

Body Height 1.6mm, Compact-sized Multifunction Type Tactile Switches

TSW-10 / -10A / -10C Series

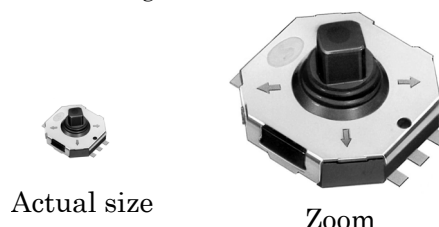
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Features

- ◇ With 7.6x7.8mm dimension and 1.6mm height, surface-mounting type switches are ideal for high-density mounting.
- ◇ Low profile design with stem height 4.5mm(4-direction+Center push type), 4.0mm(4-direction type).
- ◇ A sharp click feeling of key touch is provided utilizing the tactile feedback characteristic.
- ◇ J-bent terminal and straight terminal are standardized. Permits reflow soldering.
- ◇ With solderable metal covered ground terminal effective for electrostatic discharge.
- ◇ Switches are packaged in 16mm wide embossed taping.

Applications

- ◇ Digital still camera and digital video camera
- ◇ Portable audio devices, Car navigation system
- ◇ Cellular phone, Personal digital assistance



Products Line

- ◇ 4-direction+Center push Type (TSW-10)

No	Products No.	Operating force		Travel		Terminal style	Variety	Qty/reel (pcs.)
		4- direction	Center push	4- direction	Center push			
1	TSW-10-11-T15	1.6N	3.2N	5 degree	0.15mm	J-bent	Without guide bosses	1,500 (Minimum packing unit)
2	TSW-10-1-11-T15					Straight		
1	TSW-10-11B-T15					J-bent	With guide bosses	
2	TSW-10-1-11B-T15					Straight		

- ◇ 4-direction Type (TSW-10A)

No	Products No.	Operating force		Travel		Terminal style	Variety	Qty/reel (pcs.)
		4- direction	Center push	4- direction	Center push			
3	TSW-10A-01-T15	1.6N		5 degree		J-bent	Without guide bosses	1,500 (Minimum packing unit)
4	TSW-10A-1-01-T15					Straight		
3	TSW-10A-01B-T15					J-bent	With guide bosses	
4	TSW-10A-1-01B-T15					Straight		

- ◇ 4-direction+Center push , Long-button Type (TSW-10C)

No	Products No.	Operating force		Travel		Terminal style	Variety	Qty/reel (pcs.)
		4- direction	Center push	4- direction	Center push			
5	TSW-10C-11-T10	1.0N	3.2N	5 degree	0.15mm	J-bent	Without guide bosses	1,000 (Minimum packing unit)
6	TSW-10C-1-11-T10					Straight		
5	TSW-10C-11B-T10					J-bent	With guide bosses	
6	TSW-10C-1-11B-T10					Straight		

Dimensions

Unit : mm

No	Style	P.C.B Land Dimensions Circuit Diagram (TOP VIEW)
1	4-direction+Center push Type , J-bent terminal TSW-10-11-T15, TSW-10-11B-T15 Above is the drawing of TSW-10 with guide bosses.	CENTER PUSH
2	4-direction+Center push Type , Straight terminal TSW-10-1-11-T15, TSW-10-1-11B-T15 Above is the drawing of TSW-10 with guide bosses.	CENTER PUSH

Dimensions

Unit : mm

No	Style	P.C.B reference Land Dimensions Circuit Diagram (TOP VIEW)
3	4-direction type , J-bent terminal TSW-10A-01-T15, TSW-10A-01B-T15 Above is the drawing of TSW-10A with guide bosses.	Dummy Terminal Circuit Diagram (TOP VIEW)
4	4-direction type , Straight terminal TSW-10A-1-01-T15, TSW-10A-1-01B-T15 Above is the drawing of TSW-10A with guide bosses.	Dummy Terminal Circuit Diagram (TOP VIEW)

Dimensions

Unit : mm

No	Style	P.C.B Land Dimensions Circuit Diagram (TOP VIEW)
5	4-direction+Center push Type , J-bent terminal , Long-button TSW-10C-11-T10, TSW-10C-11B-T10 Above is the drawing of TSW-10C with guide bosses.	The PCB land dimensions show two configurations: "Without guide bosses" and "With guide bosses". The "With guide bosses" version includes dimensions for Ø0.75hole and Ø1.03hole. The circuit diagram shows a center push switch with terminals A(1), B(4), C(3), D(6), and a common terminal 5.
6	4-direction+Center push type , Straight terminal , Long-button TSW-10C-1-11-T10, TSW-10C-1-11B-T10 Above is the drawing of TSW-10C with guide bosses.	The PCB land dimensions show two configurations: "Without guide bosses" and "With guide bosses". The "With guide bosses" version includes dimensions for Ø0.75hole and Ø1.03hole. The circuit diagram shows a center push switch with terminals A(1), B(4), C(3), D(6), and a common terminal 5.

□ Typical Specifications

Item	Specifications
Ratings (max.) (Resistive load)	50mA 12V DC
Contact resistance	100 milliohm max. (Initial)
Insulation resistance	100 megohm min. 100V DC
Withstanding voltage	250V AC for 1min.
Operating force	4-direction : 1.6N or 1.0N , Center push : 3.2N
Operating life	100,000 cycles
Operating temperature range	-20 to +70 degree Celsius
Storage temperature range	-40 to +85 degree Celsius (except carrier tape)

□ Notes

1. The appearance and specifications of the product may be modified to improve its performance without prior notice.
2. This catalog shows only outline specifications. When using the product, please obtain formal specifications.
3. Please see appendix [Cautions in Using Switches].
4. The operation force other than the above list is also available and please contact us for the details.
5. The minimum packing unit for taping specification is shown above. It is requested that the quantity of the order shall be an integer multiple of the minimum packing units.
6. Please set the reflow soldering condition confirming under the actual condition of mass-production.
7. Characteristics of switch may change due to the warping of the circuit writing board. Consideration should be given to the pattern design and layout.
8. This push switch is not washable.
9. This push switch permits reflow soldering and the switch has the possibility to be mounted on the edge of the PC board. But auto-dip shall not be done after the mounting of the switch, because of the big possibility of the penetration of the soldering flux into the inside of the switch.
10. Larger stress than specified and/ or shock shall not be applied during switch operation. Pressure to the push button shall be applied to the whole surface equally and avoid the pressure to the specific one portion.
11. In manual soldering, consider that the abnormal pressure of the soldering iron shall not be applied to the tip of the terminal as well do not apply any pressure for more than 1 minute after soldering.
12. Care shall be taken so that the flux shall not penetrate into the terminal portion.
13. The operating characteristic may change if force is exerted to the top of the cover.