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### 1. GENERAL MATTERS

- 1.1 Application : This specification is applied to low current circuit tactile switch for electronic equipment.
- 1.2 Operating temperature range : -20  $\sim$  70 °C, 45  $\sim$  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°C in temperature, 45 ~ 85% RH and 860 ~ 1060mbar in atmospheric pressure.
   Should any doubt arise in judgement, tests shall be conducted at 20±2°C,

 $65\pm5\%$  RH and  $860 \sim 1060$  mbar.

## 2. RATED VOLTAGE AND CURRENT.

As per individual manufactured drawing.

	PROPERTY	TEST CONDITIONS	PERFORMANCE
3.1	Contact arrangement		* 1 pole, 1 throw.
3.2	Contact resistance	Measured at DC 5V 10 <sup>mA</sup> or by ohmmeter allowing a small current at 1KHz with a load of 150% of the actuating force.	* As per individual manufactured drawing.
3.3	Insulation resistance	DC 100V is applied between terminals and between terminals and earth for 1minute ±5seconds.	* Greater than 100 MΩ.
3.4	Dielectric strength	AC 250V (50 $\sim$ 60 <sup>Hz</sup> ) is applied between terminals and between terminals and push for 1 minute.	* No insulation defect shall be observed.
3.5	Bounce	Measured by lightly striking the center of the button stem at a rate of 3 operations/sec	* less than 10 msec.

## 3. ELECTRICAL PERFORMANCE

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## 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,180gf,250gf,260gf : greater than 50gf. '* 100gf,130gf : greater than 30gf.
4.3	Stop strength	A static force of 3 Kgf 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		* As per individual manufactured drawing.
4.6	Arrangement of action		* Tactile feed-back.

# 5. DURABILITY

	PROPERTY	TEST CONDITIONS	PERFORMANCE
5.1	Operating life	<ul> <li>The test in conducted according to the below.</li> <li>(1) DC 5V 5mA resistive load.</li> <li>(2) Rate of operation : 60 cycle/min</li> <li>(3) Actuating force : 150% of actuating force</li> <li>(4) Operating cycle : As per individual manufactured drawing.</li> </ul>	<ul> <li>Contact resistance : 500mΩ maximum.</li> <li>Bounce : 20m sec max.</li> <li>Actuating force : within ± 30% of the initial value.</li> <li>Insulation resistance : 10 MΩ minimum.</li> </ul>

## 6. WEATHER PROOF

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.
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	PROPERTY	TEST CONDITIONS	PERFORMANCE
6.2	Dry heat proof	After testing at 85°C for 96hours. the sample is allowed to stand under normal temperature for 1hour and measurement is performed within 1 hour after that.	* The requirement in item 3 and 4 shall be satisfied.
6.3	Damp heat proof	After testing at 60±2°C 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.	<ul> <li>Insulation resistance : 10 MΩ minimum</li> <li>Dielectric strength : same as item 3.4.</li> <li>Contact resistance : same as item 3.2.</li> </ul>
6.4	Thermal cycling	$\begin{array}{c} 1 \text{ cycle} \\ +65^{\circ} \text{C} \\ -10^{\circ} \\ \hline \\ 2H \\ 1H \\ 1$	* The requirement in item 3 and 4 shall be met.

### 7. REFLOW SOLDERING

- 7.1 Reflow soldering conditions
  - 1) Preheat ----- 150  $^\circ\!\!\!C$   $\sim$  200  $^\circ\!\!\!C$  , 120  $\pm$ 20 (sec)
  - 2) Peak temperature --- 260°C max. 10 (sec)
  - 3) Soldering area temperature -----  $217^{\circ}$ C, 90 ~ 120 (sec)

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### 8. Manual soldering

- 8.1 Soldering temperature ----- 350  $^\circ\!\!C\pm5\,^\circ\!\!C$
- 8.2 Soldering time ----- 5(sec)

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재질증명서 (CERTIFICATION OF MATERIAL) 
 작성<검토<승인</th>

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#### 일 자 DATE 30/7/2012 제품명 ITEM TACT SWITCH

제품 번호 JT1188U(EM)

상기 제품은 하기재료를 사용하고 있음을 증명합니다. (The above item is certified to use with following materials.)

No.	구성부품명		원재료(M	난연성	UL	색상		
	(Part name)	Material name	Treatment	Manufacturer	Nationality	(Flame cless)	(File No.)	(Color)
1	CASE	LCP		POLYPLASTICS	JAPAN	UL 94V0	E106764	NATURE
2	STEM	РРА		SOLVAY	U.S.A	UL 94V0	E95746	IVORY
3	COVER	STAINLESS STEEL		SAMSUNG	KOREA			
4	TERMINAL	BRASS	Ag plating	CHALCO	CHINA			
5	CONTACT	STAINLESS STEEL	Ag clad	TOYO SETHAKU	JAPAN			
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