Tactile Switches Product Selection Guide

Surface Mount		0	0		1		Q
Series	KMT2	KMT0	KMR2-4	KMS	PTS525	PTS530	PTS810
Size on PCB L x W (mm)	3 X 2,6	3 X 2,6	4,2 x 2,8	4,2 x 3,55	5,2 x 5,2	4,5 x 4,5	4,2 x 3,2
Total Height (mm)	0,65	0,65	1,9 2,5	1,42	0,8 and 1,5	0,55 and 0,65	2,5
Travel (mm)	0,15	0,15	0,2 to 0,35	0,25 to 0,3	0,3	0,2	0,15/0,2
Actuation Force (N)	1.0 1.6	1.0 1.6 2.3 3.4	1.2 2.0 3.0 4.0	2.0 3.0	1.6 2.6	1.0; 1.6; 2.0; 2.6; 4.0; 6.0	1.6 2.6 4.0 6.0
Contact Type	Silver	Silver	Silver Gold	Silver Gold	Silver	Silver	Silver
Max. Voltage (V)	32	32	32 32	32 32	32	12	16
Max. Switching Power (VA)	0,5	0,5	1 0,2	1 0,2	1	-	-
Life Cycles	150,000	300,000 600,000 1,000,000	100,000 300,000	100,000	100,000	150,000 to 1,000,000	50,000 to 150,000
IP Rating	IP54	IP68	IP40	IP40	IP40	-	-
Page Number	B-5	B-7	B-9/B-11	B-13	B-15	B-17	B-19
Surface Mount			9	No. of Street, or other Persons and the street, or other persons and the street, or other persons are also as the stree			
Series	PTS820	PTS840	KSR	KSS	KSC 1 2	3 4 6 7 8	KSC4V2
Size on PCB L x W (mm)	3,9 x 2,9	3,5 x 3,55	7,15x3,8 7,3x3,8	5,5 x 4,4	J 6,8x6,2	G 10x6,2	2 holes ø 1,1 2 pads 1,5 x 0,8
Total Height (mm)	1,5/2,0/2,5	1,35	2,5	1,7	2,6 3,5 3,5 5,	0 5,2 7,7 4,3	5,0*
Travel (mm)	0,2	0,2	0,3 to 0,5	0,3	0,20 to 0,	75 *	0,7*
Actuation Force (N)	1.6 2.5	1.6 2.2	1.2; 2.0; 3.0; 4.5	2 2.5 4	1,1 to 5,	5 *	3.5*
Contact Type	Silver	Silver	Silver Gold	Silver Gold	Silver	Gold	Silver Gold
Max. Voltage (V)	12	12	32 32	32 32	32	32	32 32
Max. Switching Power (VA)	-	-	1 0,2	1 0,2	1	0.2	1 / 0,2
Life Cycles	100,000 200,000	100,000	100,000 200,000	100,000	100,000 to 1,000,000		300,000
IP Rating	-	-	IP50	IP40	IP67		IP67
Page Number	B-21	B-24	B-27	B-31	B-33		B-44



^{*} Other options available by request

Tactile Switches Product Selection Guide

SMT, Thru-hole Sealed High Performance				No.	
Series	KSC5	KSC9	KSC-ST	KSE	KST
Footprint	J G 6,8x6,2 10x6,2	J G 6,8x6,2 10x6,2	J G 6,8x6,2 10x6,2	6,8 x6,2	J G 6,8x6,2 10x6,2
Total Height (mm)	5,6	7,7*	5,2	3,1 / 4,3	5
Travel (mm)	axial: 0,25 lateral: 0,5	0,4	0,3 to 1,0	0,3	1,33
Actuation Force (N)	2.0 3.0	1.7 2.55 3.4	3.4 4.5/8.0	1.5 / 2.25	2.0 3.5
Contact Type	Silver Gold	Silver Gold	Silver Gold	Silver	Silver Gold
Max. Voltage (V)	32 32	32 32	32 32	32	30 30
Max. Switching Power (VA)	1 0,2	1 0,2	1 0,2	1	0,50 0,2
Life Cycles	10,000 100,000	300,000	100,000 300,000	300,000	100,000
IP Rating	IP50	IP67	IP67	IP67	IP40
Page Number	B-39	B46	B-41	B-49	B-56

Thru-hole Sealed High Performance	a Comment	17.0	0)	9			5				N.	
Series	K	T	K5AT	K	(8	K5V	KSF	KSFI	ŀ	SA	KSA	MKII
Footprint	SA 7,5x5	SA2 7,5x7	G 8,4x10,8	8,4x		8 x 9 x 17 / 9 x 13	7,62 >	¢ 5,08	7,62	x 5,08	7,62 >	5,08
Total Height (mm)	6,6 7,11 wit		6,1	6)	9 / 13	2	,6		1,7 n option	4,	7
Travel (mm)	0,3 to	0,5	0,5	0,	45	1,2	0,3 to	0 0,5	0,3	to 0,5	0,3 t	0,5
Actuation Force (N)	3		4	2. 4.	-	4.0	1.3 3.0	1.6 5.0	3	1.3 3.0 5.0	3	.3 .0 .0
Contact Type	Silver	Gold	Gold	Silver	Gold	Gold	Silver	Gold	Silve	r Gold	Silver	Gold
Max. Voltage (V)	50	50	32	32	32	32	32	32	32	32	32	32
Max. Switching Power (VA)	1	0.2	1	1	0.2	1	1	0.2	1	0.2	1	0.2
Life Cycles	100,0	000	25,000	300	,000	25,000	100,	,000	100),000	100, 1,000	
IP Rating	IP5	57	IP40	IF	40	IP40	IP	60	IF	P60	IP	67
Page Number	B-:	52	B-58	B-(60	B-63	B-	67	В	-69	B-7	74

^{*} Other options available by request



Tactile Switches Product Selection Guide

Thru-hole	27		8		50	10		B	No.	6	1	
Series	KS	A-V	K	SL	KSI	L-V	K	SJ	KS	J-V	PTS6	35
Footprint	7,62 x	2,54	7,62	x 5,08	7,62 x	2,54	7,62	x 5,08	7,62	x 2,54	6 x 3	,5
Total Height (mm)	8		9	Θ,	8		6,	65		8	2,5 4,3 5,0	
Travel (mm)	0,3 to	0,5	0,3 to	0,5	0,3 to	0,5	0,55 t	o 0,7	0,55 t	o 0,7	0,25	5
Actuation Force (N)	1. 3. 5.	0	1, 3,		1,0 3,0		2, 3,		2,0 3,0		1,3 2,0 2,6	
Contact Type	Silver	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silver	Gold	Silve	er
Max. Voltage (V)	32	32	32	32	32	32	32	32	32	32	12	
Max. Switching Power (VA)	1	0.2	1	0.2	1	0.2	1	0.2	1	0.2	50	
Life Cycles	100,0	000	100,	000	100,	000	100, 30,0	,000 000	100, 30,0		20,00	00
IP Rating	IP6	00	IP	60	IP6	80	IP	60	IP6	60	IP40)
Page Number	В	-69	В	-69	В	-69	В	-76	E	3-76	B-7	'8
Thru-hole Sealed High Performance	1	0	A. T.	A		B	1	4	4			A.
Series	PTS	635-V	PT	S645	PTS	645-V	PI	S125	PTS	125-V	IT	S
Footprint	7,0	x 2,5	6	x 6	7,0 x	2,5	12	2 x 12	3,20 x	11,53		
Total Height (mm)	4	1,3		5,0; 9,5;	7,	1	7,3	4,3 Sq. 8,5 12,0	14	,90		
Travel (mm)	0,	,25	0	,25	0,	25	C	,30	0	,30		
Actuation Force (N)		1,3 2,0		3; 1,6); 2,6		1,6 2,6		1,6 2,6		,6 ,6		
Contact Type	Si	lver	Si	lver	Sil	ver	s	ilver	Si	lver		
Max. Voltage (V)	1	12	1	12	1	2		12		12		
Life Cycles	20,	,000	100	,000	100	,000	200	0,000	200),000		
IP Rating	IF	P40	IF	240	IP	40		P40	IP	40		
Page Number	В	3-78	В	-81	B-	81	В	-84	В	-84	B-8	7



B-4

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



В

Specification

FUNCTION: momentary action

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

TERMINALS: Gullwing type for SMT

Mechanical

	Operating force	Operating	Tactile	
Type G and NG	Newtons (grams)	Life	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: 20mV MAXIMUM CURRENT DC: 50 mA MINIMUM CURRENT DC: 1 mA

DIELECTRIC STRENGTH: ≥ 250 Vrms (1mn) CONTACT RESISTANCE: \leq 150 m Ω INSULATION RESISTANCE: ≥ 50 MΩ **BOUNCE TIME:** ≤ 6 ms

Environmental

Silver

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

+85°C (4 days)

Process

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

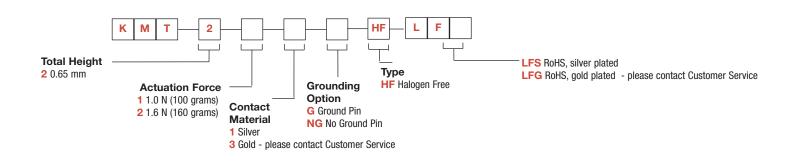
Packaging

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

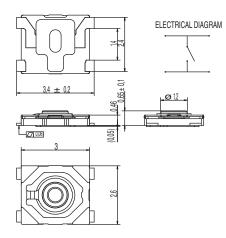
NOTE: Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

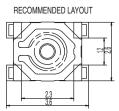
Part Number Description

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

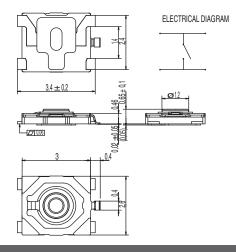


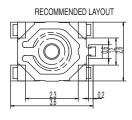




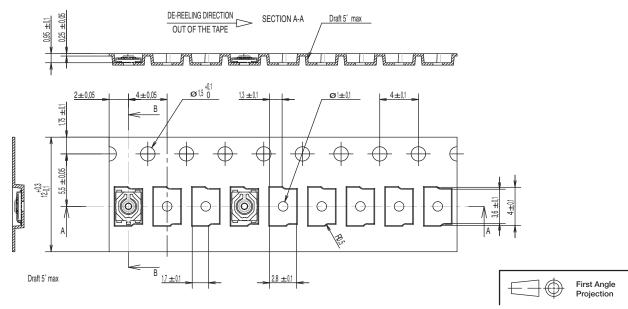


KMT Series – With Ground Pin





TAPE & REEL





KMT0 Series Nano-Miniature SMT Top Actuated



Features

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

Typical Applications

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

≤ 6 ms

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	Tactile	Operating
	Newtons (grams)	Feeling	Life
KMT011NGJLHS		≥ 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	Tactile	Operating
	Newtons (grams)	Feeling	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: 20mV MAXIMUM CURRENT DC: 50 mA MINIMUM CURRENT DC: 1 mA DIELECTRIC STRENGTH: ≥ 250 Vrms (1mn) CONTACT RESISTANCE: \leq 150 m Ω **INSULATION RESISTANCE:** \geq 50 M Ω

Environmental

BOUNCE TIME:

OPERATING TEMPERATURE: -40°C to 85°C

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

Process

SOLDERING: This component is suited to the following methods:

– Infrared Reflow Soldering in accordance with IEC61760-1

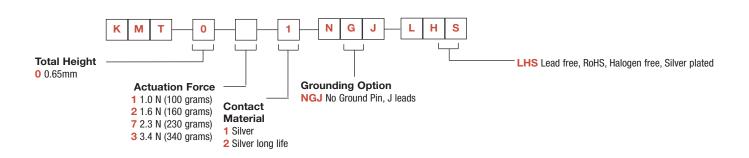
Packaging

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

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

Part Number Description

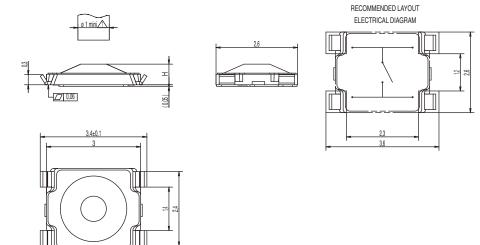
For any part number different from those listed above, please consult your local representative.



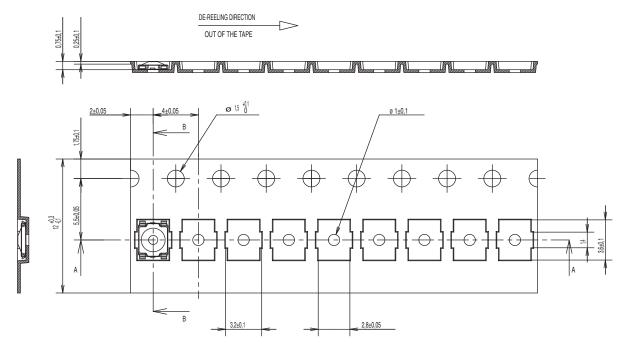


www.ck-components.com

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



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KMR 2 Series Microminiature SMT Top Actuated



Features/Benefits

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

Typical Applications

- **Automotive**
- Cellular phones
- Industrial electronics
- Medical equipment

— Fi

Specification

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

Mechanical

Type G and NG (except gold version G only) See description below	Operating force N (grs)	Operating life (cycles)	Travel (mm)
KMR211 LFS	1.2 (120) ± 0.30	200 000	0.20 mm ± 0.1
KMR213 LFG	1.2 (120) ± 0.30	200 000	0.20 mm ± 0.1
KMR221 LFS	2.0 (200) ± 0.50	200 000	0.25 mm ± 0.1
KMR223G LFG	2.0 (200) ± 0.50	200 000	0.25 mm ± 0.1
KMR231 LFS	$3.0 (300) \pm 0.75$	150 000	0.25 mm ± 0.1
KMR233G LFG	$3.0(300) \pm 0.75$	150 000	0.25 mm ± 0.1
KMR231 ULC LFS	$3.0(300) \pm 0.75$	150 000	0.25 mm ± 0.1
KMR232 LFS	$3.0 (300) \pm 0.75$	300 000	0.25 mm ± 0.1
KMR232 ULC LFS	$3.0(300) \pm 0.75$	300 000	0.25 mm ± 0.1
KMR241 LFS	4.0 (400) ± 1.00	100 000	0.30 mm ± 0.1
KMR243G LFG	4.0 (400) ± 1.00	100 000	0.30 mm ± 0.1
KMR241 ULC LFS	4.0 (400) ± 1.00	100 000	0.30 mm ± 0.1
KMR242 LFS	4.0 (400) ± 1.00	200 000	0.30 mm ± 0.1
KMR242 ULC LFS	4.0 (400) ± 1.00	200 000	0.30 mm ± 0.1

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

Electrical	Silver	Gold
MAXIMUM POWER:	1 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mVDC	20 mVDC
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA*	1 mA*
DIELECTRIC STRENGTH:	≥ 250 Vrms	
CONTACT RESISTANCE:	\leq 100 m Ω	
INSULATION RESISTANCE:	\geq 1G Ω	
BOUNCE TIME:	≤ 3 ms	

^{*}For ULC version minimum current is $1\mu\text{A}$ at 1.8 VDC

Environmental	Silver	Gold

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

Process

Infrared Reflow Soldering in accordance with IEC61760-1

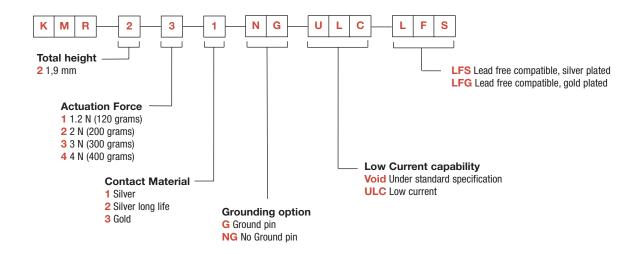
Packaging

In reels of 7.000 pieces for KMR 2 External diameter 330 mm ± 2 mm

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

Part Number Description

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

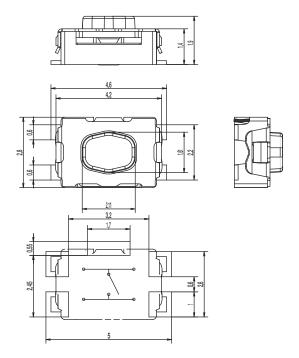




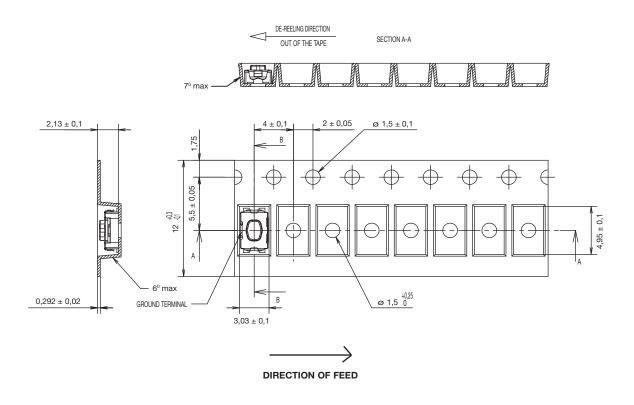


В





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KMR 4 Series Microminiature SMT Top Actuated

Features/Benefits



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

Typical Applications

- Automotive
- Cellular phones
- Industrial electronics
- Medical equipment

______₁

В

Specification

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

Mechanical

Type G and NG (except gold version G only) See description below	Operating force N (grs)	Operating life (cycles)	Travel (mm)
KMR421 LFS	2.0 (200) ± 0.50	200 000	0.25 mm ± 0.1
KMR431 LFS	3.0 (300) ± 0.75	150 000	0.30 mm ± 0.1
KMR431 ULC LFS	$3.0(300) \pm 0.75$	150 000	0.30 mm ± 0.1
KMR432 LFS	$3.0(300) \pm 0.75$	300 000	0.30 mm ± 0.1
KMR432 ULC LFS	$3.0(300) \pm 0.75$	300 000	$0.30 \text{ mm} \pm 0.1$
KMR441 LFS	4.0 (400) ± 1.00	100 000	$0.35 \text{ mm} \pm 0.1$
KMR441 ULC LFS	4.0 (400) ± 1.00	100 000	$0.35 \text{ mm} \pm 0.1$
KMR442 LFS	4.0 (400) ± 1.00	200 000	$0.35 \text{ mm} \pm 0.1$
KMR442 ULC LFS	4.0 (400) ± 1.00	200 000	$0.35 \text{ mm} \pm 0.1$

TACTILE FEELING: for KMR 4 series: $\geq 25\%$

Electrical	Silver	Gold
MAXIMUM POWER:	1 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mVDC	20 mVDC
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA*	1 mA*
DIELECTRIC STRENGTH:	≥ 250 Vrms	
CONTACT RESISTANCE:	\leq 100 m Ω	
INSULATION RESISTANCE:	$\geq 1G\Omega$	
BOUNCE TIME:	≤ 3 ms	

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

Environmental Silver Gold

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

Process

Infrared Reflow Soldering in accordance with IEC61760-1

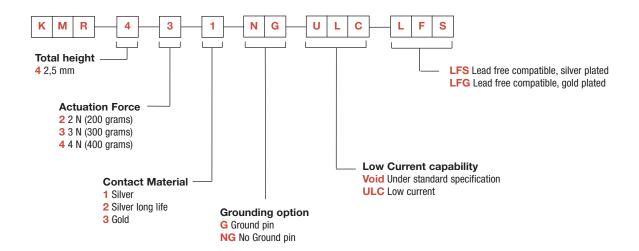
Packaging

In reels of 6,000 pieces for KMR 4 External diameter 330 mm ± 2 mm

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

Part Number Description

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





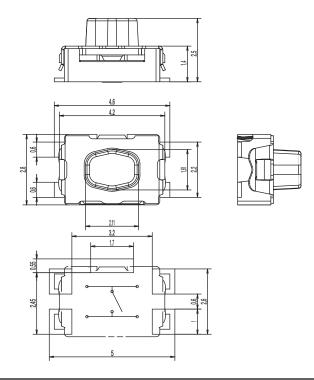
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В

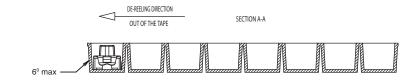
KMR 4 Series Microminiature Tact Switch for SMT

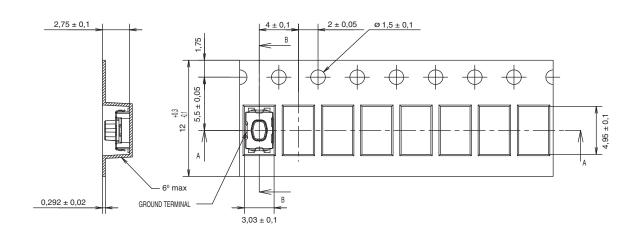
KMR 4 Series - 2.5 mm height

PCB layout shown with ground pin option



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KMS Series Microminiature SMT Side Actuated



Features/Benefits

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

Typical Applications

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



В

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

	Operating force	Operating life	
Type	Type Newtons (grams)		Travel
KMS221G/GP 2N (200) ± 0.5		100 K cycles	$0,25 \pm 0,15$
KMS223G/GP 2N (200) ± 0.5		100 K cycles	$0,25 \pm 0,15$
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: \leq 100 m Ω INSULATION RESISTANCE: $10^{\circ}\Omega$

BOUNCE TIME: ≤ 3 ms

EnvironmentalSilver
Gold

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

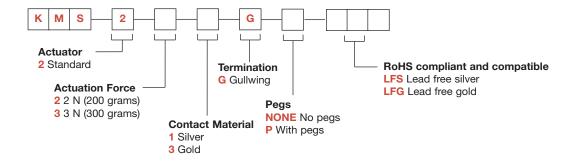
STORAGE TEMPERATURE: -55°C to 85°C -55°C to 125°C

Process

Infared reflow soldering in accordance with IEC 61760-1

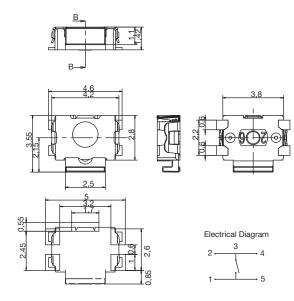
How To Order

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

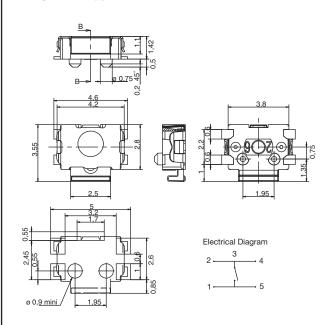




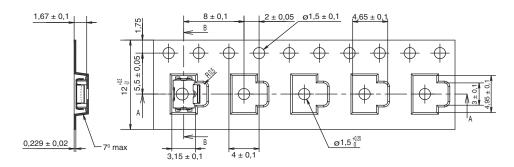
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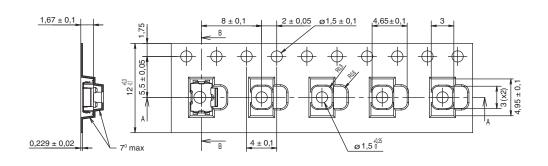
KMS WITH PEGS



TAPE & REEL



WITH PEGS









PTS 525 Series Microminiature Tact Switch for SMT



Features/Benefits

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

Typical Applications

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



В

Specification

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

Mechanical

ACTUATION FORCE: PTS525 models: 160 grams, 260 grams LIFE EXPECTANCY: 100,000 operations.

Electrical

CONTACT RATING: 50 mA @ 12 V DC. DIELECTRIC STRENGTH: 250 V AC min. CONTACT RESISTANCE: 100 m Ω max. initial. INSULATION RESISTANCE: 10 $^{11}\Omega$ min. ELECTRICAL TRAVEL: 0,30 ± 0,15 mm

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

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

Environmental

OPERATING TEMPERATURE: -40°C to 60°C

Process

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

Materials

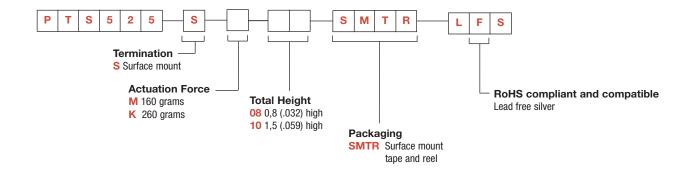
BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0). ACTUATOR: 6/6 nylon or polyacetal (UL 94HB). DOME CONTACTS: Phosphor bronze, silver clad. STATIONARY CONTACTS: Brass, silver plated. TERMINALS: Brass, silver plated. Insert molded.

Packaging

3000 pieces per Tape and Reel

How To Order

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





Dimensions are shown: mm (inches) Specifications and dimensions subject to change

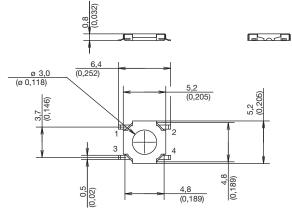


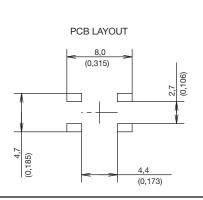
18 iulv 12

В

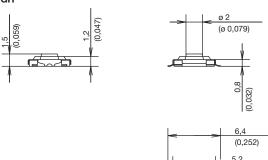
SM08 0,8 MM HIGH

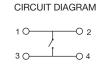
CIRCUIT DIAGRAM

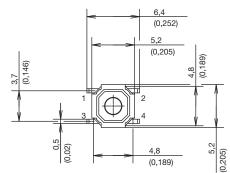


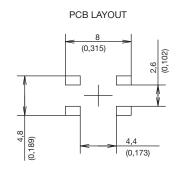


SM10 1,5 MM HIGH



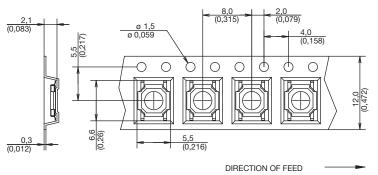


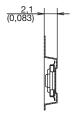


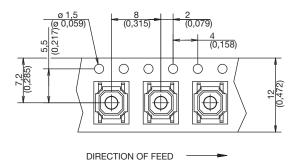


TAPE & REEL

SM08 SM10







First Angle Projection



KSR Series Subminiature Tact Switch for SMT

Features/Benefits

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

Typical Applications

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





Specification

FUNCTION: momentary action

CONTACT ARRANGEMENT: Normally Open TERMINALS: Gullwing type for SMT

Mechanical

	Operating force	Operating life	Travel
Type	Newtons (grams)	(operations)	
KSR211/213	KSR211/213 1,5 <fa< 2,2<="" td=""><td>0,25 ± 0,15</td></fa<>		0,25 ± 0,15
KSR221/223	1,9 <fa< 2,6<="" td=""><td>100,000</td><td>0.3 ± 0.15</td></fa<>	100,000	0.3 ± 0.15
KSR231/233 2,25 <fa< 100,000<="" 3,75="" td=""><td>0,35 ± 0,15</td></fa<>		0,35 ± 0,15	
KSR251/253 3,37 <fa< 100<="" 5,6="" td=""><td>100,000</td><td>0,5 ± 0,15</td></fa<>		100,000	0,5 ± 0,15
KSR223GNC	1,5 <fa< 2,5<="" td=""><td>30,000</td><td>0.3 ± 0.15</td></fa<>	30,000	0.3 ± 0.15

Overload: 20 Newtons

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

Packaging

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

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

CONTACT RESISTANCE: ≤ 100 mΩ

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

BOUNCE TIME: 1 ms max.

Environmental Silver Gold

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

Process

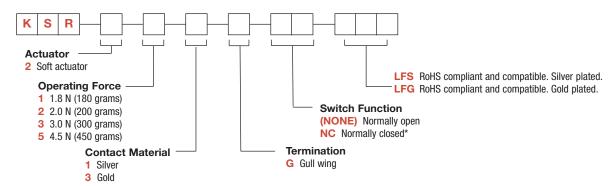
SOLDERING: Compatible with lead free reflow soldering process.

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

How To Order

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

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

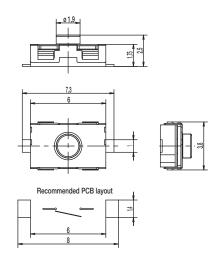


^{*}Available on KSR223G only.

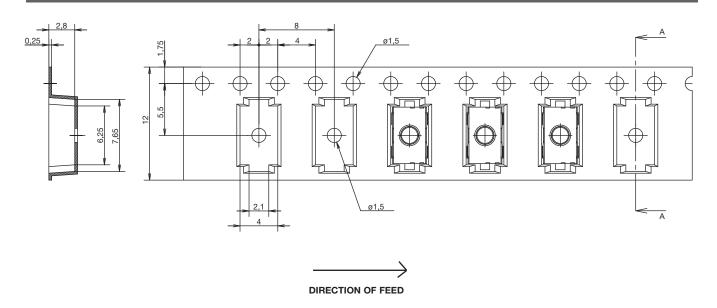


www.ck-components.com

Tactile Switches



TAPE & REEL





B-28

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

Features/Benefits

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

Typical Applications

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



Specification

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

Mechanical

	Operating force(Fa)	Operating life	Travel
Type	Newtons (grams)	(operations)	
Silver versions			
KSR212G LFS	1.5 < Fa < 2.2	200,000	$0,25 \pm 0,15$
KSR222G LFS	1.9 < Fa < 2.6	200,000	0.3 ± 0.15
KSR232G LFS	2.25 < Fa < 3.75	200,000	0,35 ± 0,15
KSR252G LFS	3.37 < Fa < 5.6	200,000	0,5 ± 0,15
Gold versions			
KSR214G LFS	1.5 < Fa < 2.2	200,000	0,25 ± 0,15
KSR224G LFS	1.9 < Fa < 2.6	200,000	0,3 ± 0,15
KSR234G LFS	2.25 < Fa < 3.75	200,000	0.35 ± 0.15
KSR254G LFS	3.37 < Fa < 5.6	200,000	0.5 ± 0.15

OVERLOAD: 20 Newtons

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

CONTACT RESISTANCE: \leq 100 m Ω

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

BOUNCE TIME: 1 ms max

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

Process

SOLDERING: Compatible with lead free reflow soldering process.

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

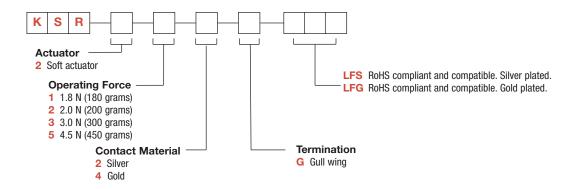
Packaging

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

How To Order

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

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





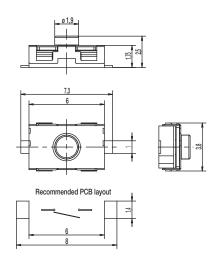
KSR Long Life-200,000 cycles-Gold and Silver Series Subminiature Tact Switch for SMT

KSR

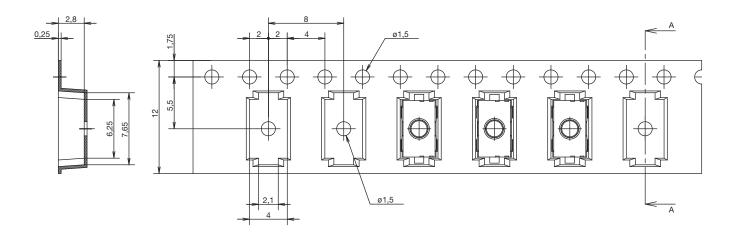
Ti di

В

Tactile Switches



TAPE & REEL







First Angle

Dimensions are shown: mm (inches)



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



В

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.

	Operating force	Operating life	Travel
Type	Newtons (grams)	(operations)	(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

ElectricalSilverGoldMAXIMUM POWER:1 VA0.2 VAMAXIMUM VOLTAGE:32 VDC32 VDCMAXIMUM CURRENT:50 mA10 mAMINIMUM CURRENT:1 mA1 mA

DIELECTRIC STRENGTH: $\geq 250~\text{VDC}$ CONTACT RESISTANCE: $< 100~\text{m}\Omega$

INSULATION RESISTANCE (100 VDC): $\geq 10^9 \Omega$

BOUNCE TIME: < 3 ms

EnvironmentalSilverGoldOPERATING TEMPERATURE:-40°C to 85°C-40°C to 125°CSTORAGE TEMPERATURE:-55°C to 85°C-55°C to 125°C

Process

Infared reflow soldering in accordance with IEC 61760-1

Packaging

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

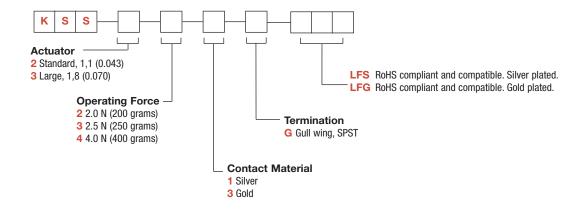
For information on specific and custom switches, consult Customer Service Center.

NOTE: Specifications listed above are for switches with standard options

How To Order

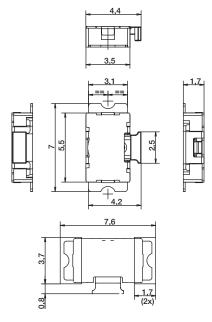
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

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



ACTUATOR

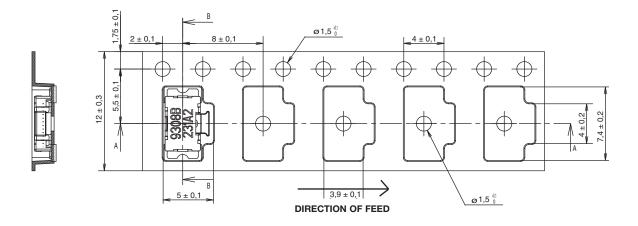
2 STANDARD, 1,1 (0.043)



3 LARGE, 1,8 (0.070)



TAPE & REEL





First Angle Projection



KSC Series Sealed Tact Switch for SMT

Features/Benefits

- Positive tactile feeling
- J or G terminations
- Tape & reel
- IP 67

Typical Applications

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



Specification

FUNCTION: Momentary action

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

TERMINALS: J bend & Gullwing type for SMT

Mechanical

	Operating	Operating	
Туре	force FA	life	Travel
	(Newtons)	(operations)	(mm)
	Min/Max		
KSC121J	1.2 / 2.5	200,000	0.3 ± 0.15
KSC141J	2.25 / 3.75	200,000	0.3 ± 0.15
KSC151J	4.1 / 6.9	100,000	0.35 ± 0.15
KSC201J	0.9 / 2.0	300,000	0.3 +0.2 /-0.15
KSC221J	1.5 / 2.5	500,000	0.35 +0.3 /-0.1
KSC222J	1.5 / 2.5	1,000,000	0.35 +0.3 /-0.1
KSC241J	2.6 / 4.4	300,000	0.5 ± 0.2
KSC251J	4.1 / 7.0	300,000	0.5 ± 0.2
KSC321J	1.6 / 2.4	300,000	0.2 +0.3 /0
KSC341J	2.25 / 3.75	300,000	0.2 +0.3 /0
KSC351J	4.0 / 6.0	100,000	0.25 +0.3 /0
KSC401J 50SH	0.82 / 1.38	5,000,000	0.3 ± 0.15
KSC411J 70SH	1.05 / 1.75	1,000,000	0.35 ± 0.20
KSC421J 70SH	1.25 / 2.12	300,000	0.5 ± 0.25
KSC422J 70SH	1.25 / 2.12	1,000,000	0.5 ± 0.25
KSC441J 70SH	3.0 / 5.0	300,000	0.75 ± 0.25
KSC442J 70SH	3.0 / 5.0	1,000,000	0.75 ± 0.25
KSC621J	1.0 / 1.65	300,000	0.5 ± 0.2
KSC641J	2.25 / 3.75	300,000	0.5 ± 0.2
KSC721 J	1.7 / 2.8	300,000	0.3 ± 0.15
KSC741J	2.9 / 4.9	300,000	0.4 ± 0.20
KSC821JLFS	2.4 / 3.9	300,000	0.65 ± 0.2

A detect switch version is available KSC4D1J and KSC4D1G. Please see Detect chapter.

For other versions, please refer to KSC5, KSC9, KSC4V and KSC-ST datasheets.

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

DIELECTRIC STRENGTH (50 Hz, 1 min.): 250 V CONTACT RESISTANCE: $< 100 \ m\Omega$ INSULATION RESISTANCE (100 V): $> 10^{9} \Omega$

BOUNCE TIME: < 1 ms

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

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

Process

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

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

Packaging

KSC1, KSC2 and KSC3 are delivered on continuous tape and reels of 2,000 pieces, KSC4 in reels of 1,000 pieces. KSC 6 in reels of 750 pieces. KSC7 in reels of 1,000 pieces. Dimensions of reels according to EIA RS481 or IEC 60286-3. External diameter 330 mm ± 2 mm.

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

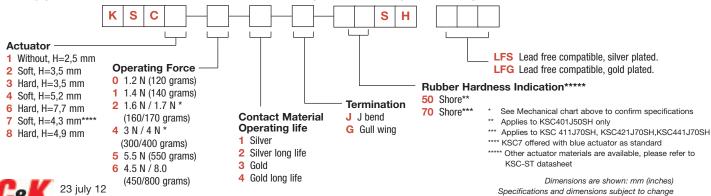
Other versions in terms of force, termination length and corrosion protection available. Please contact your sales representative.

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

How To Order

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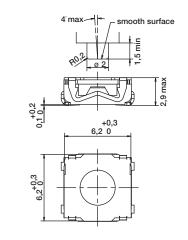
For any part number different from those listed above, please consult your local representative.



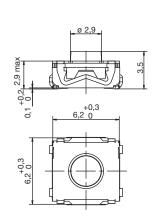
В

ACTUATOR

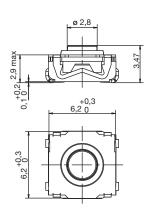
KSC1 WITHOUT, 2.5 mm HIGH



KSC2 SOFT, 3,5 mm HIGH

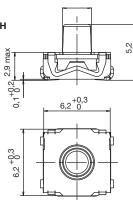


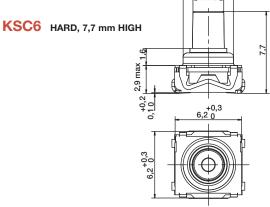
KSC3 HARD, 3,5 mm HIGH



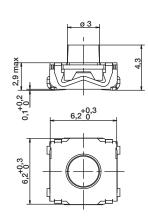
KSC4 SOFT, 5,2 mm HIGH

NOTE: Soft material available are silicon 50 SH / 70 SH and EPDM, please refer to KSC-ST datasheet.

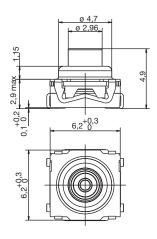




KSC7 SOFT, 4,3 mm HIGH, BLUE ACTUATOR



KSC8 HARD, 4,9 mm HIGH



First Angle Projection



OPTION CODE	OPERATING FORCE
0	1.2 N (120 grams)
1	1.4 N (140 grams)
2	1.6 N / 1.7 N (160/170 grams)
4	3 N / 4 N (300/400 grams)
5	5.5 N (550 grams)
6	4.5 N / 8 N (450/800 grams)

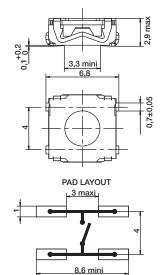
Tactile Switches

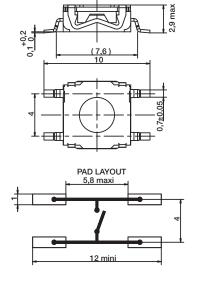
OPTION CODE	MATERIAL
1	SILVER
2	SILVER LONG LIFE
3	GOLD
4	GOLD LONG LIFE

TERMINATION -

J J BEND

G GULLWING

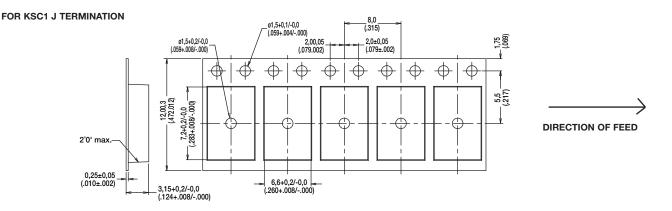






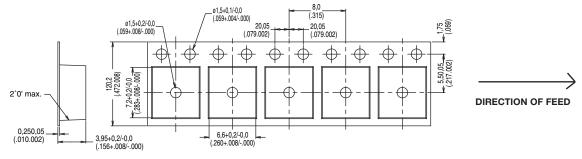
В

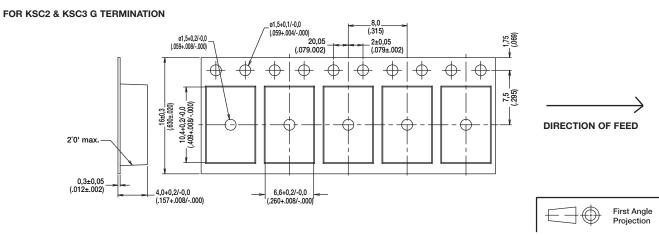
TAPE & REEL



FOR KSC1 G TERMINATION ø1,5+0,1/-0,0 (.059+.004/-.000) __8,0 __(.315) ø1,5+0,2/-0,0 (.059+.008/-.000) 1,75 (069) 2,0±0,05 (.079±.002) 2,0±0,05 (.079±.002) \oplus \oplus 7,5 295) 16,0±0,3 (.630±.012) 10,4+0,2/-0,0 **DIRECTION OF FEED** 2°0' max. -0,3±0,05 (.012±.002) 6,6+0,2/-0,0 (.260+.008/-.000) 3,2+0,2/-0,0 (.126+.008/-.000)

FOR KSC2 & KSC3 J TERMINATION





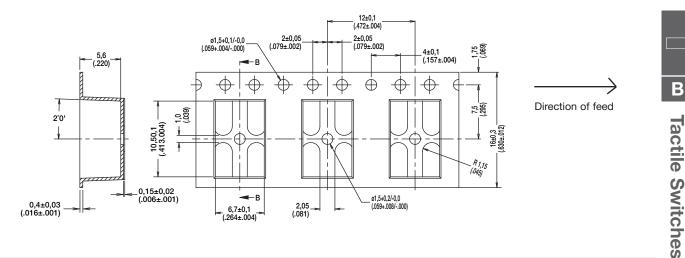


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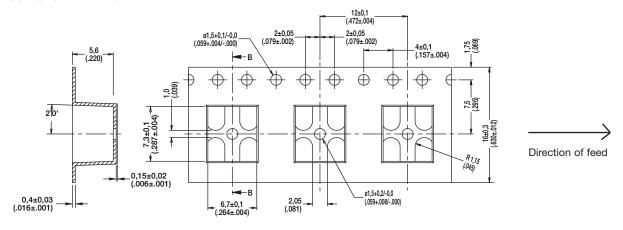
В

TAPE & REEL

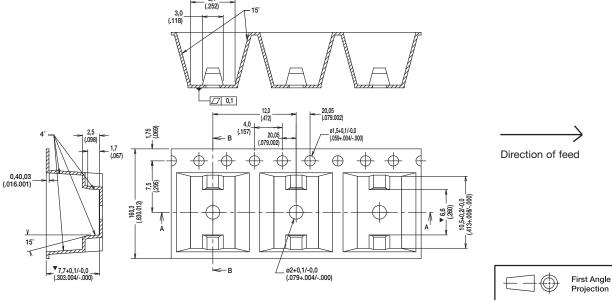
FOR KSC4 FOR G TERMINATION



FOR KSC4 FOR J TERMINATION



FOR KSC6 G & J TERMINATION



G&K

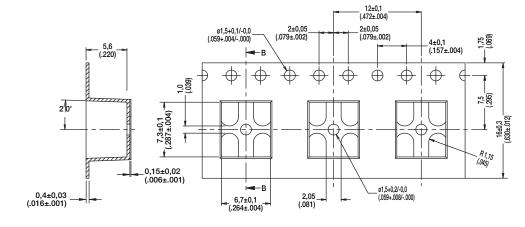
Dimensions are shown: mm (inches) Specifications and dimensions subject to change

23 july 12

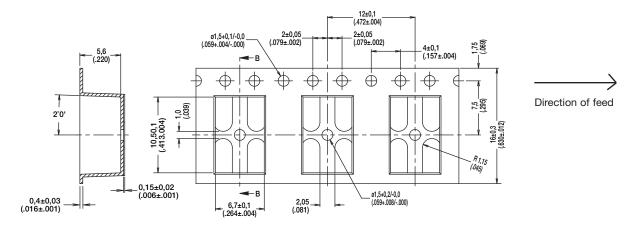
KSC Series Sealed Tact Switch for SMT

TAPE & REEL

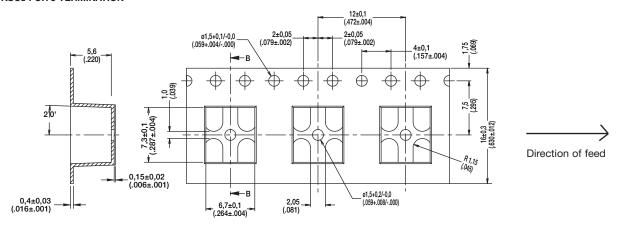
FOR KSC7 FOR J TERMINATION



FOR KSC8 FOR G TERMINATION



FOR KSC8 FOR J TERMINATION





First Angle Projection

Dimensions are shown: mm (inches) Specifications and dimensions subject to change



23 july 12 ———

KSC5 Series Tact Switch with Rocker Option for SMT



Features/Benefits

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

Typical Applications

- Automotive
- Computers
- Instrumentation



Specification

FUNCTION: Momentary action

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

TERMINALS: J bend & Gullwing type for SMT

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

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

CONTACT RESISTANCE: < 100 m Ω INSULATION RESISTANCE (100 V): > 10 $^9\Omega$

BOUNCE TIME: < 1 ms

Environmental

Silver

Gold

OPERATING TEMPERATURE: STORAGE TEMPERATURE:

-40°C to 85°C

-40°C to 125°C -55°C to 125°C

-55°C to 85°C

33 0 10 123

Process

SOLDERING: Infrared reflow in accordance with IEC61760-1

Packaging

Switches delivered on continuous tape & reels of 1,000 pieces, 330 (12.992) external diameter. Other dimensions according to EIA-RS-481/ IEC 60286-3 standard.

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.

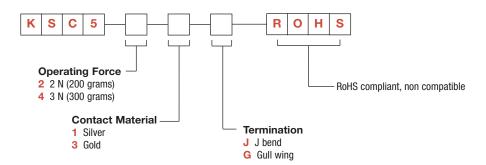
Mechanical

	Operating force	Operating force	Travel to	Travel to		
	axial FA	lateral FL	make	make	Life expectancy	Life expectancy
Type	N (grams) ±25%	N (grams) ±30%	axial (mm)	lateral (mm)	cycles, axial	cycles, lateral
KSC521G	1,5 - 2,5	1,2 - 2,6	$0,25 \pm 0,15$	0.5 ± 0.25	100,000	10,000
KSC541G	2,25 - 3,75	1,8 - 3,8	$0,25 \pm 0,15$	$0,5 \pm 0,25$	100,000	10,000

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.



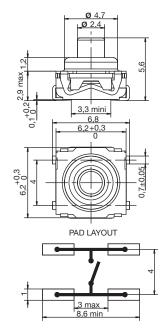


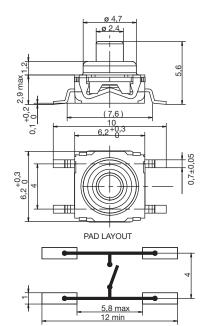
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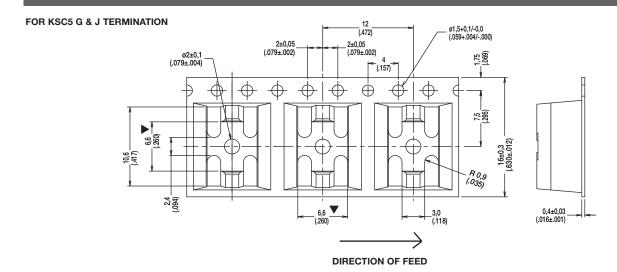


Tactile Switches





TAPE & REEL







KSC-ST Series Sound Tunable Tact Switch

Features/Benefits

- Various haptic responses
- Range of 2 sound intensity
- J or G terminations
- Tape & reel
- IP 67

Typical Applications

- Automotive
- Industrial electronics
- Keyboards
- Medical equipment



Specification

FUNCTION: momentary action

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

TERMINALS: J bend & Gullwing type for SMT

Mechanical

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

OPERATING LIFE:

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

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

Note for ST2 versions: This actuator contains carbon particles and therefore is electrically conductive. Please consult factory for list of compatible materials to be used while designing button on top of the switch.

Other versions in terms of force, termination length and corrosion protection are 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 (50 Hz, 1 min.): 250 V CONTACT RESISTANCE: < 100 m Ω INSULATION RESISTANCE (100 V): > 10 $^{\circ}\Omega$

BOUNCE TIME: < 1 ms

*Ultra low current available at 1µA upon request

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

Process

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

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

Packaging

In reels of 1,000 pieces.

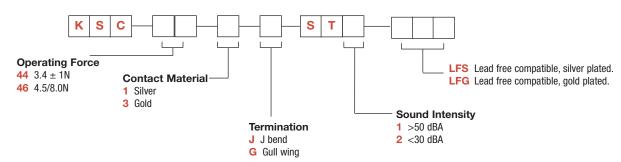
Dimensions of reels according to EIA RS481 or IEC 60286-3. External diameter 330 mm \pm 2 mm.

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

How To Order

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

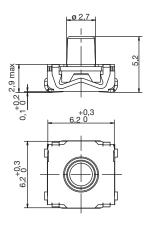
For any part number different from those listed above, please consult your local representative.





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ACTUATOR

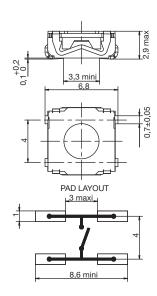


CONTACT MATERIAL

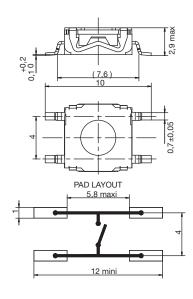
OPTION CODE	MATERIAL
1	SILVER
3	GOLD

TERMINATION

J J BEND



G GULLWING





First Angle Projection

Dimensions are shown: mm (inches)

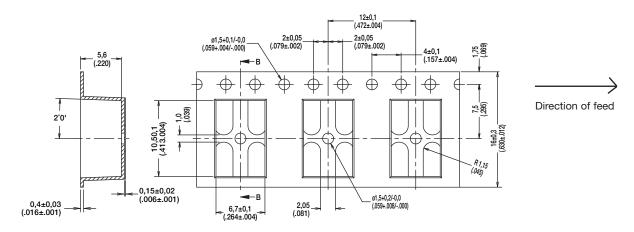


OPTION CODE	SOUND INTENSITY
ST1	>50 dBA
ST2	<30 dBA

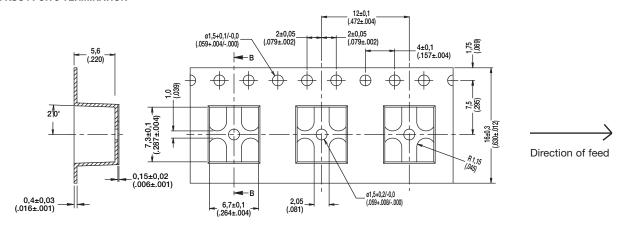
Tactile Switches

TAPE & REEL

FOR KSC4 FOR G TERMINATION



FOR KSC4 FOR J TERMINATION







KSC4V2 Series Side Actuated Sealed Tact Switch

Features/Benefits

- Full SMD side actuated
- Haptic adaptability
- Pin in paste terminations
- Tape & reel
- IP 67

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

Туре	Force (N)	Operating Life (operations)	Travel (mm)
KSC441V2SPDLFS	3.5 ± 1.0	300,000	0.7 ± 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	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: < 1 ms

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

Process

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

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

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.

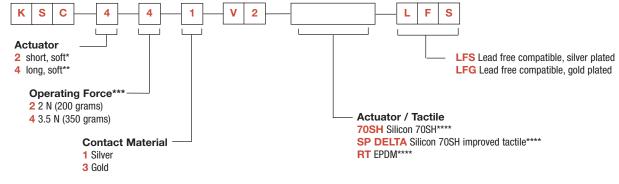
Dimensions of reels according to EIA RS481 or IEC 2863. External diameter 330 mm ± 2 mm.

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.

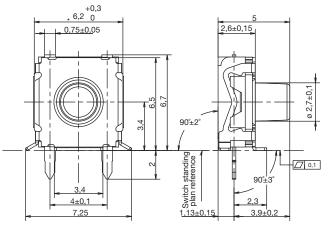
For any part number different from those listed above, please consult your local representative.

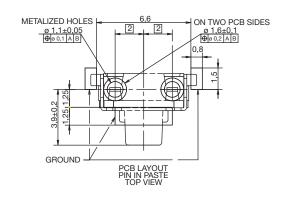


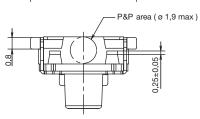
- * KSC2 version available upon demand
- ** KSC4 available as KSC441V2 SP DELTA LFS for product launch *** Force available upon demand (variant version)
- **** Available for KSC4 only



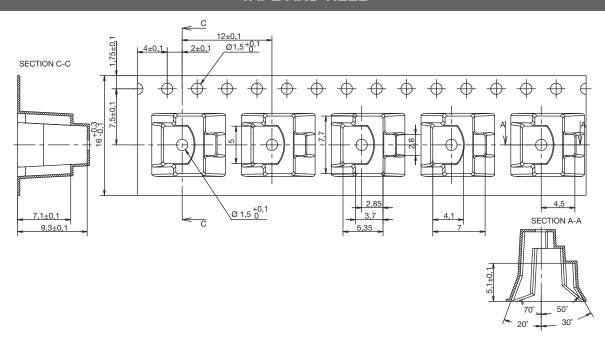
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TAPE AND REEL



INTEGRATION





Dimensions are shown: mm Specifications and dimensions subject to change



24 jan 13

KSC9 Series SMD Sealed Tact Switch for Adjustable Height

Features/Benefits

- SMD switch
- Adjustable height with buttons
- Overload resistance
- Tape & reel
- IP 67

Typical Applications

- Industrial electronics
- Network equipment
- Telecommunications



Specification

FUNCTION: momentary action

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

TERMINALS: J bend or Gullwing type for SMT

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

Mechanical

Туре	Force (N)	Operating Life (operations)	Travel (mm)
KSC921J LFS	1.7 ± 0.5	300,000	0.4 ± 0.2
KSC931J LFS	2.55 ± 0.65	300,000	0.4 ± 0.2
KSC941J LFS	3.4 ± 0.85	300,000	0.4 ± 0.2

BUTTON INSETION OVERLOAD: 40N

BUTTON RETENTION FORCE: 7N min between -40°C/+85°C

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): $> 10^9 \Omega$

BOUNCE TIME: < 1 ms

Environmental

Silver

Gold

OPERATING TEMPERATURE: STORAGE TEMPERATURE:

-40°C to 85°C

-40°C to 125°C

-55°C to 85°C -55°C to 125°C

Process

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

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

Packaging

In reels of 750 pieces.

Dimensions of reels according to EIA RS481 or IEC 2863.

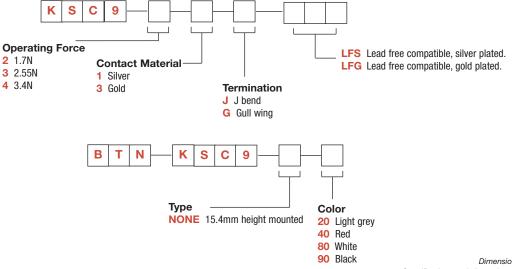
External diameter 330 mm ± 2 mm.

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.

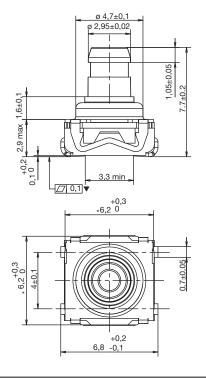
How To Order

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.

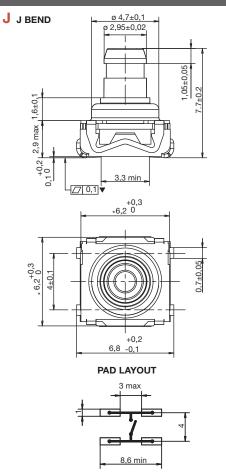
For any part number different from those listed above, please consult your local representative.

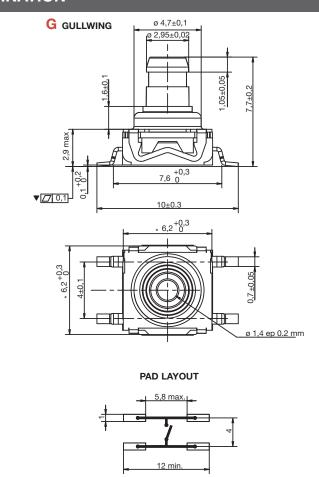




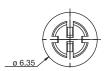


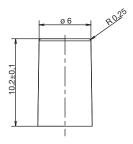
TERMINATION



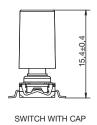




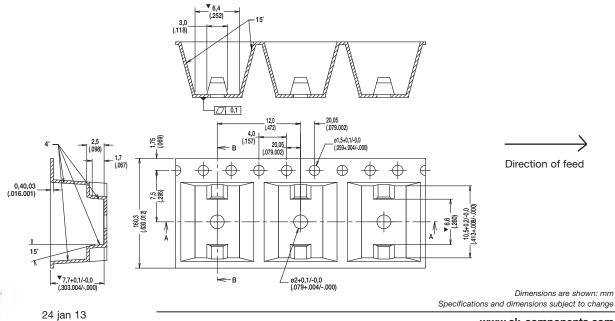




INTEGRATION



TAPE AND REEL





B-48

Features/Benefits

- Low profile
- Cost efficient
- J or G terminations
- Tape and reel
- IP 67

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

	Operating		
Type	Force FA	Operating	Travel
	(Newtons)	Life	(mm)
	Min. Max.	Operations	
KSEM31JLFS	1.5 ± 0.5	300,000	0.3 + 0.1/-0.2
KSEM31GLFS	1.5 ± 0.5	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 m $\!\Omega$ INSULATION RESISTANCE: (100 V): > 10 $\!^{\rm o}$ $\!\Omega$

BOUNCE TIME: < 1 ms

Environmental

OPERATING TEMPERATURE: -40°C to 85°C STORAGE TEMPERATURE: -50°C to 85°C

Process

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

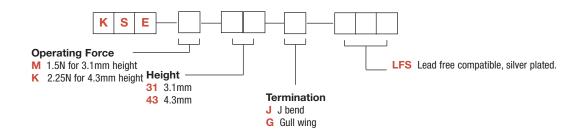
- Cleaning according to typical washing processes.
- Infrared Reflow Soldering in accordance with IEC 61760-1.

NOTE:

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

How To Order

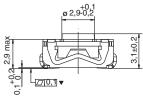
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

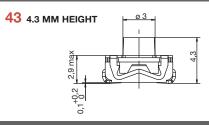




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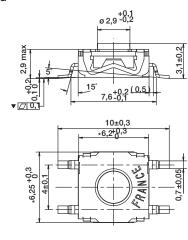


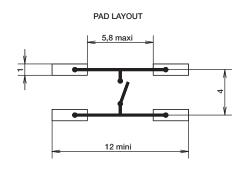




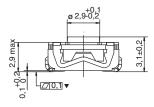
TERMINATION

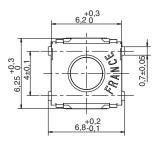
G GULLWING

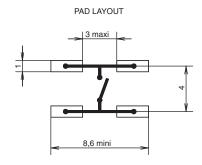




J J BEND



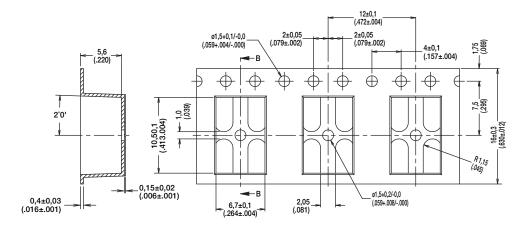




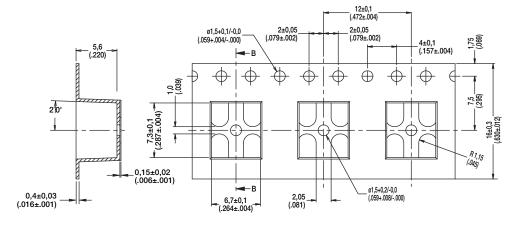


4.3 mm height

G TERMINATION



J TERMINATION



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____fi

В

Right Angle Sealed Tact Switch for SMT



Features/Benefits

- High shear force with extended bracket
- Easy to pick & place with top plate tab
- Rubber or hard plastic actuator
- Press fit or snap fit caps
- IP 57
- RoHS compliant and compatible

Typical Applications

- Telecommunications
- Computer products
- Instrumentation
- Power supply

Specification

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

Electrical

CONTACT RATING: 1.0 VA max. @ 32 V AC or DC max. ELECTRICAL & MECHANICAL LIFE: 100,000 make-and-break cycles at full load.

DIELECTRIC STRENGTH: 250 Vrms min. @ sea level. CONTACT RESISTANCE: Below 50 m Ω typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: $10^9 \Omega$ min.

Environmental

OPERATING TEMPERATURE: -40°C to 90°C

Process

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

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

Packaging

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

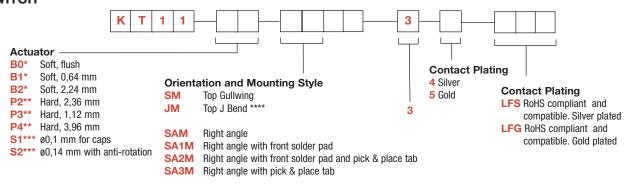
NOTE: Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

How To Order

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

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

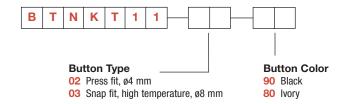
SWITCH



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

BUTTON

To order buttons in bulk





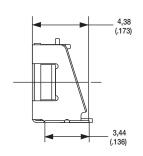
^{**} P2, P3, P4 actuators suitable with A1 & A2 mounting bracket only.

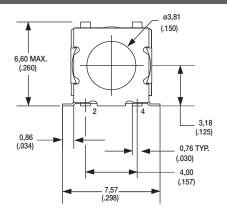
^{***} S1 & S2 available with A1 & A2 mounting bracket only.

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

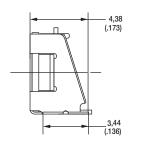
SERIES -----

KT11



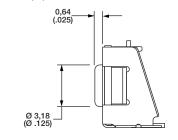


BO SOFT, FLUSH*

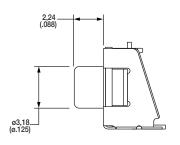




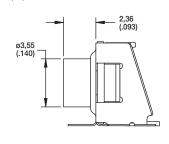
ACTUATOR



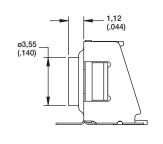
B2 SOFT, 2,24 mm*



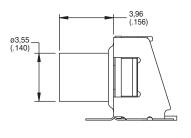
P2 HARD, 2,36 mm



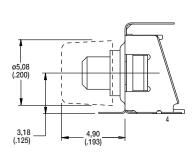
P3 HARD, 1,12 mm



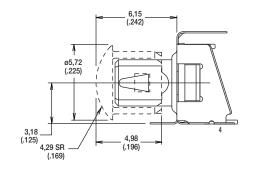
P4 HARD, 3,96 mm**



S1 Ø0,1 mm FOR PRESS FIT CAPS***



S2 Ø0,14 mm FOR SNAP FIT CAPS***





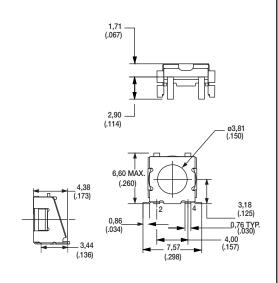
First Angle Projection

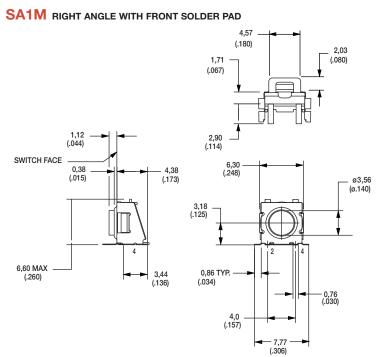


SM TOP GULLWING

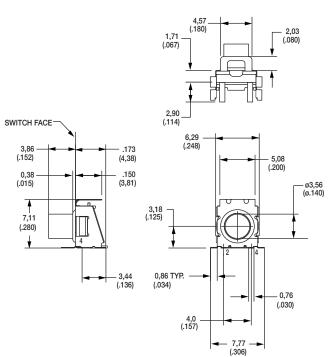
JM TOP J BEND

SAM RIGHT ANGLE

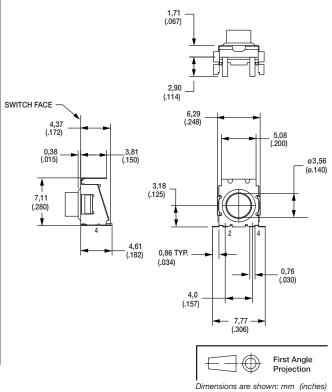




SA2M RIGHT ANGLE WITH FRONT SOLDER PAD AND PICK & PLACE TAB



SA3M RIGHT ANGLE WITH PICK & PLACE TAB

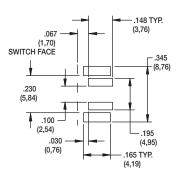




Specifications and dimensions subject to change

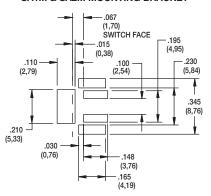
MOUNTING BRACKET

PAD LAYOUT
SAM & SA3M MOUNTING BRACKET



PAD LAYOUT SA1M & SA2M MOUNTING BRACKET

T-0-0-0-0



B

CONTACT PLATING

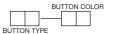
OPTION CODE	MATERIAL
4	SILVER
5	GOLD

BUTTON

BUTTON

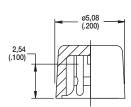
To order buttons in bulk

B T N K T 1 1

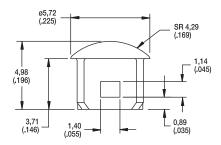


Button Type

02 PRESS FIT, Ø4 mm



03 SNAP FIT, HIGH TEMPERATURE, Ø8 mm



Button Color

OPTION CODE	BUTTON COLOR
90	BLACK
80	IVORY



Dimensions are shown: mm (inches) Specifications and dimensions subject to change



ומכנות סייונים וי

KST Series Long Travel Tact Switch for SMT

Features/Benefits

- Rubber actuator
- Silver contact material
- J or G terminals
- Compatible with pick and place machines
- IP 40 sealed
- RoHS compliant and compatible

Typical Applications

- Front panel
- Car dashboards
- Telephone set
- Instrumentation



Specification

FUNCTION: Momentary

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

TERMINALS: J Bend or Gullwing type for SMT

Mechanical

MAXIMUM APPLIED FORCE: 40 N (400 grams)*

* Valid one time. Maximum allowed travel to avoid overload issues is 1.75mm

	Operating force	Operating life	Travel to
Туре	Fa N (grams)±30%	(operations)	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 IFC 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	Silver	Gold
SWITCHING POWER MAX.:	1.0 VA	0.50 VA
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	1 mA

DIELECTRIC STRENGTH: $\geq 250 \text{ Vrms}$ CONTACT RESISTANCE: $< 100 \text{m}\Omega$

INSULATION RESISTANCE: Initial measurement: $\geq 1G\Omega$

 $\label{eq:angle-poly-state} \mbox{After damp heat:} \geq 10 M \Omega \\ \mbox{BOUNCE TIME:} \ < 5 \ \mbox{ms}$

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

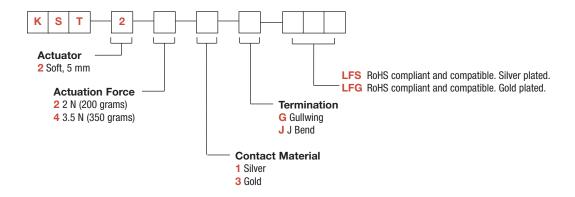
Compatible with the lead free reflow soldering process.

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

How To Order

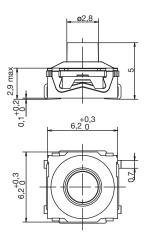
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.

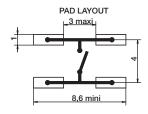
However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.



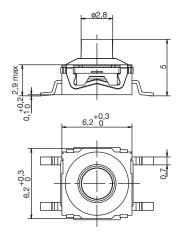


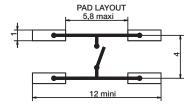
J J BEND



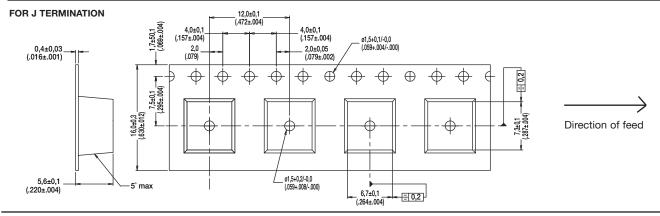


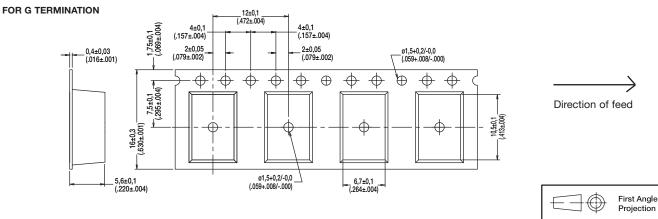
G GULLWING





TAPE & REEL





C&K

Features

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

Typical Applications

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



Specification

FUNCTION: momentary action

CONTACT ARRANGEMENT: Normally Open

TERMINALS: SMT with positioning pegs as an option

Mechanical

	Operating force	Operating	Travel (total
	FA1 Newtons	life	travel)
Туре	(grams)	(operations)	mm(mm)
K5AT WH 43GP	4.0 (400)	100,000	0,5 (0.8)

 $^{^{1}}$ Tolerances of operating force FA is \pm 25%.

Packaging

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

Electrical

POWER MIN/MAX: 0.02VA / 1.0VA VOLTAGE MIN/MAX: 20mVdc - 32 Vdc CURRENT MIN/MAX: 0.1mA - 100mA CONTACT RESISTANCE: <100m Ω

INSULATION RESISTANCE: >1G Ω initial, >10M Ω after damp heat

BOUNCE TIME: <10ms

Environmental

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

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

PROTECTION: dust protection and flux tight (IP 40)

OVERLOAD: 40N min

Process

SOLDERING: Compatible with the lead free soldering profile.

No washing

Materials

LEAD FREE

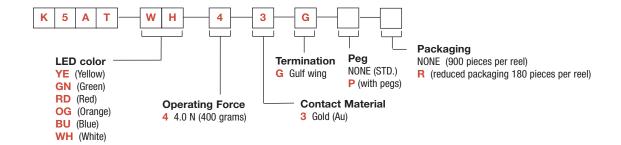
CONTACTS: Au over Ni SOLDERING: Au over Ni

HOUSING: Thermoplastic UL94 VO

LED: type P-LCC-2

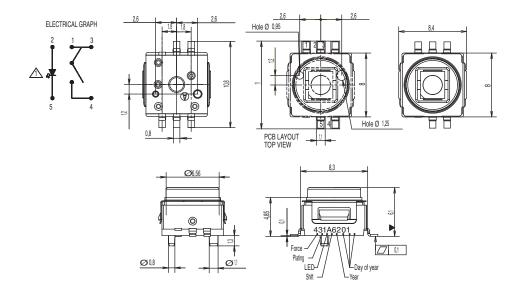
How To Order

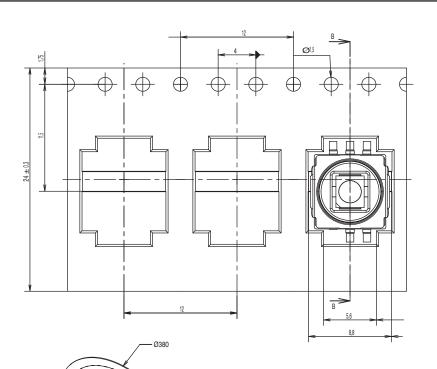
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.

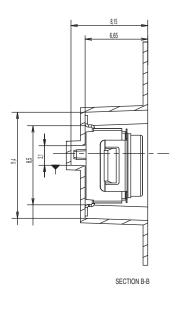




K5AT









Dimensions are shown: mm (inches) Specifications and dimensions subject to change



23 july 12

NEW

Lighted SMT Tact Switch with Rugged LED Mounting Process

Features

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

Typical Applications

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



Specification

FUNCTION: momentary action

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

Mechanical

	Actuation	Operating	Total
	Force	Life	Travel
Туре	(N)	(operations)	(mm)
K8xx21G LFS	2.5	300,000	0.45±0.15
K8xx41G LFS	4.0	300,000	0.45±0.15

Tolerances on actuation force is \pm 0.25%.

SEALING LEVEL: IP40

Illumination Colors

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

Packaging

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

Electrical	Silver	Gold
MAXIMUM POWER:	1.0 VA	0.2 VA
MAXIMUM VOLTAGE:	32 VDC	32 VDC
MINIMUM VOLTAGE:	20 mV	20 mV
MAXIMUM CURRENT:	50 mA	10 mA
MINIMUM CURRENT:	1 mA	0.1 mA

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

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

INSULATION RESISTANCE: (100 V, inital stage) > $10^9\Omega$

BOUNCE TIME: < 10 ms

Environmental

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

-40°C to +125°C (Gold)

STORAGE TEMPERATURE: -55°C to +85°C (Silver)

-40°C to +125°C (Gold)

Process

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

- Cleaning according to typical washing processes
- Infrared reflow soldering in accordance with IEC61760-1 MSL level: 1

NOTE:

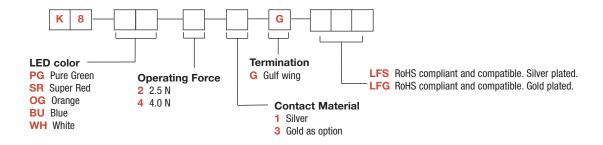
The specifications show in the datasheet are for reference only and are not valid for design-in work. Please contact your sales representative to request drawings and product specifications.

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

Product in mass production in Q2/2013.

How To Order

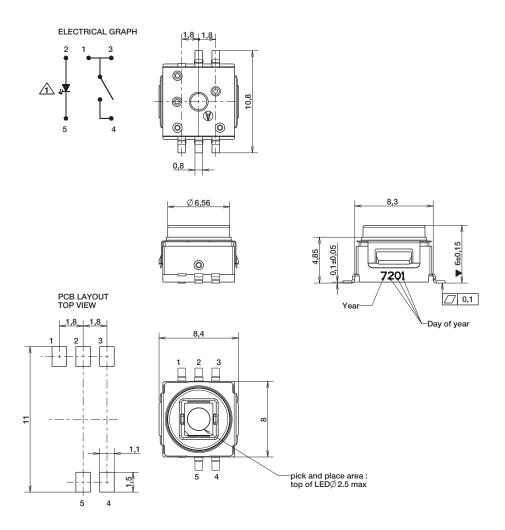
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.





NEW! **Lighted SMT Tact Switch with Rugged LED Mounting Process**

PART NUMBER	REF LED	EMITTED COLOR	LUMINOUS (mcd) If =	INTENSITY 20 mA	CHROMATOORDINA	TES OR LENGTH		WARD AGE V MA
			min	typ	X	Y	min	max
K8WH41G	LW T67C-S2U1-5K8L	WHITE	224	560	0,33	0,33	3	4
K8BU41G	LB T67C-P2R1-35	BLUE	56	140	465	nm	3	4.1
K8PG41G	LP T676-L1M2-25	PURE GREEN	11.2	28	562	nm	1.8	2.4
K8SR41G	LP T676-Q1R2-1	SUPER RED	71	180	645	nm	1.8	2.3
K8OG41G	LO T676-R1S2-24	ORANGE	112	280	610	nm	1.85	2.35









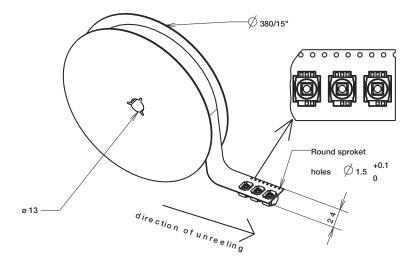
Lighted SMT Tact Switch with Rugged LED Mounting Process

TAPE & REEL











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: SMT with positioning pegs

Mechanical

	Operating force	Operating	Travel (total
	FA1 Newtons	life	travel)
Version	(grams)	(operations)	mm(mm)
THT, SMT, PM	4.0 (400)	25,000	1.2 (2.4)

¹ Tolerances of operating force FA is ± 25%.

Packaging

THT:

60 pieces per tray; 300 pieces per box

SMT:

330 pieces per reel (reel ø 360mm)

PM:

60 pieces per tray; 300 pieces per box

LED Characteristics

LED COLOR: White TEST CONDITIONS: 20 mA

LUMINOUS INTENSITY IF = 20 mA

MIN. 110 mcd TYP. 220 mcd MAX. 320 mcd

MAX VOLTAGE: 4 V

Electrical

POWER MIN/MAX: 0.02VA / 1.0VA VOLTAGE MIN/MAX: 20mVdc – 32 Vdc CURRENT MIN/MAX: 0.1mA – 100mA CONTACT RESISTANCE: <150m Ω

INSULATION RESISTANCE: >1G Ω initial, >10M Ω after damp heat

BOUNCE TIME: <5ms

Environmental

OPERATING TEMPERATURE: -40°C to 85°C STORAGE TEMPERATURE: -50°C to 85°C

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

PROTECTION: dust protection and flux tight

OVERLOAD: 40N min

Process

SMT

Soldering: Compatible with the lead free soldering profile No washing

THT

Soldering: Compatible with the lead free soldering profile No washing

РМ

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

Materials

LEAD FREE

CONTACTS: Au over Ni SOLDERING: Au over Ni

HOUSING: Thermoplastic UL94 HB

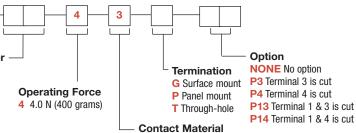
How To Order

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

Actuator

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

 5 with snap-ins, light grey for light pipe extension (SMT version only)
- Actuator color/LED color
 CL Transparent/No LED
 90 Black Actuator/No LED
- YE Translucid/Yellow
 GN Translucid/Green
- RD Translucid/Red
- OG Translucid/Orange
 BU Translucid/Blue
- WH Translucid/White
 YG Translucid/Yellow-Green
- RG Translucid/Red-Green
- BA Blue/Amber
- WL White (low luminosity)



3 Gold (Au)

Dimensions are shown: mm (inches)
Specifications and dimensions subject to change

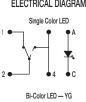


16 july 12

K5V SMT

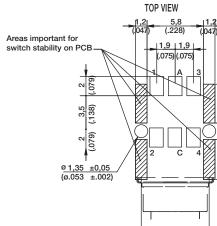
3,9 (.079x.047) 0,4 (.016) 8,4 (.331) 4,7 (.185) (.157)









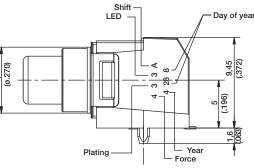


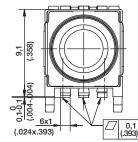
RECOMMENDED PCB LAYOUT (WITH HOLES)

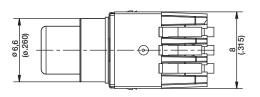
1,4 (.055)

(.276)

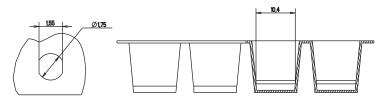
4,2 (.165) 0,85 (.033)

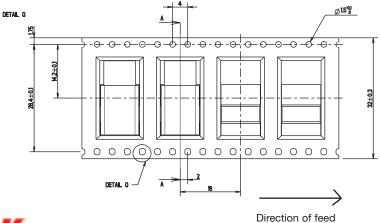


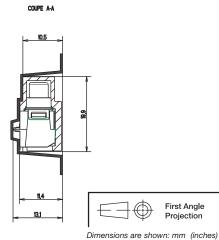




TAPE & REEL







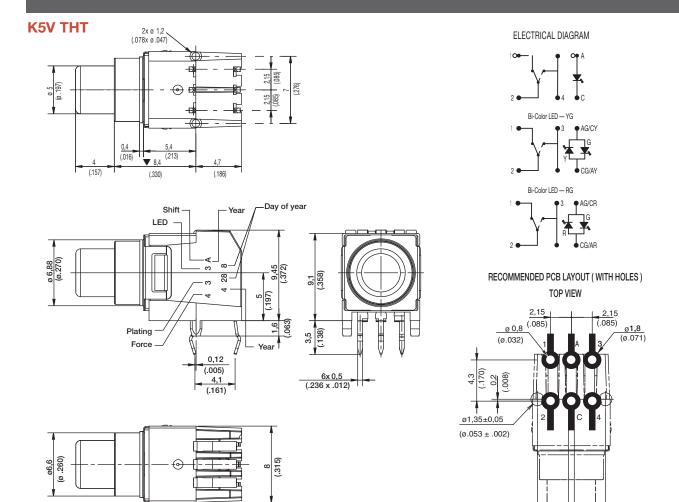
Dimensions are shown: mm (inches) Specifications and dimensions subject to change



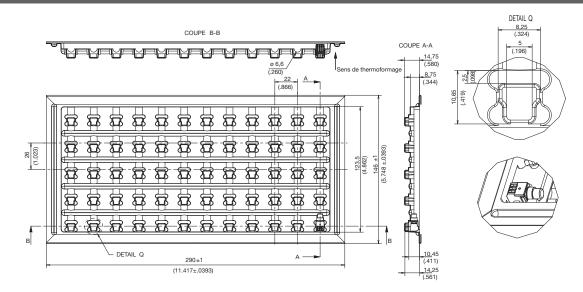
16 july 12

F)

Illuminated Tact Switch



TRAY





Dimensions are shown: mm (inches) Specifications and dimensions subject to change

0,6 (.024) (.280)

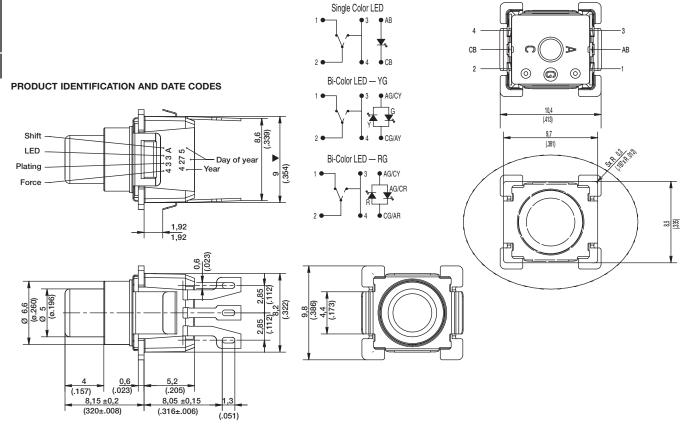
Illuminated Tact Switch

K₅V PM

____i

В

Tactile Switches

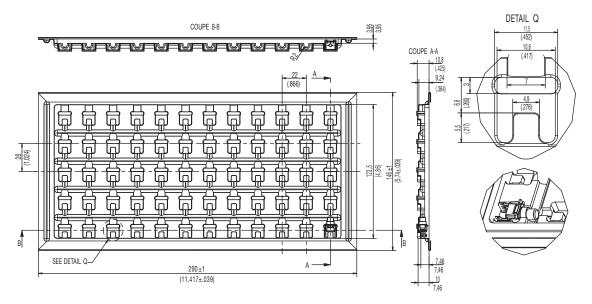


ELECTRICAL DIAGRAM

TERMINAL REFERENCES

TRAY

SUITABLE FOR PANEL THICKNESS OF 1.8MM MAX





Features/Benefits



Sealed front end

Top and side actuated

Typical Applications

- Low profile keyboards
- Automotive interfaces
- Industrial control

Specification

FUNCTION: momentary action

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

TERMINALS: THT pins

Mechanical

	Force	Operating life	Travel
Туре	(N)	(operations)	(mm)
KSF0M211LFT	1.5 ± 0.5	100,000	0.25 ± 0.1
KSF0M311LFT	1.9 ± 0.5	100,000	0.25 ± 0.1
KSF0M411LFT	3.0 ± 0.75	100,000	0.25 ± 0.1
KSF0M511LFT	5.2 ± 1.0	100,000	0.25 ± 0.1
KSF0M91170SH LFT	3.4 ± 1.5	100,000	0.65 ± 0.25
KSF0M212 LFT	1.6 ± 0.4	300,000	0.25 ± 0.1
KSF0M412 70SHLFT	3.2 ± 0.8	100,000	0.75 ± 0.25

Overload resistance: 40N, 1 time

Sealing: IP 60 or IP67

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): $\leq 10^{9} \Omega$

BOUNCE TIME: < 1 ms

EnvironmentalSilver
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

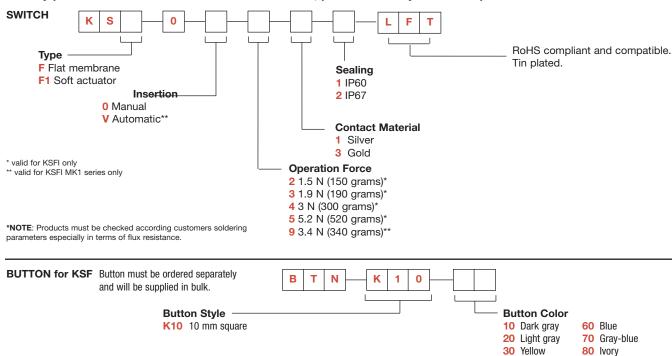
Packaging

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.



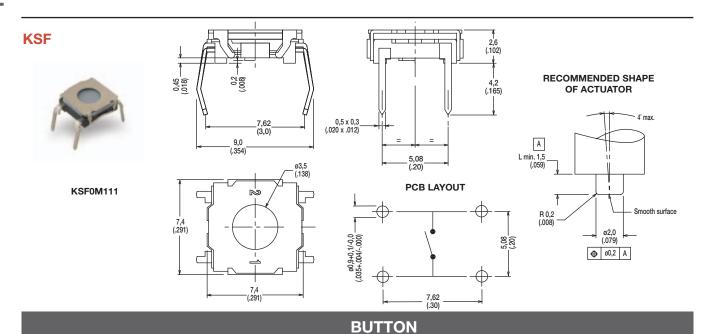


Dimensions are shown: mm (inches)
Specifications and dimensions subject to change

90 Black

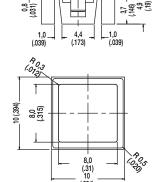
40 Red

50 Green



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









B

Features/Benefits

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

Typical Applications

- **Automotive**
- Industrial
- Telecommunication networks



Specification

CONTACT ARRANGEMENT: SPST, N.O. DOUBLE OVERMOLDING ON TERMINAL

SEALING: IP60

TERMINALS: PC pins, ground pin optional

Mechanical

	Actuation force	Operating life	Travel to
Туре	N	(operations)	make
KSA0M211	1 - 1,8	100,000	$0,5 \pm 0,2$
KSA0M311	1 - 1,8	1,000,000	0.5 ± 0.2
KSA0M411	2,25 - 3,75	100,000	$0,6 \pm 0,2$
KSA0M511	3,5 - 6,5	100,000	0.7 ± 0.2
KSA0M911	2,25 - 3,75	500,000	$0,6 \pm 0,2$
KSL0M211	1 - 1,8	100,000	0.5 ± 0.2
KSL0M311	1 - 1,8	1,000,000	$0,5 \pm 0,2$
KSL0M411	2,25 - 3,75	100,000	$0,6 \pm 0,2$
KSL0M511	3,5 - 6,5	100,000	0.7 ± 0.2
KSL0M911	2,25 - 3,75	500,000	$0,6 \pm 0,2$

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
DIEL FOTDIO OTDELLOTLI COCLI		

DIELECTRIC STRENGTH: 300 Vrms CONTACT RESISTANCE: $< 100 \text{m} \ \Omega$ INSULATION RESISTANCE (100 V): $> 10^9 \Omega$

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.

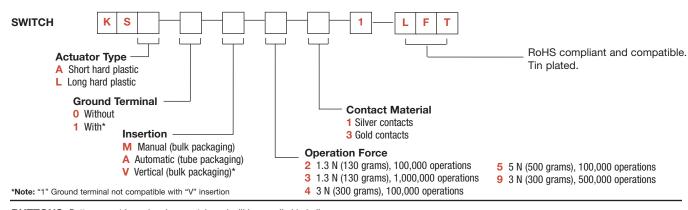
Packaging

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).

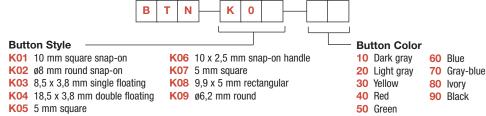
How To Order

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.



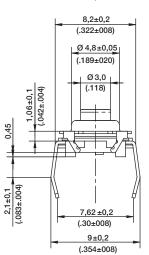
*NOTE: Please note that all buttons are not RoHS compliant. Please check the compliance with your C&K sales representative.

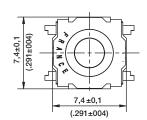


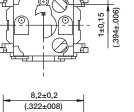
Tactile Switches



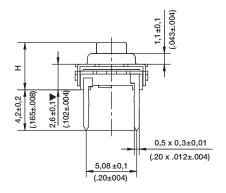






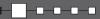


ACTUATOR TYPE



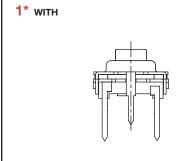
Туре	H mm	inch
KSA	4,7±0,2	(.185)
KSL	$9,9\pm0,2$	(.390)

GROUND TERMINAL



0 without





*Not compatible with "V" insertion

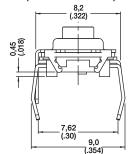


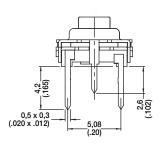
First Angle



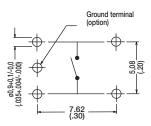
INSERTION ----0-0-0

MANUAL (BULK PACKAGING)





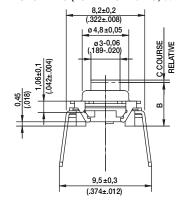
PCB LAYOUT

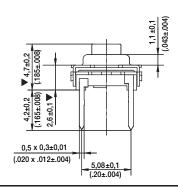


'n

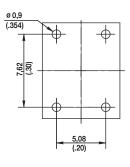
В

A AUTOMATIC (TUBE PACKAGING, 65 PIECES PER TUBE)

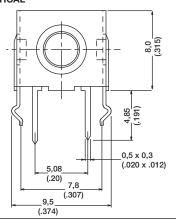


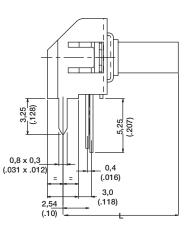


PCB LAYOUT

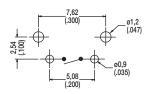


V VERTICAL





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



CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL
1	Silver contacts
3	Gold contacts

SEALING -----

OPTION CODE	SEALING
1	Sealing level IP60

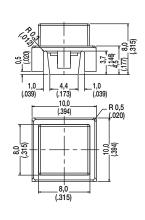
BUTTONS

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

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

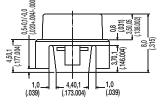
K01

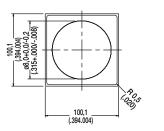




K02









First Angle

Dimensions are shown: mm (inches)



KSA & KSL Series Sealed Tact Switch



KSA & KSL MKII Series High Performance Sealed Tact Switch

Features/Benefits

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

Typical Applications

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



Specification

CONTACT ARRANGEMENT: SPST, N.O.

TERMINALS: PC pins SEALING: IP67

Double overmold on terminals

Mechanical

	Actuation force	Operating life	Travel to
Type	N (grams)	(operations)	make
KSA0M212	1,0 - 1,65	100,000	0.5 ± 0.15
KSA0M312	1,0 - 1,65	1,000,000	0.5 ± 0.15
KSA0M412	2,75 - 3,75	100,000	$0,6 \pm 0,25$
KSA0M512	3,75 - 6,25	100,000	0.7 ± 0.25

Packaging

Delivered in boxes of 500 pieces for manual insertion (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: 300 Vrms CONTACT RESISTANCE: < 100m Ω INSULATION RESISTANCE (100 V): > $10^9~\Omega$

BOUNCE TIME: 1 ms

OPERATING TEMPERATURE:

STORAGE TEMPERATURE:

Environmental Silver

Gold

-40°C to 85°C -40°C to 125°C -40°C to 85°C -55°C to 125°C

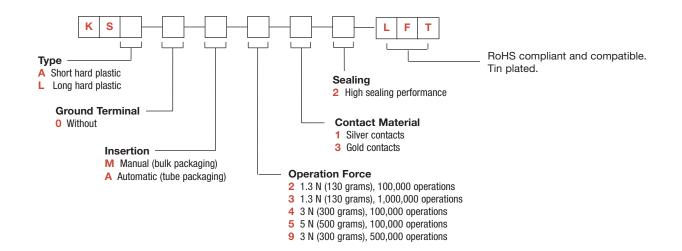
Process

Wave soldering compatible with lead free soldering profile.

How To Order

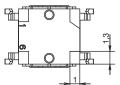
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.

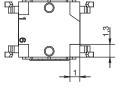
However, please note that all the combinations of these options are not feasible. For any part number different from those listed above, please consult your local representative.



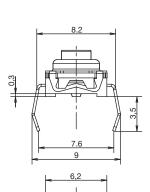


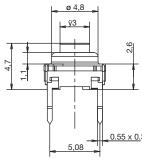
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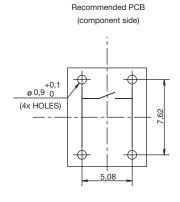






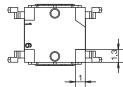


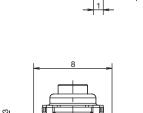


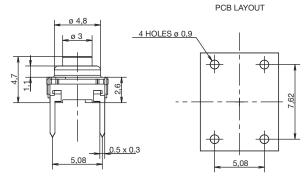


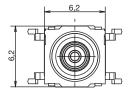
KSA & KSL

AUTOMATIC INSERTION











KSJ Series Spherical Actuator Tact Switches

Features/Benefits

- Spherical actuator allows actuation force off center ± 30° with regard to vertical
- RoHS compliant and compatible
- Designed for mechanisms

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: STORAGE TEMPERATURE:

-40°C to 85°C -40°C to 85°C -40°C to 125°C -55°C to 125°C

Packaging

Delivered in boxes of 500 pieces.

Mechanical

		Operating life	Operating life	
Type	Actuation force	(operations)	(operations)	Travel to
	N (grams)	axial	radial	make (mm)
KSJ0M21160SH	1,5 - 2,5	100,000	30,000	0.6 ± 0.3
KSJ0M41180SH	2,47 - 4,12	100,000	30,000	$0,55 \pm 0,25$
KSJ0M21180SH	1,5 -2,5	100,000	30,000	$0,35 \pm 0,2$
KSJ0M91180SH	3,1 -4,7	100,000	30,000	0.7 ± 0.25

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

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

CONTACT RESISTANCE: ≤100mOhms INSULATION RESISTANCE (100V): > 10° 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.

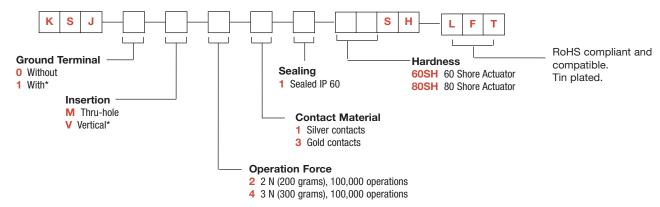
This data sheet does not provide enough information for applications which require a certain level of quality or safety such as automotive, medical systems, safety equipment. Please contact your sales representative to get contractual specification package.

How To Order

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

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

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

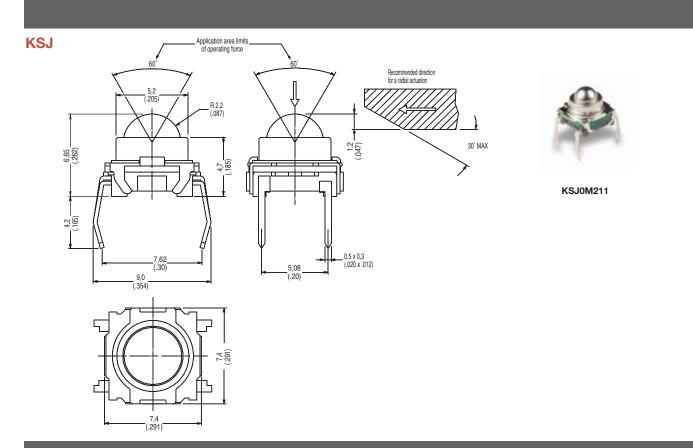


*Note: "1" ground terminal option not available with "V" version. The bracket for the "V" version plays this role.

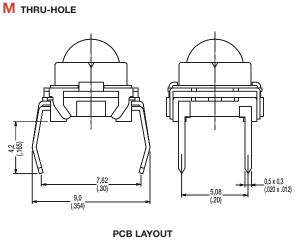


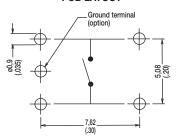
^{*} Please contact your C&K represenative for any question regarding the product intergration.

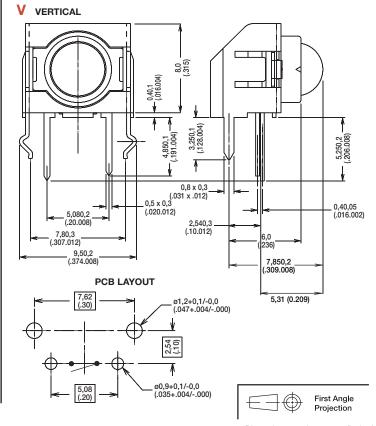
KSJ Series Spherical Actuator Tact Switches



INSERTION











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 m Ω max. initial. INSULATION RESISTANCE: 10" Ω min.

Environmental

OPERATING TEMPERATURE: -40°C to 60°C

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

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

Process

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

Materials

BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0).

ACTUATOR: 6/6 nylon or polyacetal (UL 94HB).

COVER PLATE: PTS635S and PTS635V models: Tin plated

stainless steel

DOME CONTACTS: Phosphor bronze, silver clad. STATIONARY CONTACTS: Brass, silver plated. TERMINALS: Brass, silver plated. Insert molded.

Packaging

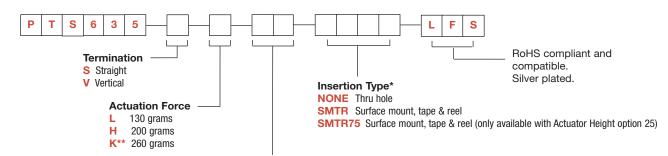
Bulk packaging.

Tape & reel for:

PTS635Sx43SMTR, 1700 pcs per reel PTS635Sx25SMTR, 3000 pcs per reel

How To Order

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



Actuator Height to PCB / Ground Pin

25 2,5 (.098), SMT

43 4,3 (.169), Thru-hole and SMT

50 5,0 (.197), Thru-hole

31 3,15 (.124), Vertical

39 3,85 (.151), Vertical

^{**} Only for the PTS635Sx25SMTR.



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^{*} SMTR only available with PTS635 43 and 25 Actuator Height options.

2,4 8,50,5 (.093) (.335.020)

1,0 2x (.039)

0,3 2x (.012)

5,0 (.197)

____fi

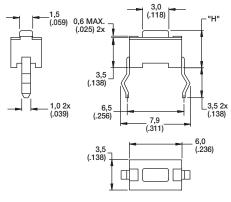
В

0,5 2x (.020)

Tactile Switches

SERIES

PTS635



For "H" dimension please refer to chart on page B-66

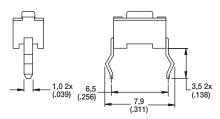
7,0 (.276) 2,5 2x (.098) 7,3 (.287) 0,6 MAX. (.025) 2x 3,0 (.118) For "L" dimension please refer to chart on page B-66

0,3 2x (.012)

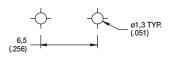
-0-0-00-000

TERMINATION

S STRAIGHT

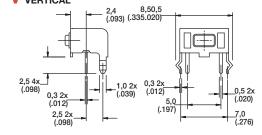


PCB LAYOUT



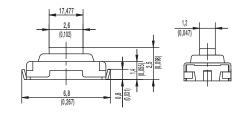
V VERTICAL

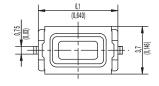
1,6 _ (.063) _ 2,5 _ (.098) _ _ (.169) _ _ _



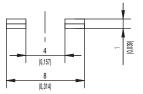
PCB LAYOUT ø1,3 2x (.051) ø1,0 2x (.039) 5,0 (.197) 7,0 (.276)

SMT 25

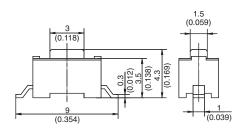




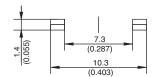
PCB LAYOUT



SMT 43



PCB LAYOUT







ACTUATION FORCE

_-----

** Only for the PTS635Sx25SMTR.

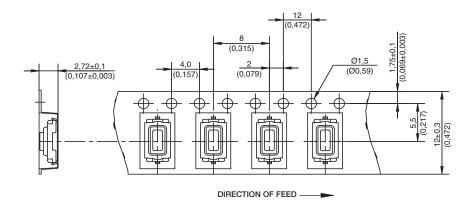
OPTION CODE	FORCE
L	130 grams
Н	200 grams
K**	260 grams

ACTUATOR HEIGHT



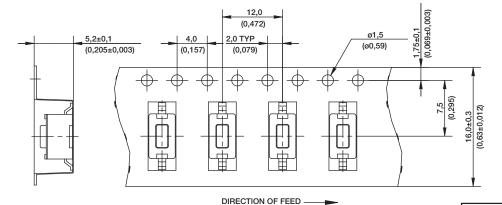
OPTION CODE	HEIGHT "H" or LENGTH "L"	TERMINATION	SCHEMATIC
25	2,5 (.098)	SMT	1 0
43	4,3 (.169)	Thru-hole & SMT	1 0 2
50	5,0 (.197)	Thru-hole	
31	3,15 (.124)	Vertical	1 0 2 3 0 4 =
39	3,85 (.151)	Vertical	

INSERTION TYPE



SMTR 43

SMTR75 25



First Angle Projection







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

strial ________

Specification

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

Mechanical

ACTUATION FORCE: PTS645 models: 130 grams, 160 grams,

200 grams, 260 grams

LIFE EXPECTANCY: 100,000 operations.

Electrical

CONTACT RATING: 50 mA @ 12 V DC. DIELECTRIC STRENGTH: 250 V AC min. CONTACT RESISTANCE: 100 m Ω max. initial. INSULATION RESISTANCE: 10 $^{11}\Omega$ min.

Environmental

OPERATING TEMPERATURE: -20°C to 60°C

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

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

Process

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

Materials

BASE: 6/6 nylon or glass filled polyester (PBT). ACTUATOR: 6/6 nylon or polyacetal.

COVER PLATE: PTS645S: Polyester or stainless steel. PTS645T and PTS645V: Tin alloy or stainless steel. DOME CONTACTS: Phosphor bronze, silver clad. STATIONARY CONTACTS: Brass, silver plated. TERMINALS: Brass, silver plated. Insert molded.

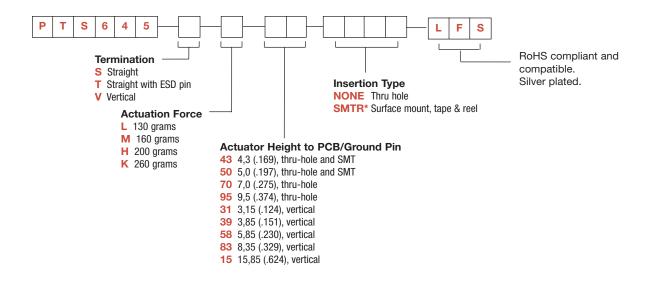
Packaging

Bulk packaging.

Tape & reel for the SMT type: Reel of 1,000 pieces

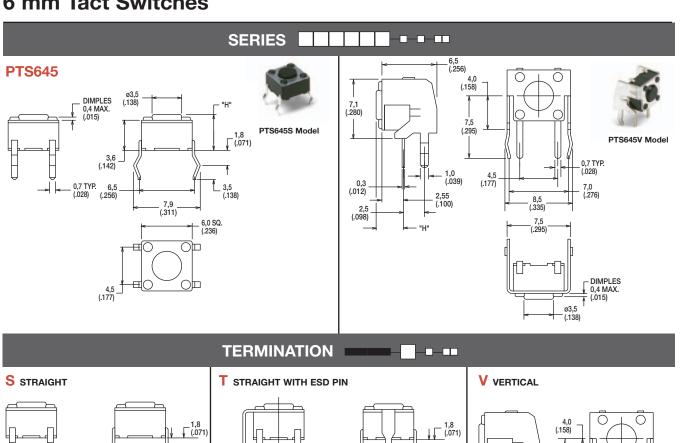
How To Order

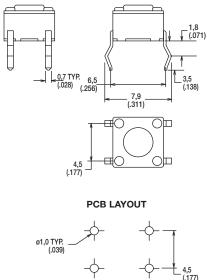
Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and and place it in the appropriate box.

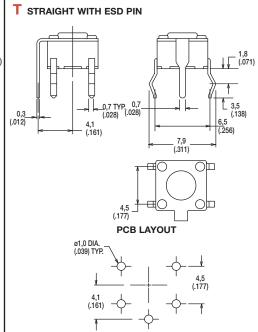


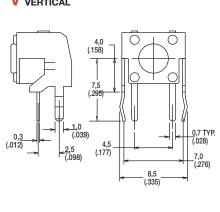
*Only the PTS645 in horizontal type without ESD pin is available in SMT type.

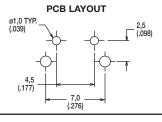




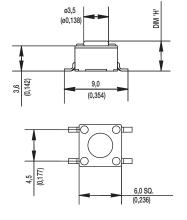


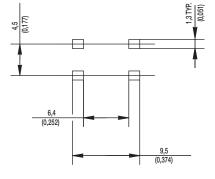
















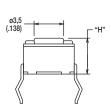
ACTUATION FORCE

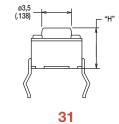
OPTION CODE	FORCE		
L	130 grams		
M	160 grams		
Н	200 grams 260 grams		
K			

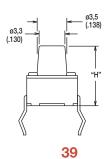
K 260 ACTUATOR HEIGHT

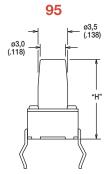
OPTION	HEIGHT "H" or		SCHEMATIC	
CODE	LENGTH "L"	TERMINATION	Without EMC pin	With EMC pin
43	4,3 (.169)	Thru-hole and SMT		
50	5,0 (.197)	Thru-hole and SMT	10	10
70	7,0 (.275)	Thru-hole	30-1-04	30
95	9,5 (.374)	Thru-hole		· •
31	3,15 (.124)	Vertical		
39	3,85 (.151)	Vertical		10 < 00
58	5,85 (.230)	Vertical		10
83	8,35 (.329)	Vertical		•—•
15	15,85 (.624)	Vertical		

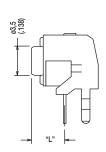
43 50 70

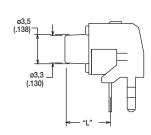


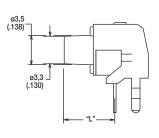




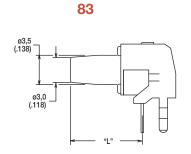


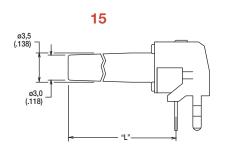






58













Features/Benefits

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

Typical Applications

- Consumer products
- Instrumentation
- Computer products
- Industrial

Specification

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

Mechanical

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

100,000 operations, K option.

Electrical

CONTACT RATING: 50 mA @ 12 V DC.0 DIELECTRIC STRENGTH: 250 V AC min. CONTACT RESISTANCE: 100 m Ω max. initial. INSULATION RESISTANCE: $10^{11}\Omega$ min.

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

Environmental

OPERATING TEMPERATURE: -40°C to 60°C

Process

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

Materials

BASE: 6/6 nylon or glass filled polyester (PBT) (UL 94V-0). ACTUATOR: PBT (UL94V0) or polyacetal (UL 94HB). COVER PLATE: Tin alloy.

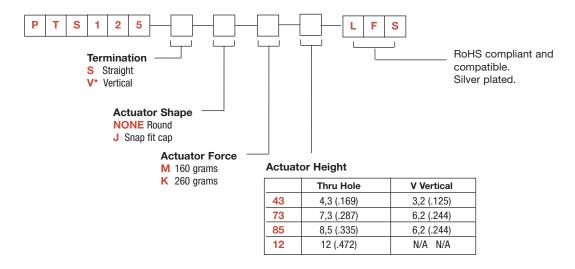
DOME CONTACTS: Phosphor bronze, silver clad. STATIONARY CONTACTS: Brass, silver plated. TERMINALS: Brass, silver plated. Insert molded.

Packaging

Tube packaging.

How To Order

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



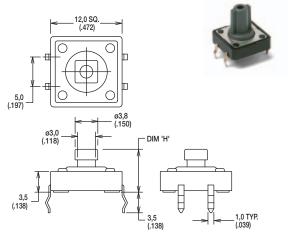
^{*} V option available with J73 actuator only.

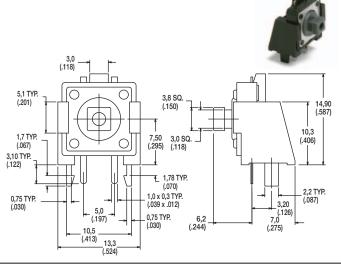




Tactile Switches

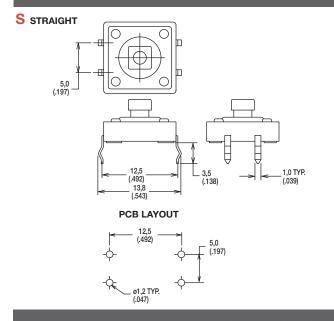


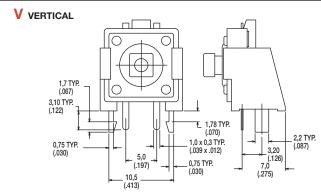




TERMINATION





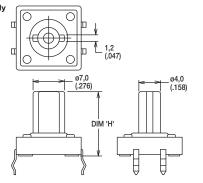


PCB LAYOUT ø3,51 TYP. (.138) 3,20 TYP. J (.126) ø1,22 TYP. (.048)

ACTUATOR SHAPE

NONE ROUND

43 and 85 heights only 12 height only 0 DIM 'H'

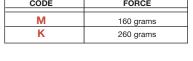


J SNAP-FIT CAP 73 height only ø3,8 (.150) 7,3 (.287) First Angle Projection



ACTUATION FORCE

OPTION CODE	FORCE		
М	160 grams		
K	260 grams		



ACTUATOR HEIGHT 43 4,3 mm **73** 7,3 mm SNAP-FIT **12** 12 mm **85** 8,5 mm





ITS Series Illuminated Tact Switch

Features/Benefits

- Vertical and right angle
- Thru-hole and SMT 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







_____ Environmental

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

Process

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

Materials

CONTACTS/TERMINALS: Base metal; brass

Plating; Ag

DOME: Base metal: Phosphor bronze

Plating; Ag

BASE: PA ACTUATOR: PA COVER: PA

Caps

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

Specification

FUNCTION: N.O. momentary action

TERMINALS: SMT with positioning pegs, Thru-hole

Mechanical

OPERATING FORCE: 160gf ± 50gf

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

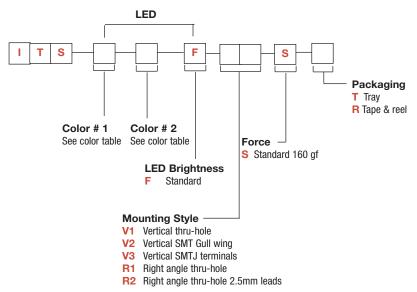
Thru-hole: 200 pieces per tray

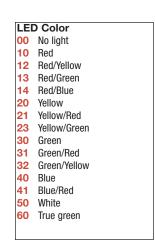
SMT: tape & reel (see V2 or V3 mounting style drawings)

How To Order

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

B-87





^{*} Other colors available by request

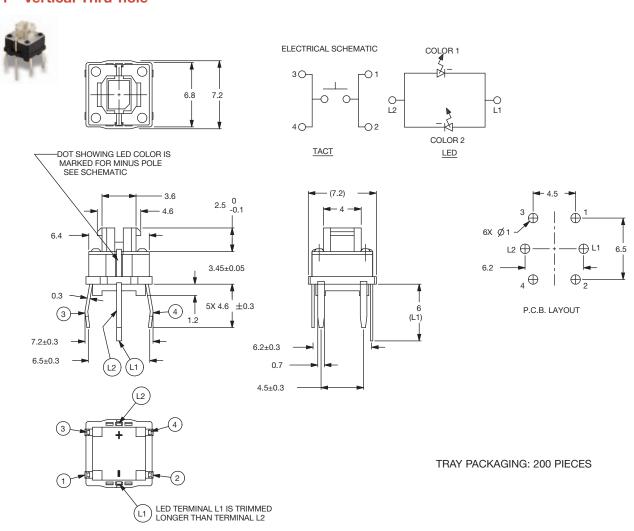


LED COLOR / BRIGHTNESS

		Standard LED Color Options					
LED Characteristic	units	Red (1)	Green (2)	Yellow (3)	Blue (4)	White (5)	True Green (6)
Recommended Operating	mA @ 5VDC	20mA @ 5VDC	20mA @ 5VDC	20mA @ 5VDC	20mA @ 5VDC	20mA @ 5VDC	20mA @ 5VDC
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	114 mW	108 mW
Forward Voltage @ 20A	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 @ 20A	nm	637nm (Typical)	570nm (Typical)	590nm (Typical)	465nm (Typical)	465nm (Typical)	522nm (Typical)
Wavelength at Peak Emission @ 20A	nm	465nm (Typical)	573nm (Typical)	590nm (Typical)	460nm (Typical)	465nm (Typical)	515nm (Typical)
Spectral Half Bandwidth @ 20A	nm	20nm (Typical)	17nm (Typical)	20nm (Typical)	25nm (Typical)	465nm (Typical)	33nm (Typical)
Luminous Intensity @ 20mA	mcd	50mcd Minimum	40mcd Minimum	125mcd 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





____fi

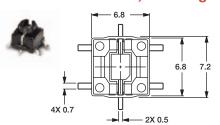
В

Tactile Switches



MOUNTING STYLES

V2 - Vertical SMT; Gullwing



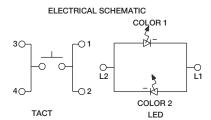
3.6

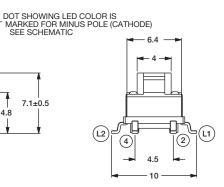
4.6

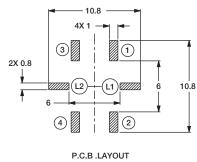
0,4 X 45 ° — CHAMFER

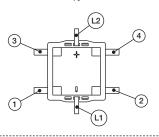
3

0.3 TYP









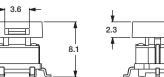
(L2)

4X 0.6 ±0.2







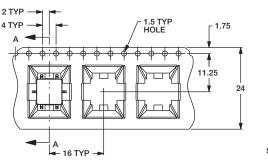


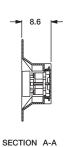
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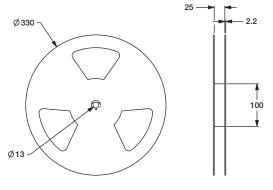
0.1



1. SWITCH WITH TEMPORARY PICK AND PLACE CAP.







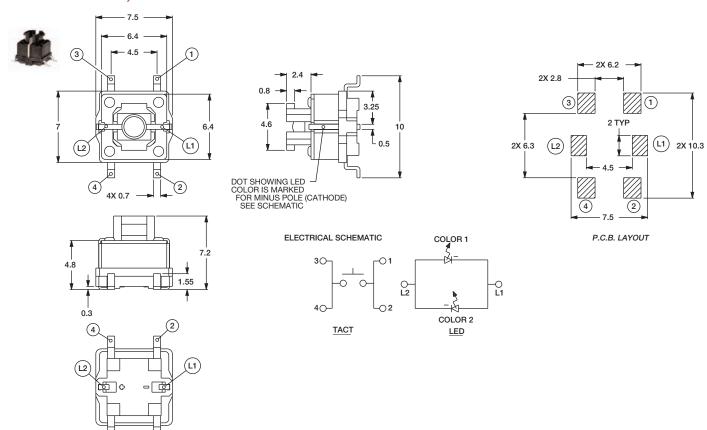


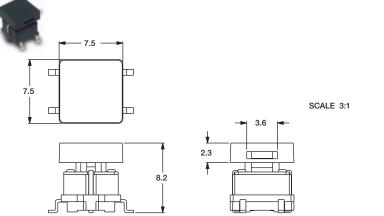
MOUNTING STYLES

V3 - Vertical SMT; J terminal

В

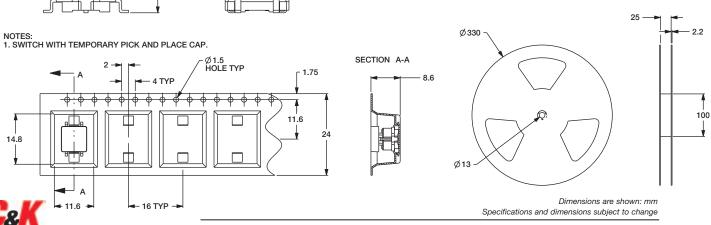
Tactile Switches





(1)

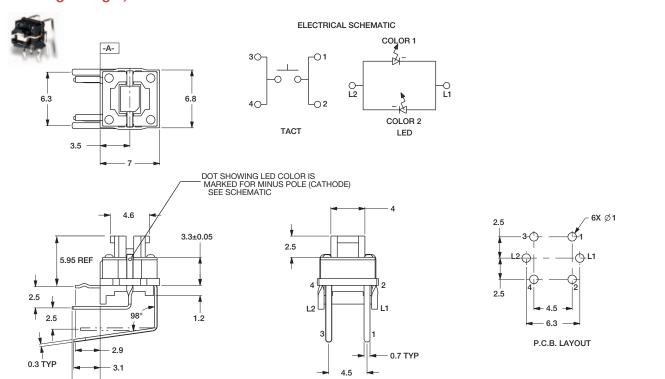
TAPE & REEL: 500 PIECES





MOUNTING STYLES

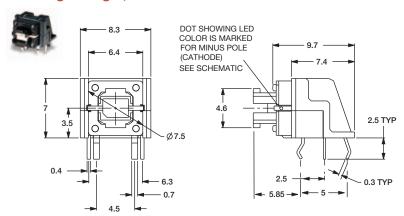
R1 - Right Angle; Thru-hole

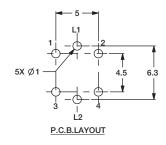


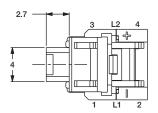
R2 - Right Angle; Thru-hole 2.5mm leads

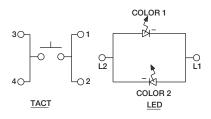
3.3

-A-









ELECTRICAL SCHEMATIC

TRAY PACKAGING: 200 PIECES

TRAY PACKAGING: 200 PIECES

Dimensions are shown: mm Specifications and dimensions subject to change



www.ck-components.com

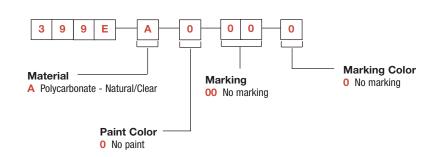
В

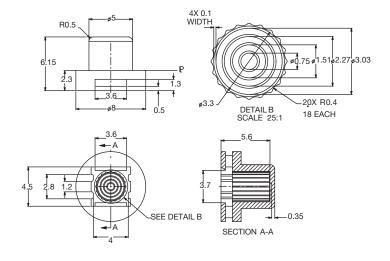


CAPS

Use the individual ordering code for each cap









CAPS









400EBA01E

Clear, silver paint laser etch flat edge

400EC0000

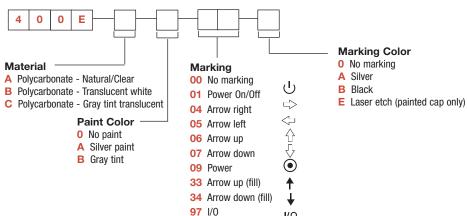
Clear, gray tint, flat edge

400EC001B

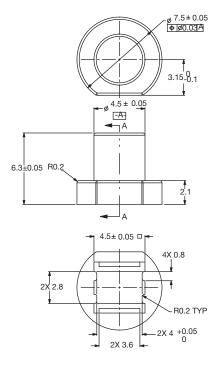
Clear gray tint with black power symbol, flat edge

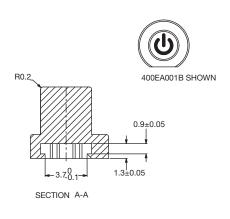
400EB0000

Translucent, flat edge













ITSXXFR1ST & 400EBA01E cap

ITSXXFR2ST & 400EC001B cap



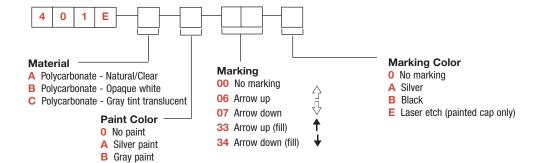
Dimensions are shown: mm Specifications and dimensions subject to change

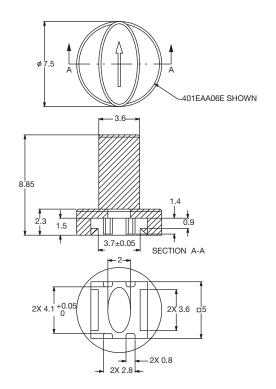
ħ

В

CAPS







MARKINGS

OPTION CODE	ILLUMINATION TYPE	
00	No marking	
01	Power ON/OFF	<u>ர</u>
04	Arrow Right	\Rightarrow
05	Arrow Left	\forall
06	Arrow Up	4
07	Arrow Down	Ū.
09	Power	•
33	Arrow Up (fill)	↑
34	Arrow Up (fill)	+
97	I/O	1/0

