

CUSTOMER :

SPECIFICATION

TYPE : TACT SWITCH

PRODUCT No. : IT-1101-SMD TYPE

APPROVAL DATE: 20 . . .			VALIDITY PERIOD : . . .			YEARS		
S I G N	DRAFTER		CHECKER		DIRECTOR		G. MGR	
							IN SUNG METAL CO.,LTD. <i>Jaemyeol</i> President I.P. LEE	
							Inpyo, Lee	
★ DIVISION IN CHARGE: Q.C TEAM IN INSUNG SWITCH								

REMARK	
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◀INSUNG METAL CO., LTD▶

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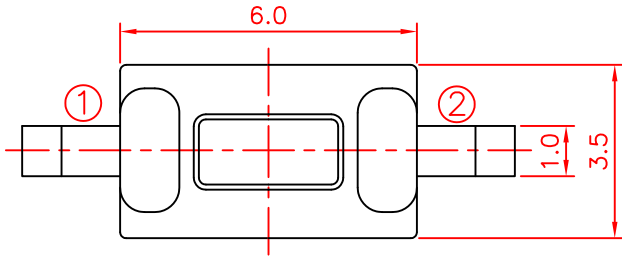
WEB SITE : <http://www.itswitch.co.kr>

E-MAIL : itswitch@itswitch.co.kr

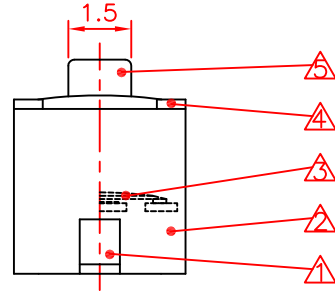
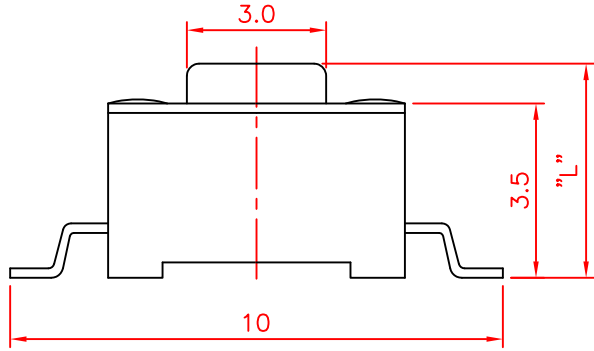
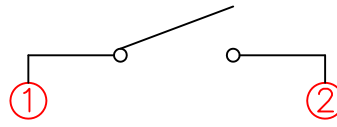


INSUNG SWITCH

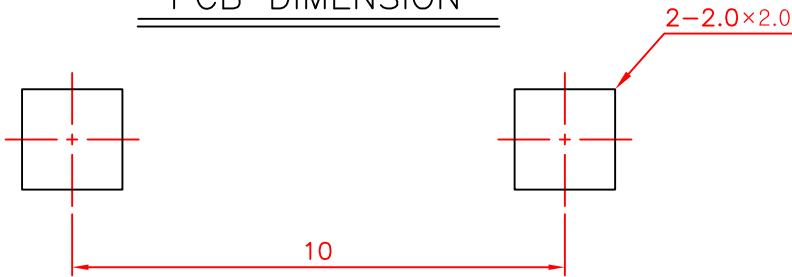
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BEST PRICE



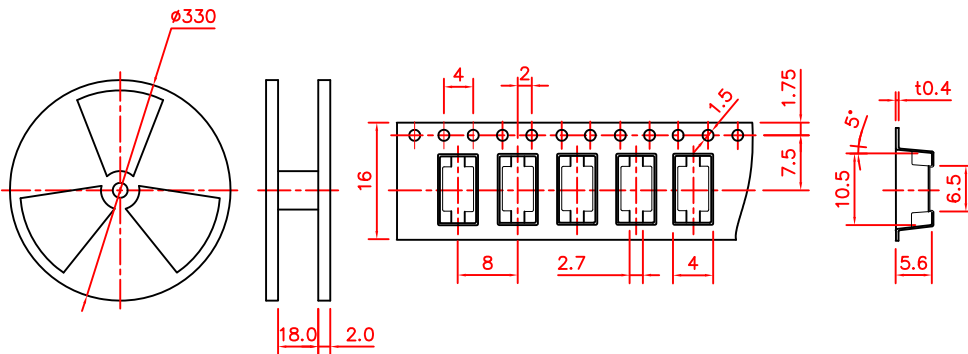
CIRCUIT DIAGRAM



PCB DIMENSION



REEL & TAPE DRAWING DIMENSION



MODEL	"L"	STEM COLOR
IT-1101	4.3mm	BLACK
IT-1101A	5.0mm	WHITE

NOTE

- 1.RATING: D.C 12V, 50mA
- 2.CONTACT RESISTANCE: 100mΩ MAX
- 3.OPERATING FORCE:
180±50gf, 260±50gf
- 4.GENERAL TOLERANCE: ±0.3mm
- 5.TRAVEL: 0.25±0.1mm
- 6.LIFE CYCLE: 50,000 CYCLES
- 7.REEL PACKAGE: 1,500 PCS/REEL

				▲	STEM	NYLON6T	1	
				▲	COVER	SUS	1	
				▲	CONTACT DOME	SUS	1	
				▲	CASE	NYLON6T	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-1101-SMD TYPE			



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1. General requirements

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

1-2. Operating temperature : -40°C to +70°C

1-3. Storage temperature : -50°C to +80°C

1-4. Test conditions : Temperature - 5°C to 35°C,
: 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 applied

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

2. Appearance & Dimensions : Refer to the drawing

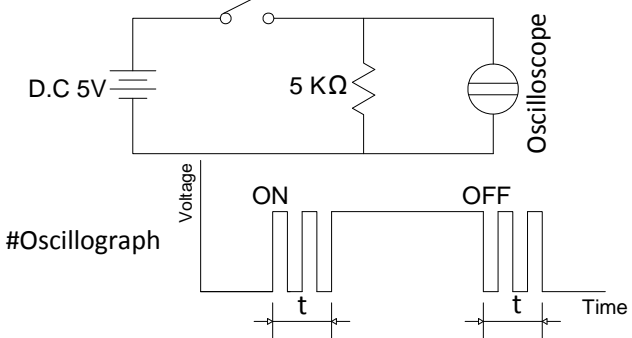
3. Electrical arrangement : single pole, single throw

(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

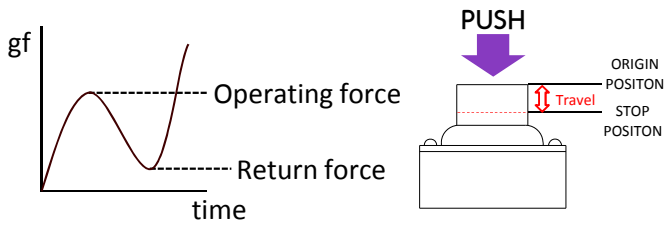
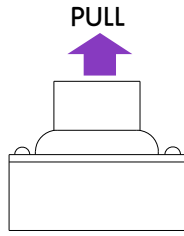
No.	ITEM	TEST CONDITION	REQUIREMENTS
6-1.	Contact resistance	Applying static load twice the operating force to the center of the Stem, measurements shall be made with a 1 kHz small-current contact resistance meter.	100mΩ Max.
6-2.	Insulation resistance	Measurements shall be made following application 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.

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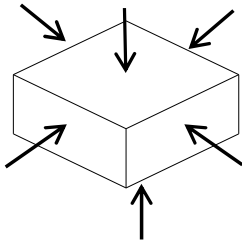
7. Mechanical requirements

No.	ITEM	TEST CONDITION	REQUIREMENTS
7-1.	Operating force	<p>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.</p> 	<p>180±50gf 260±50gf</p>
7-2.	Travel	<p>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.</p>	0.25±0.1mm
7-3.	Return force	<p>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.</p>	50 gf Min.
7-4.	Static strength	<p>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.</p>	There is no damage from mechanical and electrical degradation
7-5.	Stem strength	<p>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.</p> 	<p>1 kgf Min. (About 3kgf)</p>

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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 : 50,000 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 requirements

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°C (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

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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: $-50\pm 2^{\circ}\text{C}$ (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 : $60\pm 2^{\circ}\text{C}$ (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 conditions 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 ₂ S	Measurements shall be made following the test set forth below: (1) Density : 3 ± 1 ppm (2) Temperature : $40 \pm 2^{\circ}\text{C}$ (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

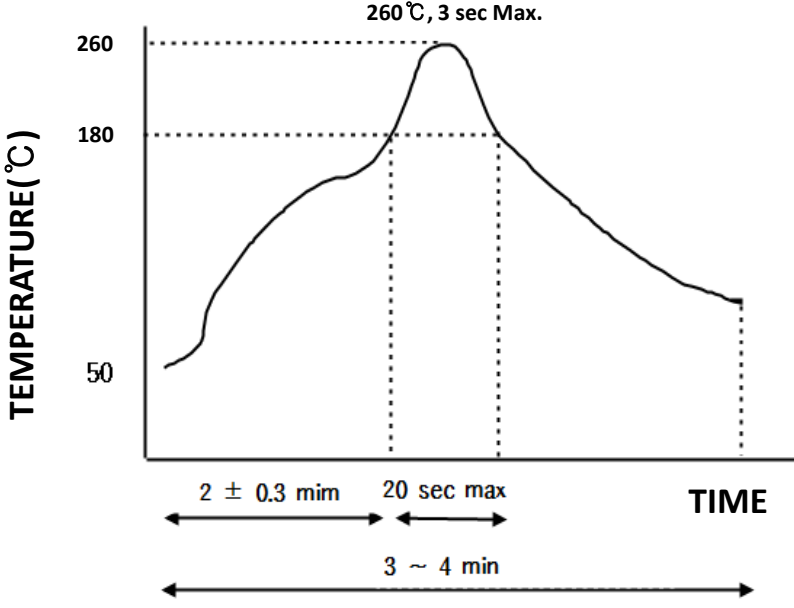
10. Soldering condition

10-1.	Manual soldering	◎ Soldering temperature : 350°C Max. ◎ Continuous soldering time : 3 Sec. Max.
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I N S U N G S W I T C H

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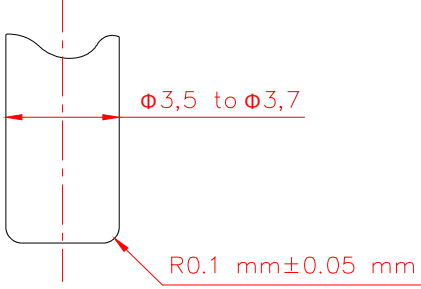
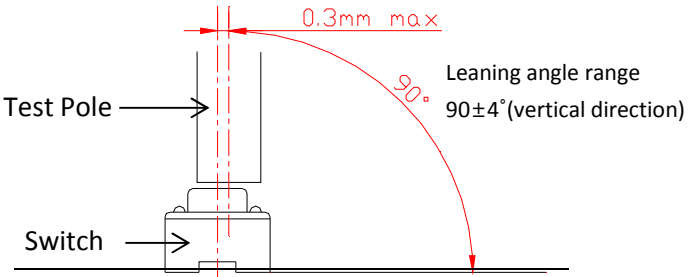
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10-2.	Auto dip soldering (Insert Type)	<ul style="list-style-type: none"> ⊙ Flux built-up : Mounting surface should not be coated with flux ⊙ Preheating temperature : Ambient temperature of the soldered surface of PC board 100°C Max ⊙ Preheating time : 45 Sec. Max. ⊙ Soldering temperature : 255°C Max ⊙ Continuous dipping time : 5 sec Max. ⊙ Number of soldering : 2 times Max.
10-3.	Reflow soldering (SMD Type)	<div style="text-align: center;">  <p style="text-align: center;">Time inside soldering equipment</p> </div> <ul style="list-style-type: none"> ⊙ 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 260°C 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.

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11. Note

11-1.	Recommended shape of test pole	 <p>Diagram showing the recommended shape of the test pole. The diameter is specified as $\Phi 3,5$ to $\Phi 3,7$. The radius at the bottom is $R0.1 \text{ mm} \pm 0.05 \text{ mm}$.</p>
11-2.	Recommended operating conditions	 <p>Diagram showing the recommended operating conditions. The test pole is shown with a maximum gap of 0.3 mm max. The leaning angle range is $90 \pm 4^\circ$ (vertical direction). Labels indicate the Test Pole and Switch.</p>
11-3.	Caution	<ul style="list-style-type: none"> - 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