SPECIFICATIONS

TACT SWITCH

1. General

1.1 Application : This specification is applied to low current circuit tactile switch for electronic equipment.

1.2 Operating temperature range : -20℃ ~ 70℃ , 45 ~ 85% RH

1.3 Storage temperature range : -30℃ ~ 80℃. However, 96 hours maximum for continuous storage over a range -20 ~ -30℃ and a range 70 ~ 80℃.

1.4 Test conditions : The standard test conditions shall be 5 ~ 35℃ in temperature.
45 ~ 85% RH and 860 ~ 1060 mbar in atmospheric pressure.
Should any doubt arise in judgement, tests shall be conducted at 20±2℃, 60±5% RH
And 860～1060mba.

2. RATED VOLTAGE AND CURRENT.

DC 12V 50㎃

3. ELECTRICAL PERFORMANCE

	PROPERTY	TEST CONDITIONS	PERFORMANCE
3.1	Contact arrangement		* 1 pole, 1 throw.
3.2	Contact resistance	Measured DC 5V 1A or by ohmeter allowing a small current at 1kHz with a load of twice of the Actuating force.	* less than 100mΩ.
3.3	Insulation resistance	DC 100V is applied between terminals and between terminals and cover for 1 minute ± 5 seconds .	*greater than 100MΩ.
3.4	Dielectric Strength	AC 250V (50 ~ 60Hz) is applied between terminals and between terminals and cover for 1 minute.	* No insulation defect shall be observed.
3.5	Bounce	Measured by lightly striking the center of the button stem at the rate of 3 operations / sec'''	* less than 10m sec.

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									DOCUMENT NO.

4. MECHANICAL PERFOMANCE

	PROPERTY	TEST CONDITIONS	PERFORMANCE
4.1	Actuating force	A gradually increasing load is applied to the center of the button stem.	* As per individual manufactured drawing.
4.2	Return force	After actuating, the load is gradually decreased until the stem returns to its free position.	* 160gf, 260gf : greater than 50gf. * 100gf, 130gf : greater than 30gf.
4.3	Stop strength	A static load of 3kgf shall be applied to the direction of operation for 3 seconds.	*Shall be free from mechanical and electrical abnormalities.
4.4	Stem withdrawal force	A static load of 500gf is applied to the direction of pulling for 3 seconds.	*Shall be free from mechanical and electrical degradation.
4.5	Travel		*0.25 +0.2mm *0.25 -0.1mm
4.6	Arrangement of action		* Tactile feed-back

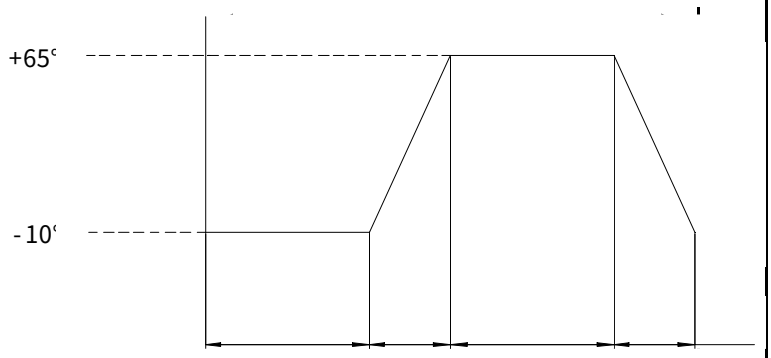
5. DURABILITY

	PROPERTY	TEST CONDITIONS	PERFORMANCE
5.1	Operating life	100,000cycles operation with a load of 150% of Actuating force at a rate of 2 cycles/sec. With a resistive load supplying DC 12V 50mA.	* Contact resistance : 200mΩ max. *Bounce : 20msec max. *Actuating force : within ±30% of the initial value.
5.2	Shock resistance	An impact load of 30g is applied according to the method 205 , MIL - STD 202.	* The requirment in item 3 and 4 shall be met.
5.3	Vibration resistance	The test is conducted according to the method 201, MIL - STD 202.	*The requirment in item 3 and 4 shall be satisfied without any degradation in both apperance and actuation.

SPECIFICATIONS

TACT SWITCH

6. WEATHER PROOF

	PROPERTY	TEST CONDITIONS	PERFORMANCE
6.1	Cold heat proof	After testing at -30℃ for 96hours, the sample is allowed to stand under normal temperature and humidity conditions for 1hour and measurement is performed within 1hour after that. Water drops should be wiped off.	* The requirement in item 3 and 4 shall be satisfied.
6.2	Dry heat proof	After testing at 85℃ for 96hours, the sample is allowed to stand under normal temperature for 1hour and measurement is performed within 1hour after that.	
6.3	Damp heat proof	After testing at 60±2℃ and 90 ~ 95% in relative humidity for 96hours, the sample is allowed to stand under normal temperature and humidity conditions for 1hour, and measurement is performed within 1hour after that. Water drops should be wiped off.	* Insulation resistance : 10mΩ minimum. *Dielectric strength : same as item 3.4. *Contact resistance : same as item 3.2.
6.4	Termal cycle	1 cycle  ; After the test conducted under 5 cycles the sample is allowed to stand under normal temperature and humidity conditions for 1hour, and the measurement is performed within 1hour.	*The requirement in item 3 and 4 shall be met.

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7. SOLDERING CONDITIONS

7.1 Manual soldering

7.1.1 Soldering temperature : less than 400℃.

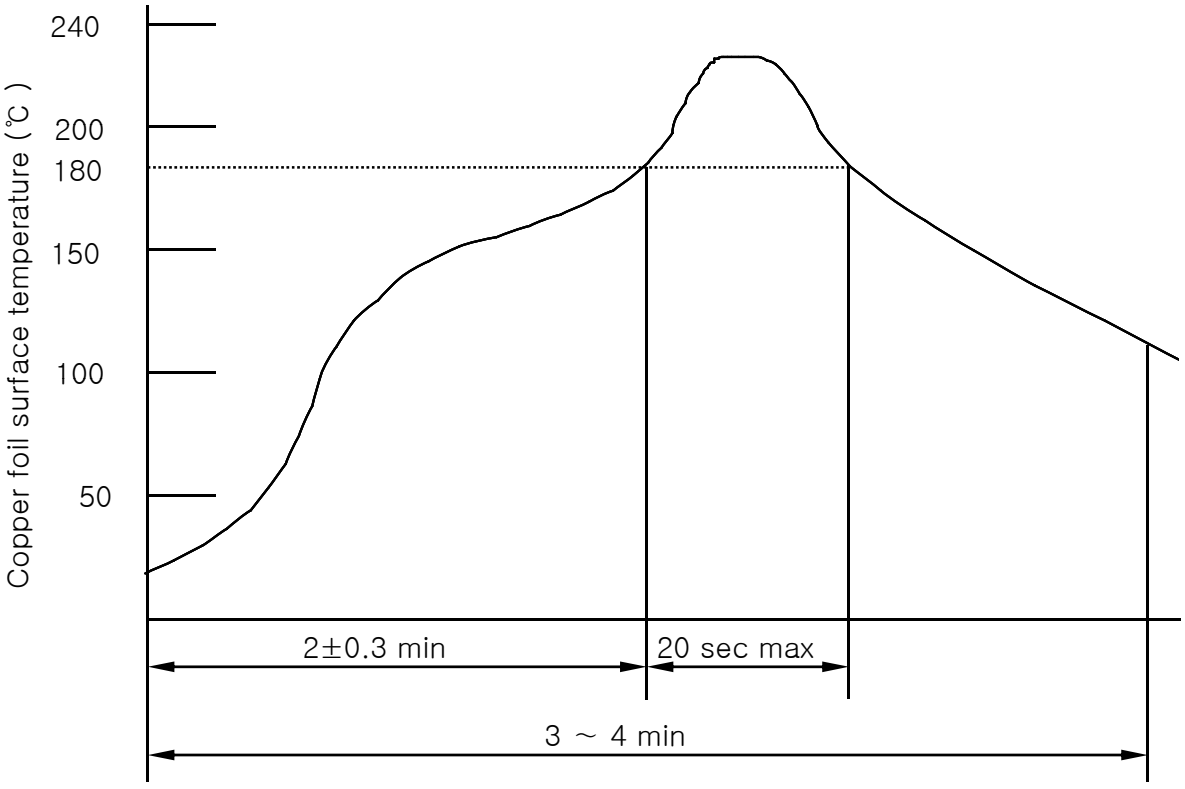
7.1.2 Soldering Time : Within 4 seconds.

8. AUTOMATIC SOLDERING CONDITIONS

Reflow soldering conditions

Preheat : termperature on the copper foil surface should reach 180℃, 2±0.3 minutes after the P.W.P entered into the soldering equipment.

Soldering heat : Temperature on ther copper foil surface should reach the peak temperature of 240℃ within 20 seconds after the P.W.B entered into soldering heat zone.

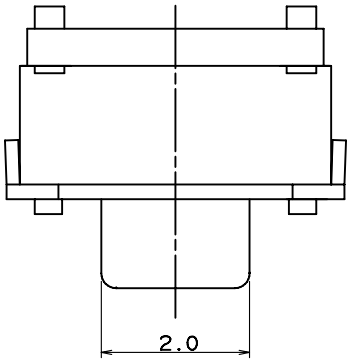


Temperature Profile

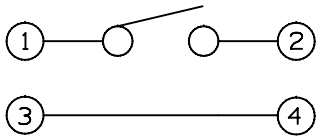
TITLE	PRODUCT SPECIFICATIONS	
MODEL No.	TACT SWITCH	PAGE 1/1

Caution

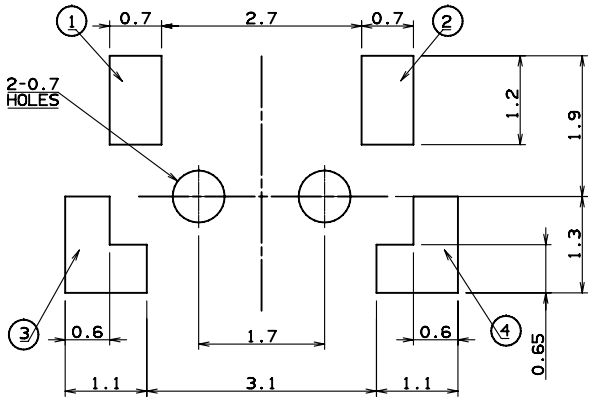
1. When terminals are exposed to mechanical stress during soldering, it may cause degradation in deformation and electrical property.
2. Through-hole PC board, or a PC board thickness other than the recommendation may cause larger heat stress. Prior verification is highly recommended.
3. In prior to the 2nd soldering switch shall be stable with normal temperature. It may cause deformation of switch, loose terminals, terminal removed from PCB, and / or degradation of electric property.
4. Verify samples with actual mass production conditions.
5. The products are designed and manufactured for direct current resistance. Individual consultation is recommended for use of other resistances such as inductive (L) or capacitive (C) .
6. The sizes of holes and patterns on a PC board for mounting a switch, be as per the recommended dimensions in the product drawings.
7. This switch is designed for manually operated units. Must not use this switch for a mechanical detection unit. For detection purposes, please use our detection switch.
8. The switch will be break if impact force or a greater stress than that specified is applied. Take great care not to let the switch be subject to greater stress than specified.
9. Do not apply a force from the side of the stem
10. Be sure to push the center of switch for "without-stem" type. Extreme care is required for a hinge structure type. as the activation point may shift when it is pressed down.
11. The circuit setting (software setting) shall be ensured for error-free operations, caused by bounce and chattering as specified by each model of the switches.
12. Prior verification is needed to ensure that no corrosive gas-generating components are used near our switch. It may give negative influence such as contact failure.
13. Contact resistance of a carbon contact type may very depending on push force. Confirm that it functions sufficiently in using TACT switch with a voltage divider circuit.
14. Be aware of dust intrusion into a non dust-proof TACT switch.
15. Storage
    - ① Storage the products as delivered, at a normal temperature and humidity, without direct sunshine and corrosive gas ambient. Use them at an earliest possible timing, not later than six months upon receipt.
    - ② After breaking the seal, keep the products in a plastic bag to prevent out ambient air, store them in the same environment as above, and use all as soon as possible.
    - ③ Do not stack too many switches.
    - ④ Store the key switches in released position.
16. All specification can be changed to improve performance without any notice.

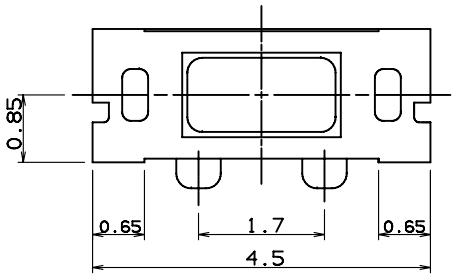


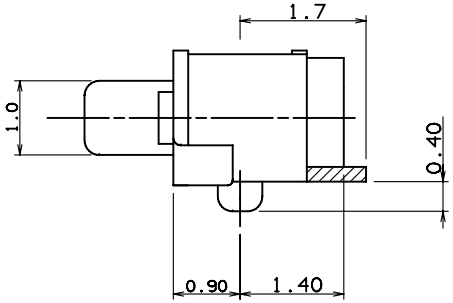
CIRCUIT DIAGRAM

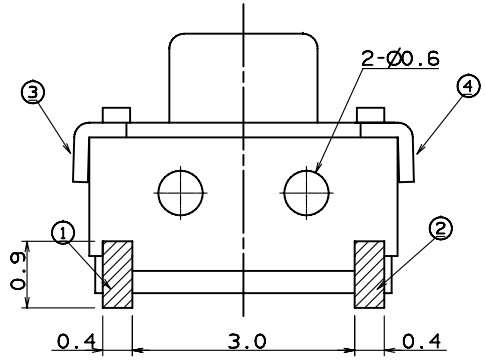


P.C.B LAND DIMENSION









NOTES

1. RATING : DC 12V / 20mA Max
2. CIRCUIT : 1C - 1P
2. CONTACT RESISTANCE : 100mΩ MAX
3. STROKE : 0.2 ±0.1mm
4. OPERATING FORCE : 160 ±50gf
5. OPERATING LIFE : 100,000 TIMES
6. NON SPECIFIED DIMENSIONS
   TOLERANCE : ±0.2mm

No.	PART NAME	Q'TY	MATERIAL	S I Z E	TREAT.	REMARKS

5				3RD ANGLE PROJECTION	UNIT m/m	SCALE 1	MODEL	MT 1100E-2
4								
3				APPROVED	CHECKED	DESIGNED	DWG.NAME	ASS'Y DIAGRAM
2								
1							DWG.NO.	
NO.	DATE	NOTE	SIGN					

MYUNG DO SYSTEM