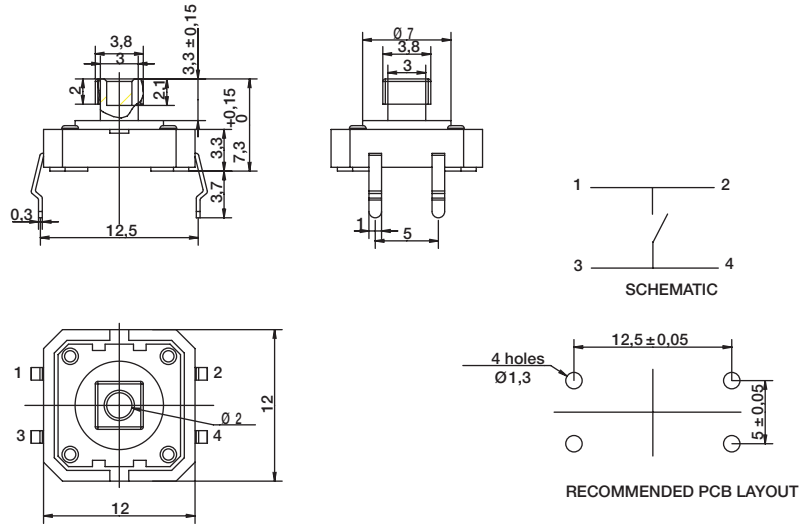
SMT VERSION WITH ROUND ACTUATOR AND PEGS H= 4.3 & 8.5 MM (other height upon request)



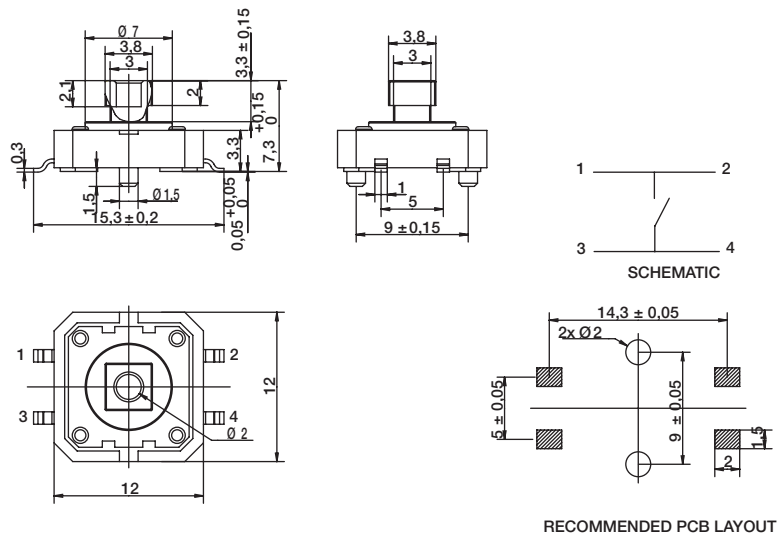
Tactile Switches

Tactile Switches

THT VERSION WITH SQUARE SNAP FIT ACTUATOR H= 7.3 MM

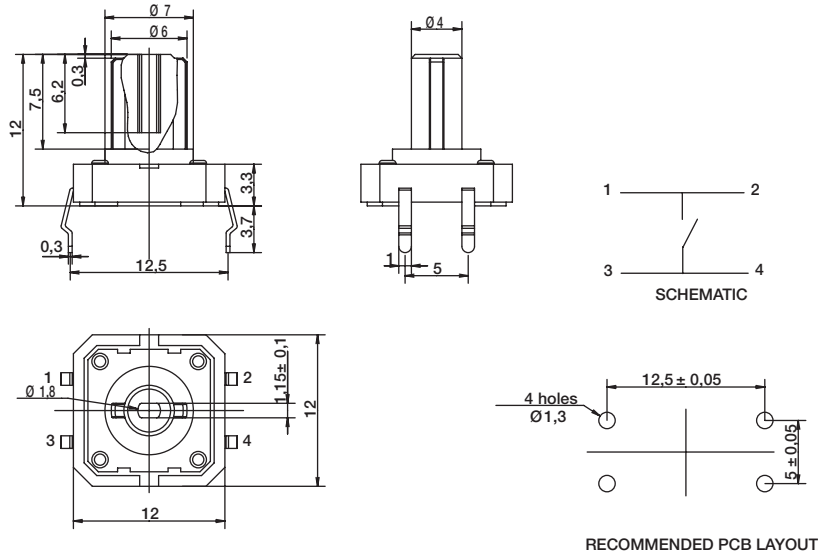


SMT VERSION WITH SQUARE SNAP FIT ACTUATOR AND PEGS H= 7.3 MM

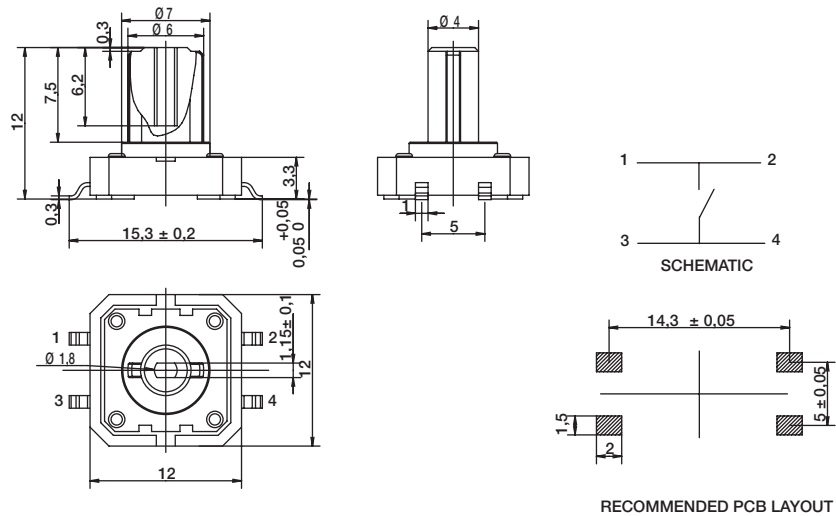


PTS125 Series 12 mm Tact Switches

THT VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



SMT VERSION WITH ROUND RIBBED ACTUATOR H= 12.0 MM



B Tactile Switches

Features/Benefits

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

Typical Applications

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



Specification

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

Mechanical

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

Electrical

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

Packaging

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

Environmental

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

Process

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

Materials

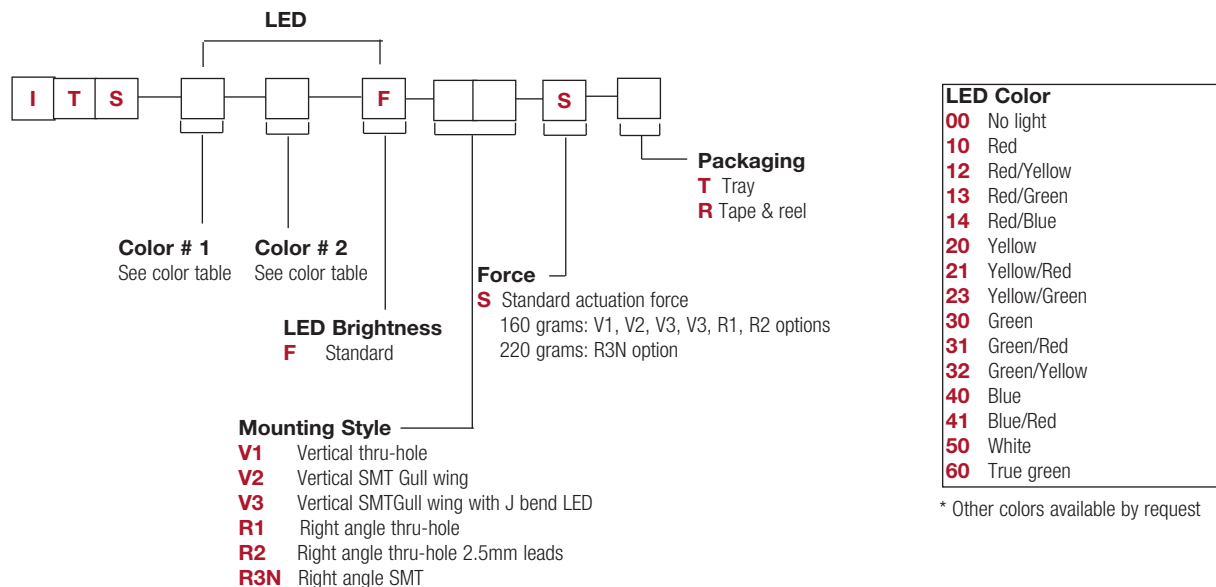
CONTACTS/TERMINALS: Base metal; brass
Plating; Ag
DOME: Base metal: Phosphor bronze
Plating; Ag
BASE: PA
ACTUATOR: PA
COVER: R3N option: Stainless steel
V2 & V3 options - PPA
Other options - PA

Caps

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

How To Order

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



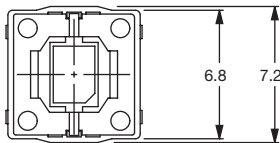
ITS Series Illuminated Tact Switch

LED COLOR / BRIGHTNESS

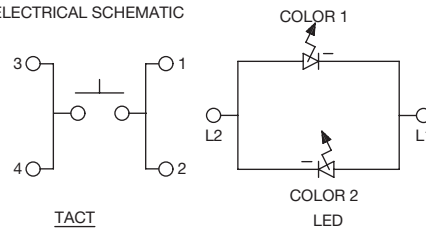
LED Characteristic	units	Standard LED Color Options					
		Red (1)	Yellow (2)	Green (3)	Blue (4)	White (5)	True Green (6)
Recommended Operating	mA @ 5VDC	20mA	20mA	20mA	20mA	20mA	20mA
Forward Current	mA	30 mA	30 mA	30 mA	30 mA	30 mA	30 mA
Peak Pulsing Current (1/8 duty @ 1kHz)	mA	125 mA	125 mA	125 mA	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)
Wavelength at Peak Emission @ 20mA	nm	645nm (Typical)	590nm (Typical)	573nm (Typical)	460nm (Typical)		515nm (Typical)
Spectral Half Bandwidth @ 20mA	nm	20nm (Typical)	20nm (Typical)	17nm (Typical)	25nm (Typical)		33nm (Typical)
Luminous Intensity @ 20mA	mcd	50mcd Minimum	125mcd Minimum	40mcd Minimum	100mcd Minimum	250mcd Minimum	500mcd Minimum
Viewing Angle at 50% LV (@10mA)	degrees	150° Typical	120° Typical	120° Typical	120° Typical	150° Typical	120° Typical

MOUNTING STYLES

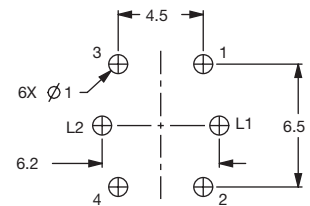
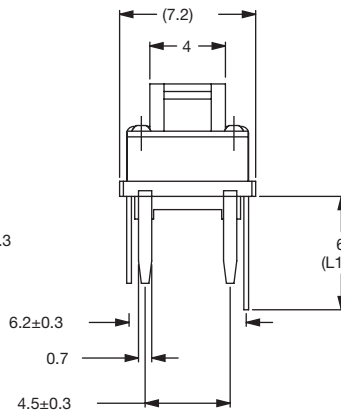
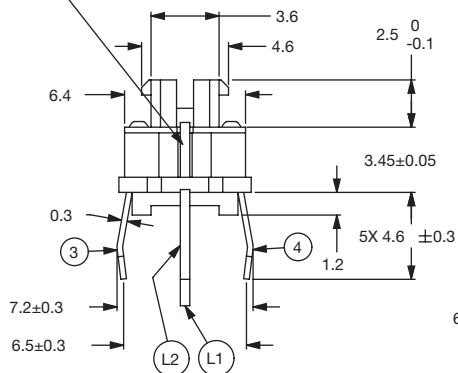
V1 - Vertical Thru-hole



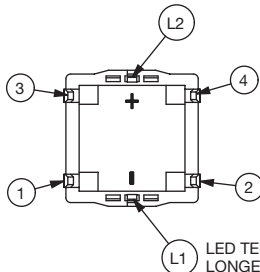
ELECTRICAL SCHEMATIC



DOT SHOWING LED COLOR IS MARKED FOR MINUS POLE SEE SCHEMATIC



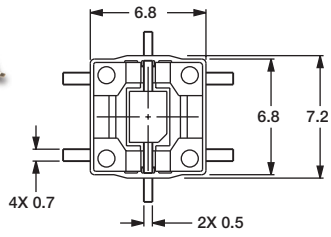
P.C.B. LAYOUT



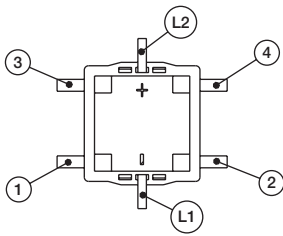
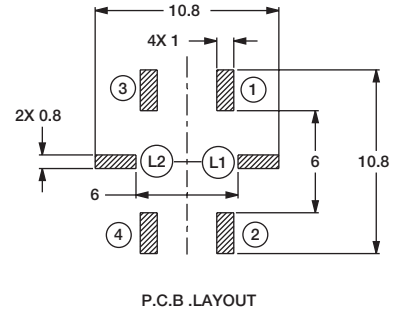
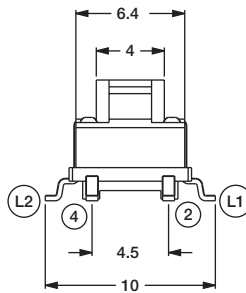
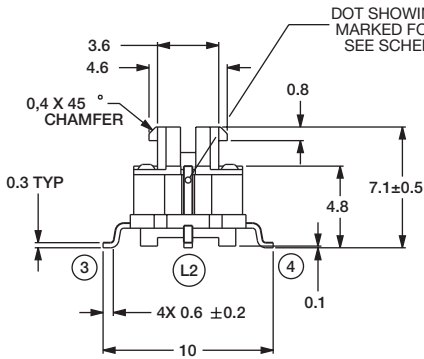
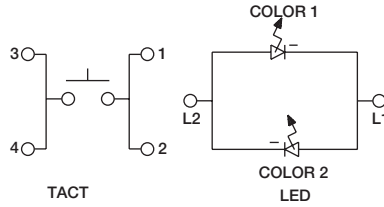
TRAY PACKAGING: 200 PIECES

MOUNTING STYLES

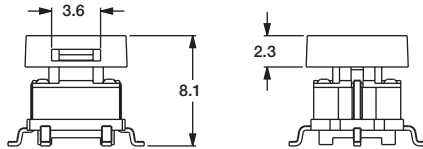
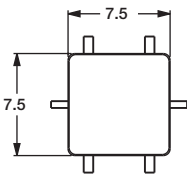
V2 - Vertical SMT; Gullwing



ELECTRICAL SCHEMATIC

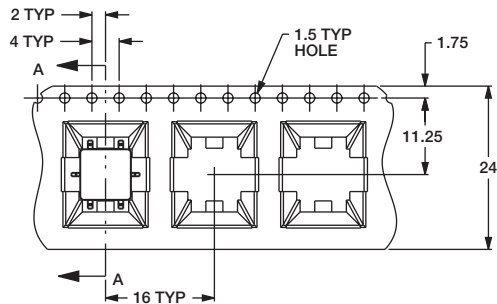


TAPE & REEL: 500 PIECES

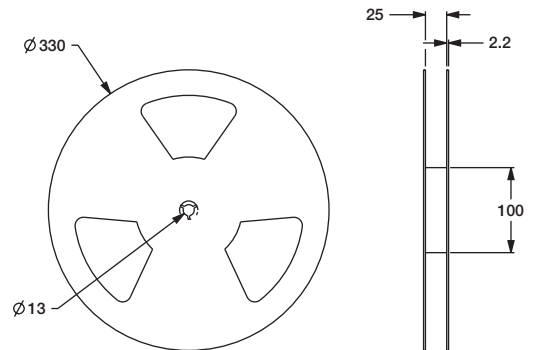


NOTES:

1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.



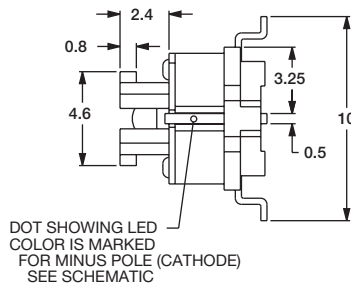
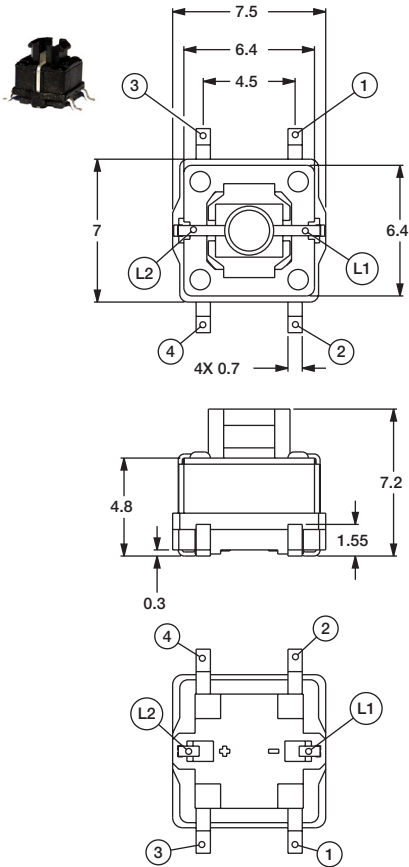
SECTION A-A



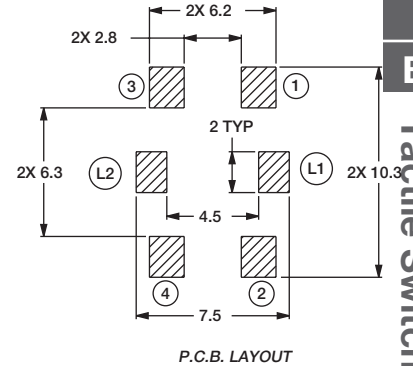
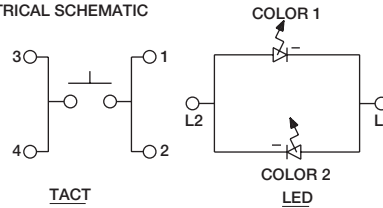
ITS Series Illuminated Tact Switch

MOUNTING STYLES

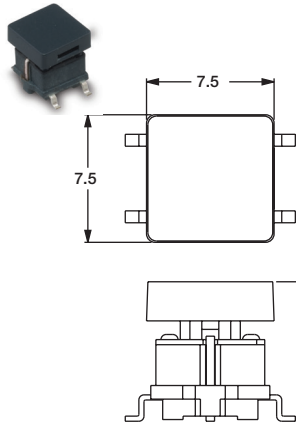
V3 - Vertical SMT; Gull wing with J bend LED



ELECTRICAL SCHEMATIC



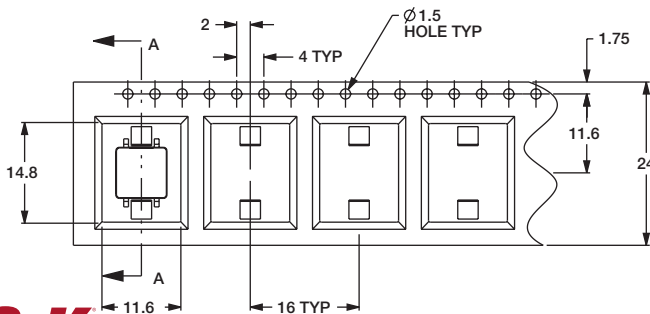
B
Tactile Switches



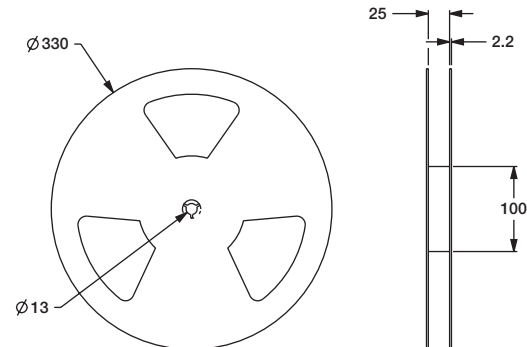
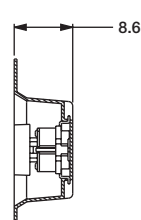
SCALE 3:1

TAPE & REEL: 500 PIECES

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

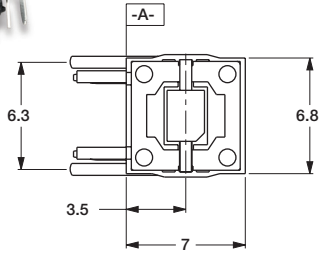


SECTION A-A

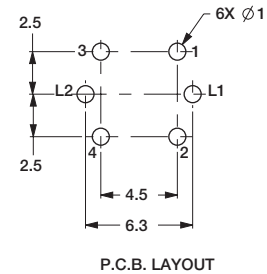
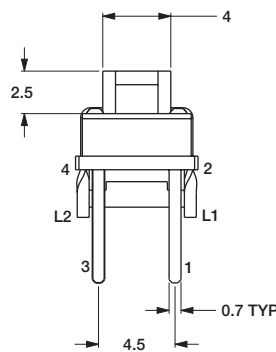
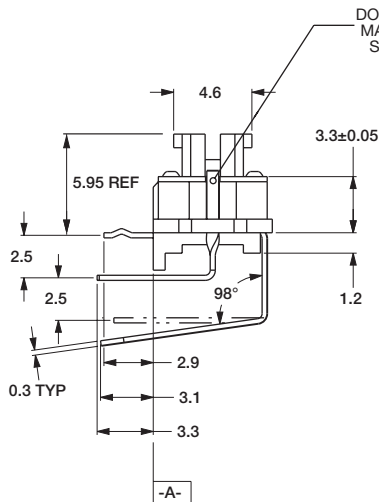
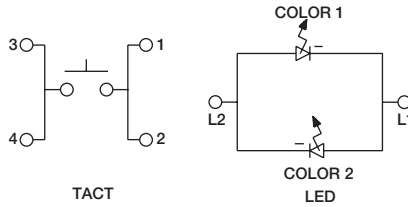


MOUNTING STYLES

R1 - Right Angle; Thru-hole

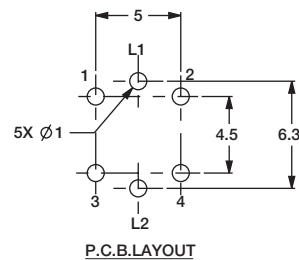
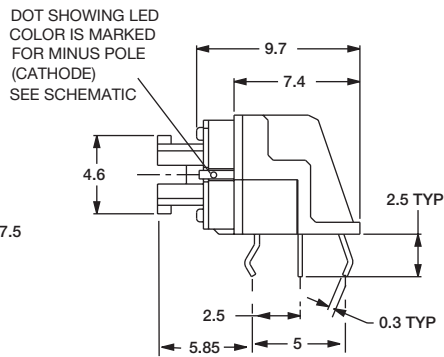
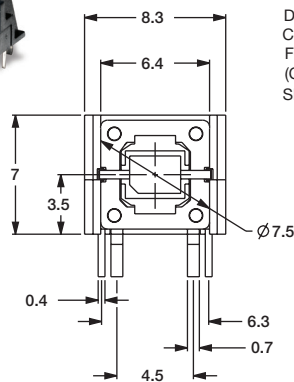


ELECTRICAL SCHEMATIC

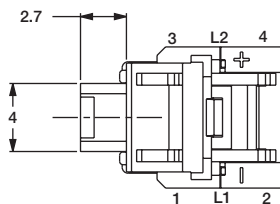
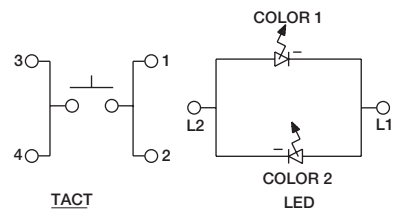


TRAY PACKAGING: 200 PIECES

R2 - Right Angle; Thru-hole 2.5mm leads



ELECTRICAL SCHEMATIC

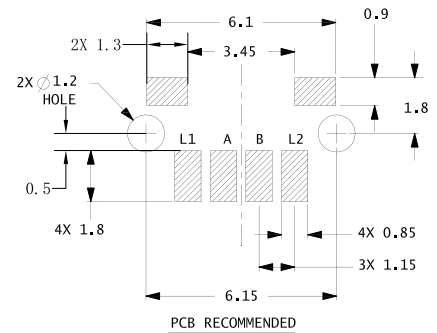
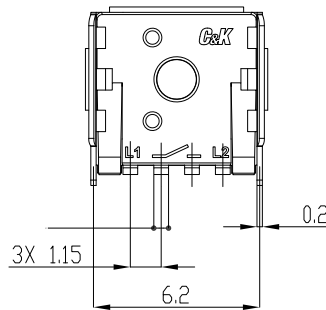
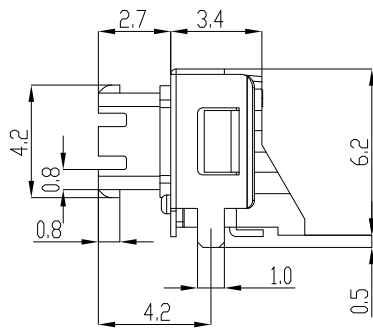
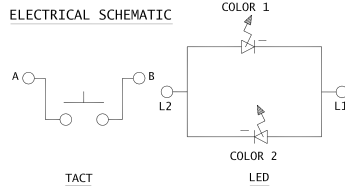
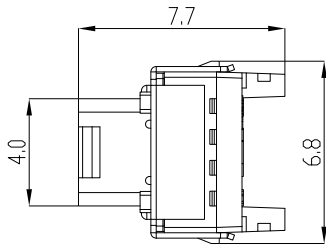


TRAY PACKAGING: 200 PIECES

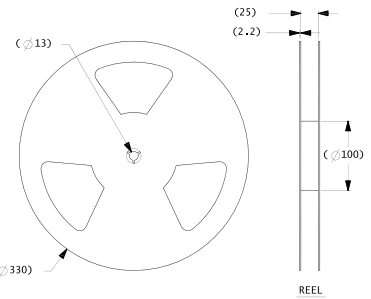
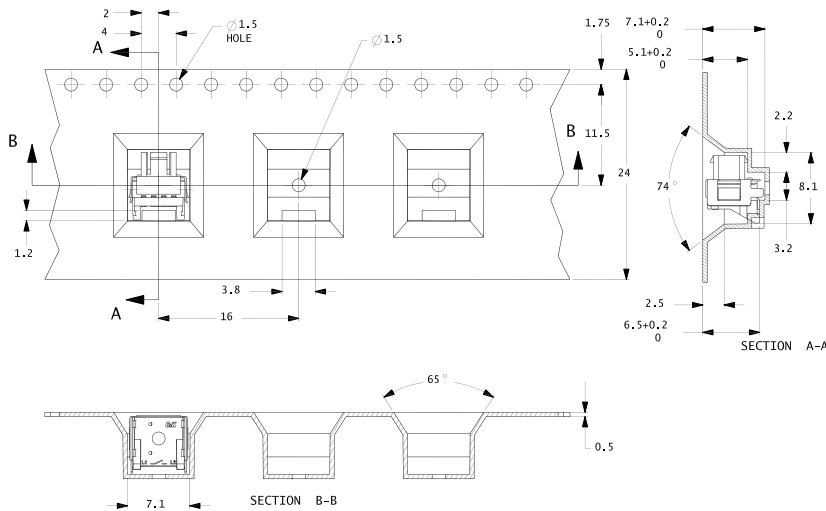
ITS Series Illuminated Tact Switch

MOUNTING STYLES

R3N - Right Angle, SMT



TAPE & REEL: 500 PIECES



FORCE

OPTION CODE	FORCE
S	Standard 160 gf - V1, V2, V3, R1, R2 options 220 gf - R3N option

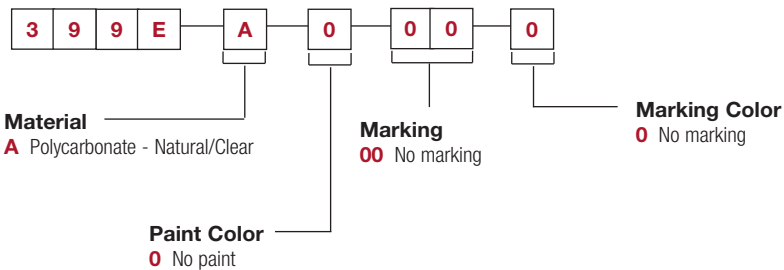
CAPS

Use the individual ordering code for each cap

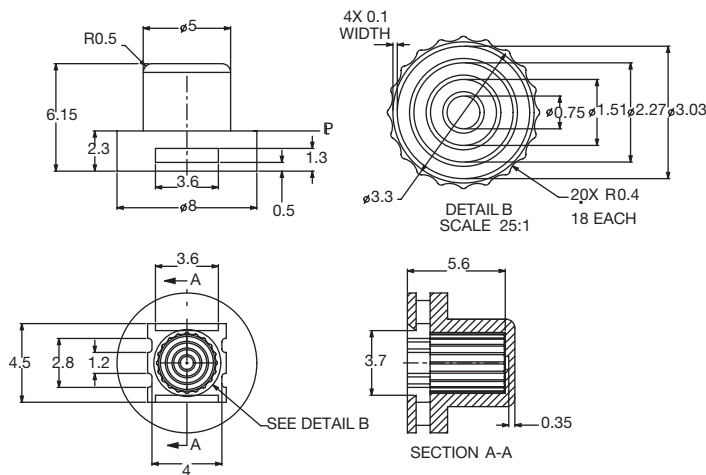


399EA0000*

Round cap, clear



* Not to be used with right angle versions



ITS Series Illuminated Tact Switch

CAPS



400EA0000

Natural/clear



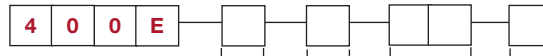
400EB0000

Translucent white, flat edge



400ECA01E

Matte silver paint laser etch, flat edge



Material

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

Paint Color

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

Laser Etch Marking

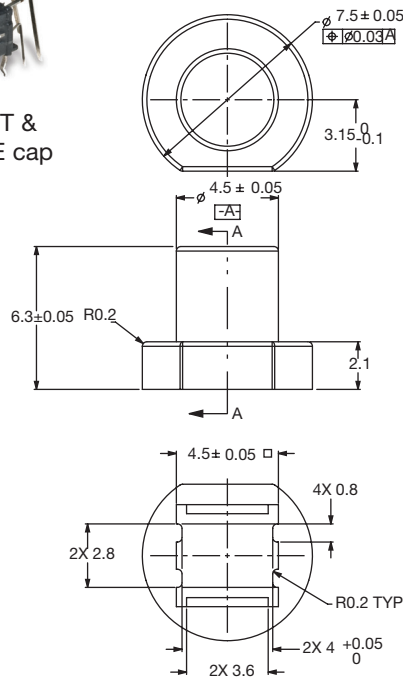
- 00** No marking
- 01** Power On/Off
- 04** Arrow right
- 05** Arrow left
- 06** Arrow up
- 07** Arrow down
- 09** Power
- 33** Arrow up (fill)
- 34** Arrow down (fill)
- 97** I/O

Marking Color

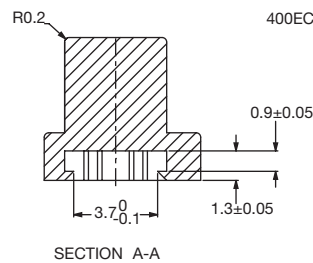
- 0** No marking
- E** Laser etch (painted caps only)



ITSXXFR1ST &
400ECA01E cap



400ECA01E SHOWN



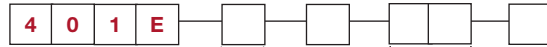
400E cap dimensions shown are "as molded" (no paint).

CAPS



401ECA06E

Matte silver paint, laser etch,
tall oval



Material

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

Paint Color

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

Laser Etch Marking

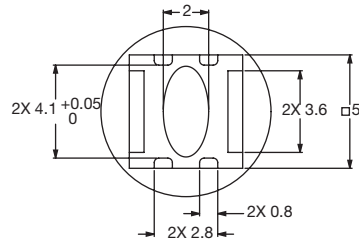
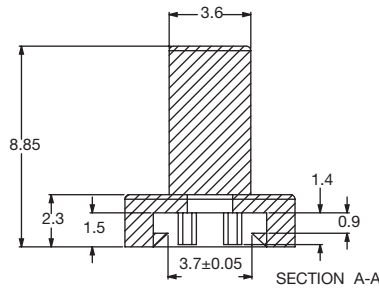
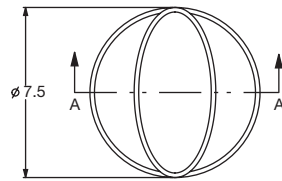
- 00** No marking
- 06** Arrow up
- 07** Arrow down
- 33** Arrow up (fill)
- 34** Arrow down (fill)

Marking Color

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



Tactile Switches



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

ILS Series Integrated LED Tact Switch

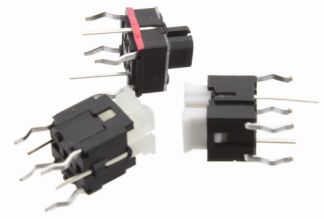
NEW

Features/Benefits

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

Typical Applications

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



Tactile Switches

Specification

TRAVEL: 0.25 mm ± 0.1 mm

Mechanical

OPERATING LIFE: 100,000 cycles

Electrical

RATING: 100mA max. @ 30VDC
10µA min. @ 1VDC
INSULATION RESISTANCE: 100M Ω min.
DIELECTRIC WITHSTANDING VOLTAGE:
250VAC (50-60 Hz 2mA) for 1 min
BOUNCE TIME: ON/OFF 5ms max.
INITIAL CONTACT RESISTANCE: 100m Ω max.

Environmental

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

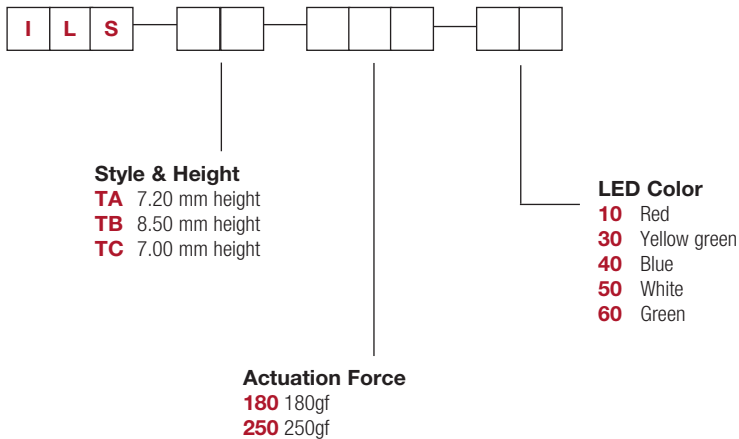
Packaging

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

How To Order

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

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



NEW

ILS Series Integrated LED Tact Switch

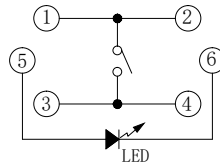
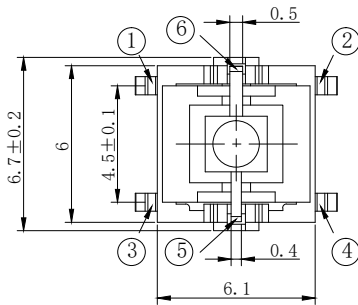
LED CHARACTERISTICS

STANDARD LED COLOR OPTIONS

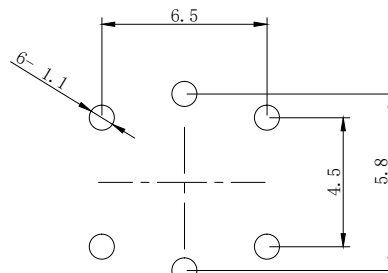
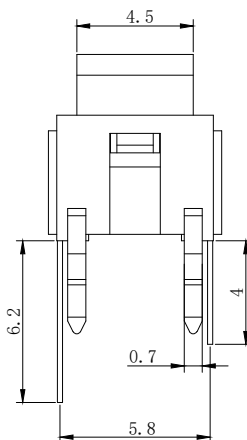
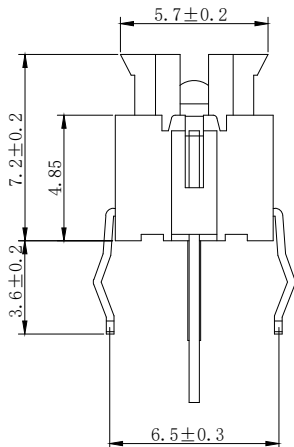
LED Parameter	Symbol	Condition	UNITS	RED 10	YELLOW/GREEN 30	BLUE 40	WHITE 50	GREEN 60
Power Dissipation	Pd	-	mW	52	60	120	18	120
Forward Current	IF	-	mA	20	20	30	5	30
Peak Forward Current *1	IFP	-	mA	100	100	100	100	100
Reverse Voltage	VR	-	V	5	5	5	5	5
Operating Temperature	Topr	-	-	-40°C to 85°C	-40°C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

STYLES

TA



CIRCUIT DIAGRAM



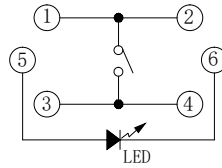
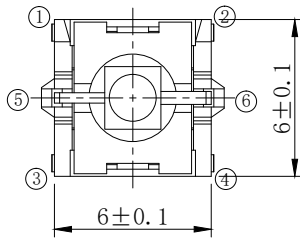
P.C.B LAND DIMENSION

ILS Series Integrated LED Tact Switch

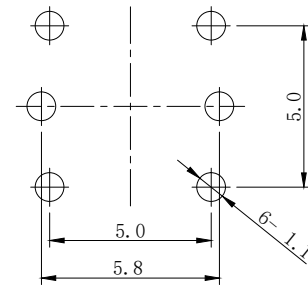
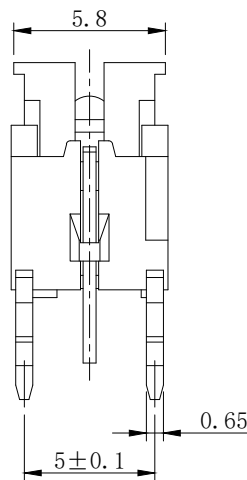
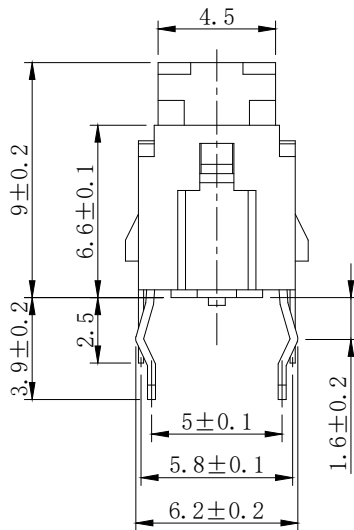
NEW

STYLES

TB

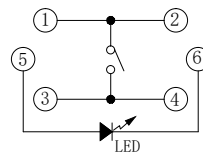
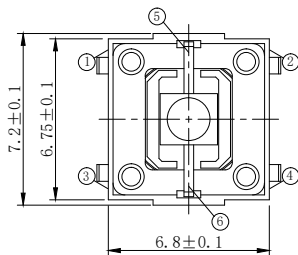


CIRCUIT DIAGRAM

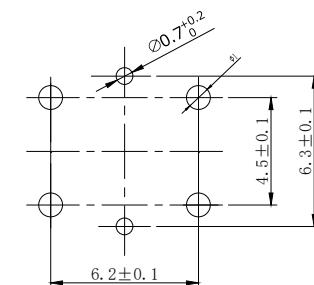
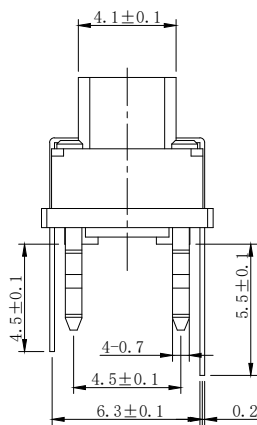
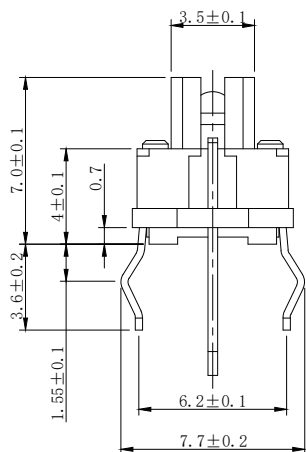


P.C.B LAND DIMENSION

TC



CIRCUIT DIAGRAM



P.C.B LAND DIMENSION



Dimensions are shown: mm
Specifications and dimensions subject to change

NEW

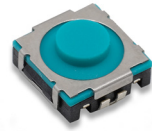
TLS Series Soft Sound Tact Switch

Features/Benefits

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

Typical Applications

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



Tactile Switches

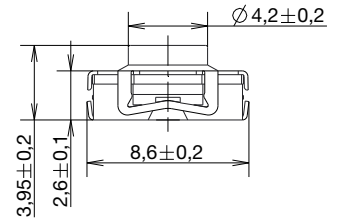
Type	Force (N)	Tactile Feeling (%)	Travel (mm)	Life (cycles)
TLS A 040J LFS	4 ± 0.8	50 ± 15	0.9 ± 0.3	500,000
TLS A 070J LFS	7 ± 1.5			500,000
TLS A 100J LFS	10 ± 2			300,000
TLS A 040 T3J LFS	4 ± 0.8	30 ± 15		500,000
TLS A 070 T3J LFS	7 ± 1.5			500,000
TLS A 100 T3J LFS	10 ± 2			300,000

POWER: 10µ VA min. / 0.8 VA max.

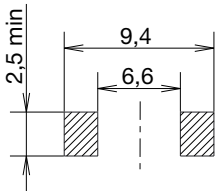
VOLTAGE: DC 1V min. / 16 V max.

CURRENT: 10µA min. / 50 mA max.

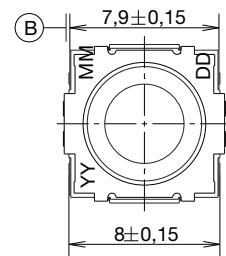
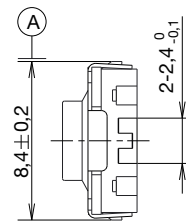
OPERATING TEMPERATURE: -40°C / +90°C



PCB LAYOUT



CIRCUIT DIAGRAM



Packaging

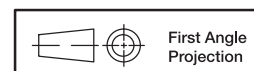
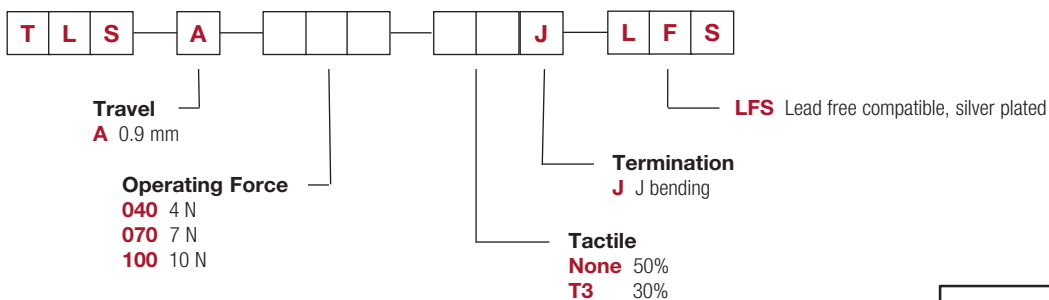
Switches in reels of 900 pieces.

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

How To Order

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

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



Dimensions are shown: mm
Specifications and dimensions subject to change

