	SPECIFICATION	Page : 1 /4
	MULTI WAY SWITCH	

1. GENERAL

1.1 Application : This specification is applied to MULTI WAY SWITCH for eletronic equipment.

1.2 Operating Temperature range : -40℃ ~ 85℃

1.3 Storage temperature range : -40℃ ~ 90℃. However, 96 hours maximum for continuous storage over a range -20℃ ~ -40℃ and a range 70 ~ 85℃.

1.4 Test Conditions : The standard test conditions shall be 5℃~ 35℃ in temperature, 45 ~ 85% RH and 860~1060mbar in atmospheric pressure. Should any doubt arise in judgment, tests shall be conducted at 20±2℃, 65±5% RH and 860~1060mbar.

2. RATED VOLTAGE AND CURRENT

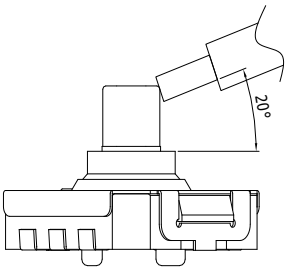
DC 12V 50mA

3. ELECTRICAL PERFORMANCE

	PROPERTY	TEST CONDITIONS	PERFORMANCE
3.1	Contact resistance	Shall be measured at DC 5V 10mA by voltage drop method and with 150% of operating force.	* less than 100 mΩ.
3.2	Insulation resistance	DC 100V is between terminals and between terminals and earth for 1minute.	* Greater than 100 MΩ.
3.3	Dielectric strength	AC 100V (50 ~ 60Hz) is applied between terminals and between terminals and earth for 1 minute. Cut off Current : 1~2mA	* No insulation defect shall be observed.
3.4	Bounce	Measured by lightly striking the center of the button stem at a rate of 3 operations/sec.	* less than 10 msec.

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4. MECHANICAL PERFORMANCE

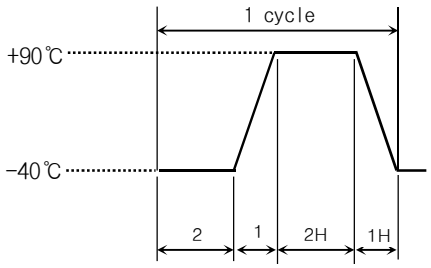
	PROPERTY	TEST CONDITIONS	PERFORMANCE
4.1	Operating force	1) CENTER PUSH Operating force shall be applied to the stem in axially, and than the maximum force until reaching the end shall be measured.	* 360±70gf
		2) 4 DIRECTIONS Operating force shall be applied to the stem, and than the maximum force until reaching the end shall be measured. 	* 240±70gf
4.2	Travel	1) CENTER PUSH Operating force shall be applied to the stem in axially, and than the amount of movement until reaching the end shall be measured.	* 0.20+0.15/-0.05mm
		2) 4 DIRECTIONS Operating force shall be applied to the stem in perpendiccularly, and than the amount of angle movement unitl reaching the end shall be measured.	* 0.35+0.3/-0.2mm
4.3	Return force		* greater than 10gf
4.4	Stop strength	A static force of 3 Kgf shall be applied to the direction of operation for 5 seconds.	* Shall be free from mechanical and electrical abnormalities.
4.5	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 abnormalities.
4.6	Solder heat resistance	Switch shall be checked after following test. (Reflow soldering) (1) Peak temperature : 260℃ (2) Peak time : 10sec	* The requirement in item 3 and 4 shall be satisfied.
4.7	Solderability	Switch shall be checked after following test. (Reflow soldering) (1) Temperature : 250±5℃ (2) Time : 3±0.5sec	* 95% or more of immersion area shall be covered with new solder

5. DURABILITY

	PROPERTY	TEST CONDITIONS	PERFORMANCE
5.1	Operating life	The test in conducted according to the below. (1) DC5V 5mA resistive load (2) Rate of operation : 120 cycle/min (3) Actuating force -. Center push : 422gf -. 4 Directions : 310gf (4) Operating cycle : As per individual manufactured drawing.	* Contact resistance : 500mΩ max. * Insulation resistance : 10MΩ min. * Actuating force : within +50/-30% of the initial value.
5.2	Vibration resistance	Switch shall be checked after following test. (1) Vibration frequency range : 10 ~ 55 ~ 10Hz (1 cycle) (2) Total amplitude : 1.5mm (3) This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular axis.	* The requirement in item 3 and 4 shall be satisfied.

6. WEATHER PROOF

	PROPERTY	TEST CONDITIONS	PERFORMANCE
6.1	Cold proof	After testing at -40±2℃ ℃ 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 90±2℃ ℃ 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℃ 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.	* Contact resistance : 1Ω max. * Insulation resistance : 10MΩ min. * The others, item 3 and 4 shall be satisfied.

6.4	Thermal cycling	 After the test conducted under 5 cycles the sample is allowed to stand under normal emperature and humidity conditions for 1 hour, and the measurement is performed within 1 hour.	* The requirement in item 3 and 4 shall be satisfied.
6.5	Salt Mist	Switch shall be checked after following test. (1) Temperature : 35±2℃ (2) Salt solution : 5±1%(Solids by weight) (3) Duration : -. 8 hours spray, 16 hours pause(1 cycle) -. Total : 2 cycles(48 hours) After the test, salt deposit shall be removed in running water.	* No remarkable corrosion shall be recongnized in metal part.

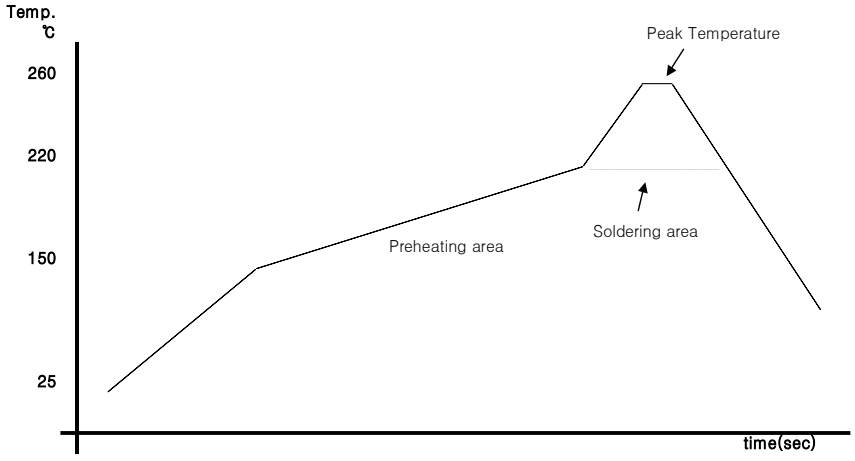
7. SOLDERING CONDITIONS

7.1 REFLOW SOLDERING CONDITIONS

1) Preheat ---------- 150℃ ~ 200℃, 120 ±20 (sec)

2) Peak temperature --- 260℃ max. 10 (sec)

3) Soldering area temperature ------ 217℃, 90 ~ 120 (sec)



7.2 Manual soldering

1) Soldering temperature : less than 350℃

2) Soldering time : Within 3 sec