CUSTOMER :

SPECIFICATION

TYPE : TACT SWITCH

PRODUCT No. : IT-1102 TYPE

APPROVOAL DATE: 20 . .	VALIDITY PERIOD : YEARS

SIGN	DRAFTER	CHECKER	DIRECTOR	G. MGR
				IN SUNG METAL CO.,LTD. President I.P. LEE
				Inpyo, Lee

★ DIVISON IN CHARGE: Q.C TEAM IN INSUNG SWITCH

REMARK	

◀INSUNG METAL CO., LTD▶

15Block 3Lot, geomdan Industrial - complex, oryu-dong, Seo-gu, Incheon, Korea

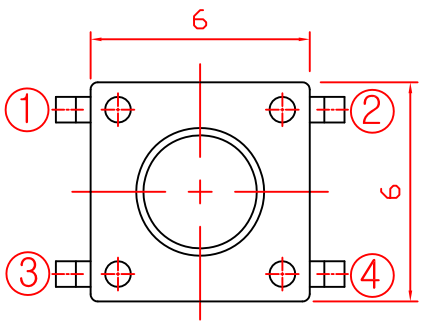
TEL : 82-32-564-3481~2

FAX : 82-32-564-3480

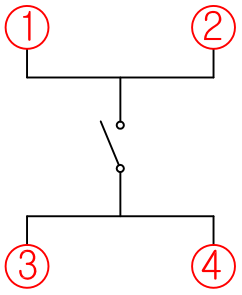
WEB SITE : http://www.itswitch.co.kr

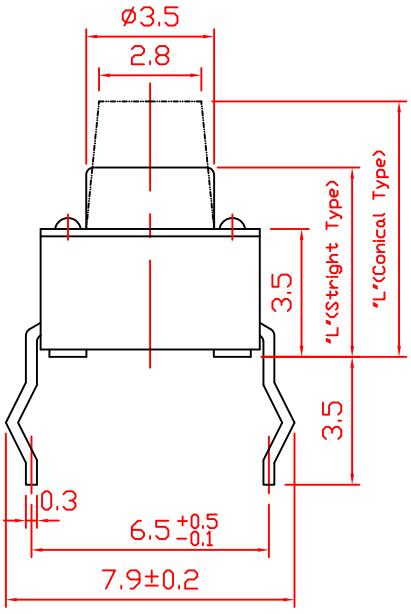
E-MAIL : itswitch@itswitch.co.kr

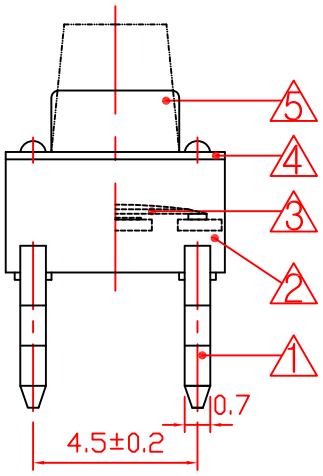
INSUNG SWITCH	BEST DELIVERY BEST QUALITY BEST PRICE



CIRCUT DIAGRAM



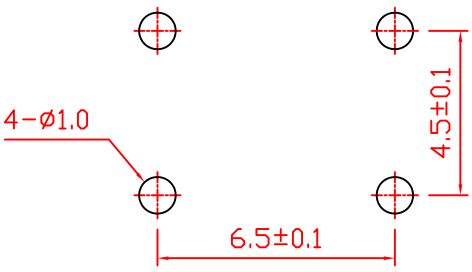




Stright Type	
MODEL NO.	"L"(mm)
IT-1102	4.3
IT-1102A	5.0
IT-1102D	7.0
IT-1102K	7.5
IT-1102E	8.0
IT-1102C	9.5

Conical type	
MODEL NO.	"L"(mm)
IT-1102C	9.5
IT-1102B	11.0
IT-1102F	11.5
IT-1102I	12.0
IT-1102G	13.0
IT-1102N	14.5
IT-1102J	15.0
IT-1102H	17.0

P.C.B DIMENSION



NOTE

1. RATING: D.C 12V, 50mA
2. CONTACT RESISTANCE: 100mΩ MAX
3. OPERATING FORCE: 160±50gf, 260±50gf
4. GENERAL TOLERANCE: ±0.3mm
5. TRAVEL: 0.25±0.1mm
6. LIFE CYCLE: 100,000 CYCLES

				5	STEM	NYLON66	1	
				4	COVER	PET FILM	1	
				3	CONTACT DOME	C5210	1	Ag CLAD
				2	CASE	NYLON66	1	
				1	TERMINAL	C2680	1	Ag PLATED
NO	DATE	REVISIONS	SIGN	NO	DESCRIPTION	MAT'L	Q'TY	REMARKS

DRAWN	DESIGNED	APPROVED	SCALE		DWG NO.
			UNIT	mm	IT-1102 TYPE

IN SUNG METAL CO.,LTD.	TITLE TACT SWITCH

PRODUCTS SPECIFICATION

TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

1. General requirements

1-1. The specification is applied to tact switch used in the circuit of low current.

1-2. Operating temperature : -20℃ to +70℃

1-3. Storage temperature : -30℃ to +80℃

1-4. Test conditions : Temperature - 5℃ to 35℃,
: Relative humidity - 45%RH to 85%RH
: Atmospheric pressure - 86kPa to 106kPa (860mbar ~ 1060mbar)

If there is an objection to a judgment, the following conditions shall be appled

◆Temperature : 20±2℃, Relative humidity:65±5%RH, Atmospheric pressure: 86kPa to 106kPa (860mbar ~ 1060mbar)

2. Appearance & Dimensions : Refer to the drawing

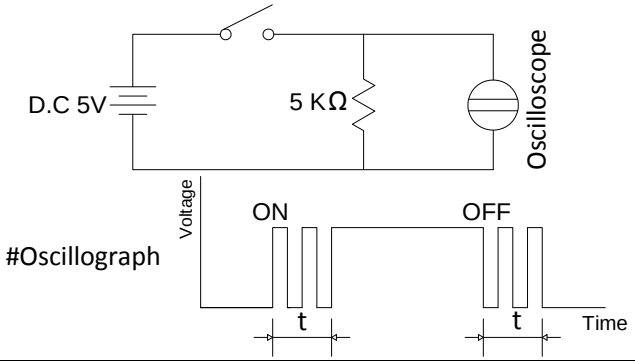
3. Electrical arrangement : single pole, single throw

(The two terminlas are either connected together or disconnected from each other)

4. Arrangement of operation : Tactile feed-back

5. Maximum rating : D.C 12V, 50mA

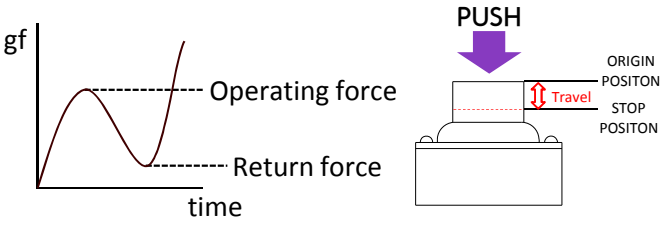
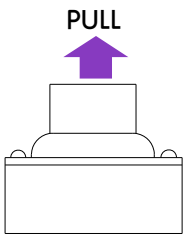
6. Electrical requirements

No.	ITEM	TEST CONDITION	REQUIREMENTS
6-1.	Contact resistance	Applying static load twice the operating force to the center of the Stem, measurements shall be made with a 1 kHz small-current contact resistance meter.	100mΩ Max.
6-2.	Insulation resistance	Measurements shall be made following application of D.C 100V potential between terminals and between individual terminals and frame for 1 minute.	100MΩ Min.
6-3.	Dielectric withstanding voltage	A.C 250V(50Hz to 60Hz)is applied between terminals and between terminals and frame for 1 minute.	There shall be no breakdown
6-4.	Bounce	Lightly pushing the center of the Stem at a rate of 3 operations/sec. Bounce shall be tested when "ON" and " OFF" 	10 ms Max.

PRODUCTS SPECIFICATION

TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

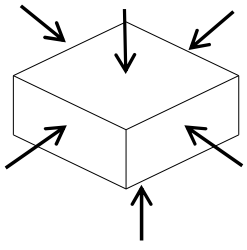
7. Mechanical requirements

No.	ITEM	TEST CONDITION	REQUIREMENTS
7-1.	Operating force	Place the switch such that the direction of switch operation is vertical. And then gradually increasing load is applied to the center of Stem, the maximum load required for the Stem to come to a stop shall be measured. 	160±50gf 260±50gf
7-2.	Travel	Place the switch such that the direction of switch operation is vertical. And then apply a static load twice the operating force to the center of the stem, the travel distance for the Stem to come to a stop shall be measured.	0.25±0.1mm
7-3.	Return force	A switch is installed such that the direction of switch operation is vertical. Upon depression of the Stem in its center the whole travel distance, the force of the Stem to return to its free position shall be measured.	50 gf Min.
7-4.	Static strength	Placing the switch such that the direction of switch operation is vertical. And a static load of 3kgf shall be applied in the direction of Stem operation for a period of 60 seconds.	There is no damage from mechanical and electrical degradation
7-5.	Stem strength	Placing the switch such that direction of switch operation is vertical. And the maximum force to withstand a pull applied opposite to the direction of Stem operation shall be measured. 	1 kgf Min. (About 3kgf)

PRODUCTS SPECIFICATION

TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

8. Durability Requirements

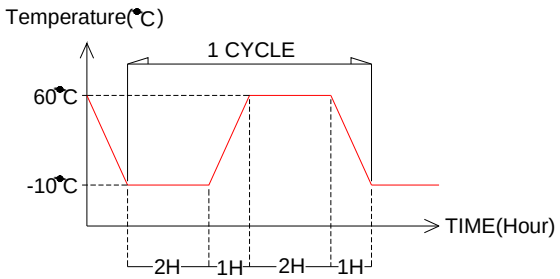
No.	ITEM	TEST CONDITION	REQUIREMENTS
8-1.	Operating life	Measurements shall be made following the test set forth below: (1)D.C 12V, 50mA (2)Rate of operation 2 to 3 operation/ Sec. (3)Depression: twice the operating force (4)Operation time : 100,000 cycle	Contact resistance : 200mΩ Max. Insulation resistance : 50 MΩ Min. Operating force : Initial force ± 30% Item 6-3. Item 7-2
8-2.	Vibration resistance	Measurements shall be made following the test set forth below: (1) Range of oscillation : 10Hz to 55Hz (2) Amplitude, pk-to-pk: 1.5mm (3) Cycle of sweep : 10-55-10Hz in 1 minute,approx. (4) Mode of sweep: Logarithmically sweep or uniform sweep (5) Direction of oscillation : X, Y, Z (3 Direction) (6) Time : Each 2 hours, for a total of 6 hours	Item 6 Item 7-1 Item 7-2
8-3.	Impact shock resistance	Measurements shall be made following the test set forth below: (1) Acceleration : 80g (2) Cycles of test : 3 cycle each in 6 direction, for a total of 18 cycles 	Item 6 Item 7-1 Item 7-2

9. Environmental equirements

No.	ITEM	TEST CONDITION	REQUIREMENTS
9-1.	Heat Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made. (1) Temperature: 80±2℃ (2) Time : 96 hours Water drops shall be removed.	Contact resistance : 200 mΩ Max. Insulationresistance : 50 MΩ Min. Item 6-3, 6-4 Item 7-1 to 7-3

PRODUCTS SPECIFICATION

TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

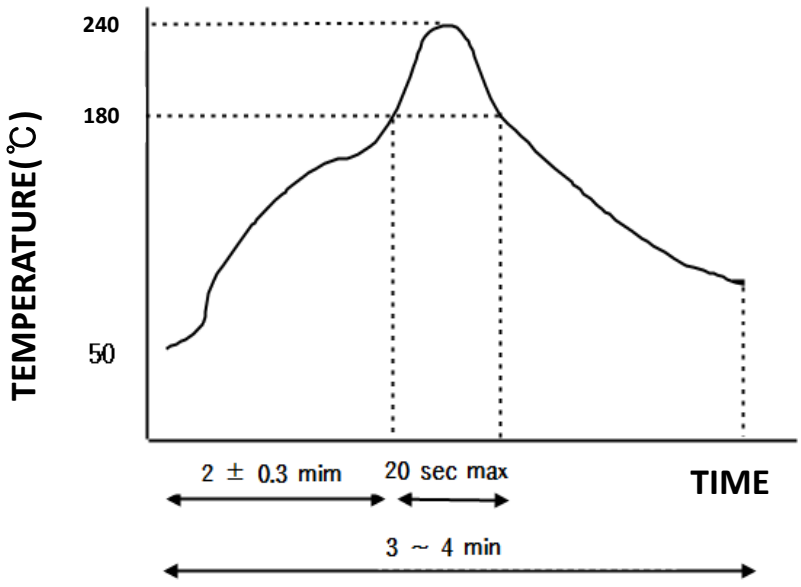
No.	ITEM	TEST CONDITION	REQUIREMENTS
9-2.	Cold Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made. (1) Temperature: -30±2℃ (2) Time : 96 hours Water drops shall be removed.	Contact resistance : 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6-3, 6-4 Item 7-1 to 7-3
9-3.	Moisture Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made. (1) Temperature : 60±2℃ (2) Relative humidity : 90% to 95% (3) Time : 96 hours Water drops shall be removed.	Contact resistance : 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6-3, 6-4 Item 7-1 to 7-3
9-4.	Cycle of Temperature	Following 5 cycles of high temperature test. A switch shall be placed in normal temperature and humidity conditons for 1 hour before measurements are made. During this test, water drops shall be removed. 	Contact resistance : 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6-3, 6-4 Item 7-1 to 7-3
9-5.	Withstand H_2S	Measurements shall be made following the test set forth below: (1) Density : 3 ± 1 ppm (2) Temperature : 40 ± 2℃(90%RH to 95%RH) (3) Time : 24 Hours (4) Standard condition after test : 1 hour	Contact resistance : 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6-3, 6-4 Item 7-1 to 7-3

10. Soldering condition

10-1.	Manual soldering	◎ Soldering temperature : 350℃ Max. ◎ Continuous soldering time : 3 Sec. Max.

PRODUCTS SPECIFICATION

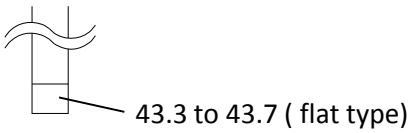
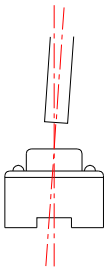
TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

10-2.	Auto dip soldering (Insert Type)	◎ Flux built-up : Mounting surface should not be coated with flux ◎ Preheating temperature : Ambient temperature of the soldered surface of PC board 100℃ Max ◎ Preheating time : 45 Sec. Max. ◎ Soldering temperature : 255℃ Max ◎ Continous dipping time : 5 sec Max. ◎ Number of soldering : 2 times Max.
10-3.	Reflow soldering (SMD Type)	 Time inside soldering equipment ◎ Preheat : Temperature on the copper foil surface should reach 180, 2±0.3 min after the PC Board entered into the soldering equipment. ◎ Soldering heat : Temperature on the copper foil surface should reach the peak temperature of 240℃ within 20 seconds after the PCB entered into soldering heat zone. ◎ Switch terminals and PCB upper face shall be free be free from flux prior to soldering. ◎ Safeguard the switch assembly against flux penetration from its top side.

PRODUCTS SPECIFICATION

TYPE	TACT SWITCH	P / N	IT - 1102 TYPE

11. Note

11-1.	Design of external button	The shape for botton of knob 
11-2.	Leaning angle of knob	Within 4′ 
11-3.	Caution	- A product shall be mounted by insert machine properly. - You shall pay attention to the handle of products not to give damage to the product