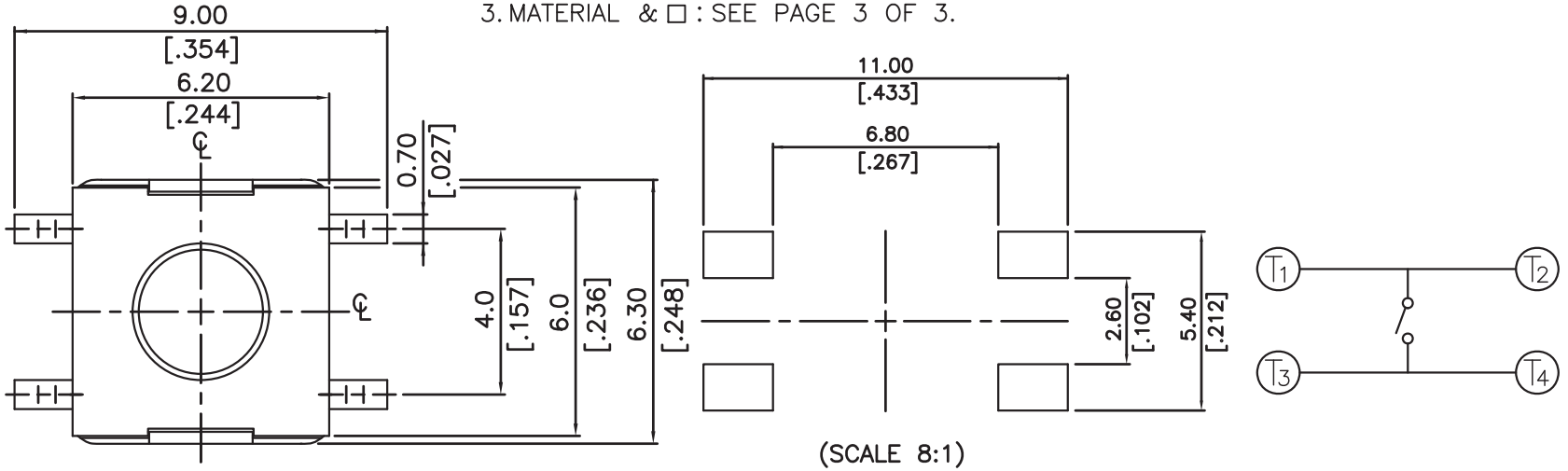
嘉尼企業股份有限公司 CANAL ELECTRONIC CO.,LTD.

NOTE:

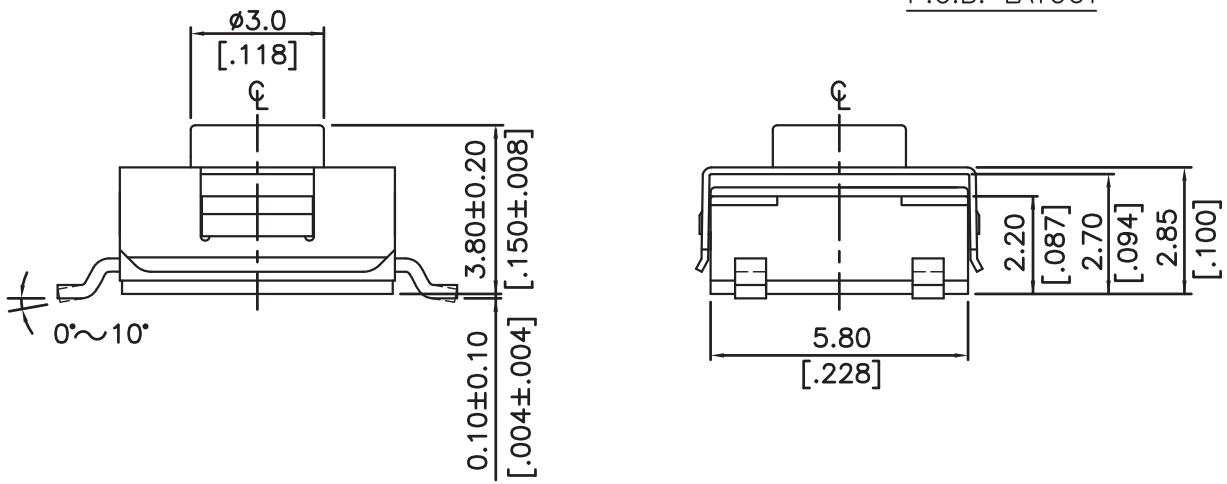
1. ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.
2. GENERAL TOLERANCES MAX.±0.20mm.
3. MATERIAL & □ : SEE PAGE 3 OF 3.



(SCALE 8:1)

P.C.B. LAYOUT

CIRCUIT DIAGRAM



REVISION	DESCRIPION	REVISED BY	TOLEANCES .X± .XX± ANGLE ½°				UNIT	mm	PART NAME	DTSMW SPEC DRAWING	DWG NO
4			DRAWN BY	Jelly	DESIGNED BY	蔡劍	SCALE				WS1757A
3											
2			CHECKED BY		APPROVED BY		DATE	2012. 01. 18	PART NO	DTSMW-69	
1 2012. 01. 18	換新圖框, 重新出圖	Jelly									

1. Style

This specification describes “TACTILE SWITCH WASHABLE TYPE”, mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

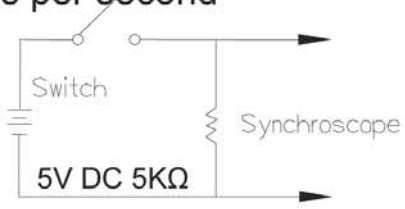
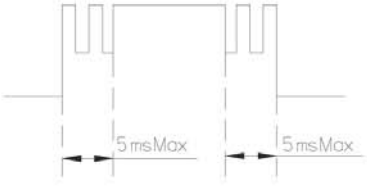
1.1 Operating Temperature Range : -25 ℃~+70℃

1.2 Storage Temperature Range : -40℃~+80℃

2. Current Range: 50mA, 12V DC

3. Type of Actuation: Tactile feedback

4. Test Sequence:

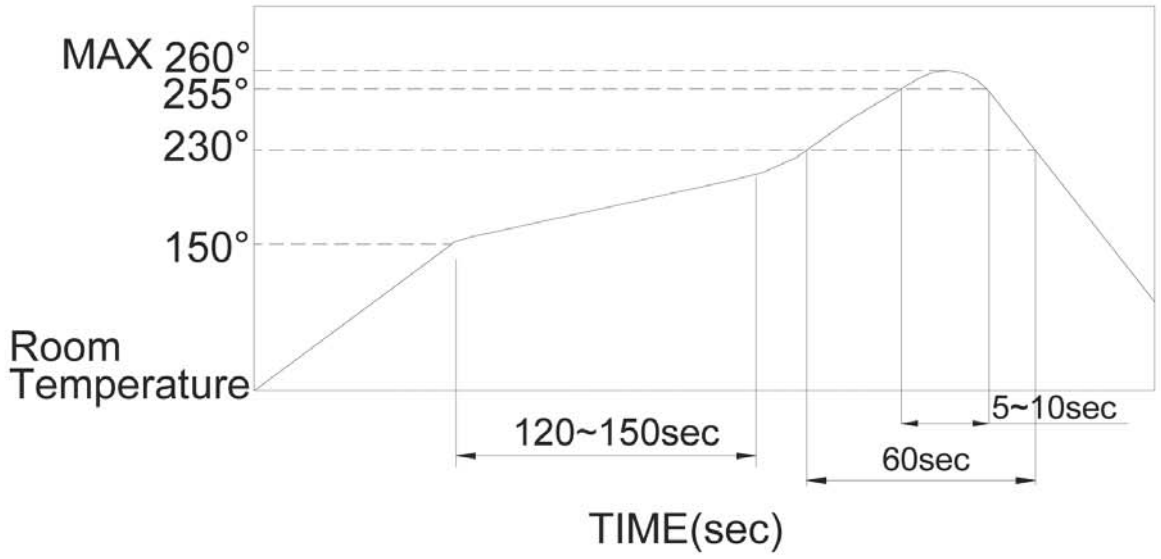
	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
APPEARANCE	1	Visual Examination	By visual examination check without and out pressure & testing.	There shall be no defects that affect the serviceability of the product
ELECTRIC PERFORMANCE	2	Contact Resistance	Applying a static load 1.5-2 times the operating force to the center of the stem, measurements shall be made with a 1 kHz small current contact resistance meter	100mΩ Max
	3	Insulation Resistance	Measurements shall be made following application of 500 V DC potential across terminals and cover for 1 minute ± 5 seconds	100MΩ min
	4	Dielectric Withstanding Voltage	250 V AC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute	There shall be no breakdown or flashover
	5	Capacitance	1 MHz ±10 kHz	5 pF max.
	6	Bounce	3 to 4 operations at a rate of 1 cycles per second 	5 m seconds max. 

7	Operating Force	Applied in the direction of operation 		65、67、69Y	65、67、677、69T	66N,677N、68S	64、65、69、67R	64、65、69、67N
			OF	520±130g [5.1±.127 N]	360±90g [3.528±.882N]	160±50g [1.568±.49N]	260±70g [2.548±.686N]	180±50g [1.764±.49N]
8	Stroke	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem to a stop shall be measured	1)0.25+0.2/-0.1mm~66N、677N、677T、68S 2)0.45±0.2mm~(64、69、67、65R、N)(65T)(65、69、67Y) 3)0.6±0.2mm~69、67T					
9	Stop Strength	Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf(29.4N) shall be applied in the direction of stem operation for a period of 15 seconds	1)As shown in item 4~7 2)Contact Resistance: 200 mΩ Max 3)Insulation Resistance: 10 MΩ min					
10	Solder Heat Resistance	■Through Hole Type 1)Soldering Temperature: 260±5℃ 2)Duration of Solder Immersion: 5±1 sec 3)Frequency of Soldering Process 2 times max. (PCB is 1.6mm in thickness) 4) SMT Type ~ Series(4/4)	1)Shall be free from pronounced backlash and falling-off or breakage terminals 2)As shown in item 4、5 3)Contact Resistance: 200 mΩ Max 4)Insulation Resistance: 10 MΩ min					
11	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1)Frequency: 10-55-10Hz in 1-min/cycle. 2)Direction: 3 vertical directions including the directions of operation 3)Test time:2 hours each direction 4) Swing distance=1.5mm	1)As shown in item 4~7 2)Contact Resistance: 200 mΩ Max 3)Insulation Resistance: 10 MΩ min					
12	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F 1)Acceleration; 50G 2)Action time:11±1m seconds 3)Testing Direction: 6 sides 4)Test Cycle:3 times in each direction	Ditto					
13	Solderability	1)Through Hole Soldering Temperature：245±3℃ 2)Lead-Free solder：M705E JIS Z 3282 A (Tin 96.5%，Silver 3%，Copper 0.5%) 3)Flux：5~10 sec 4)Duration of solder Immersion：5±1 sec	No anti-soldering and the coverage of dipping into solder must more than 66% was requested.					

MECHANICAL PERFPRMANCE	14	Seal (Washable)	The switch is placed at a depth of 5cm in fluorocarbon FC-40 for 1 minute at 50℃	1)Visually monitor the successive bubbling distance within 25mm 2)As show in item 2~5.
	■ Seal Characteristics: 1)Do not wash immediately after soldering, do it after returning the switches back to thermal temperature. 2)Do not apply external force to the switch during washing. 3)The switch cannot be used where subject to direct contact with water. (except for cleaning processing.)			
DURABILITY	15	Operating Life	Measurements shall be made following the test forth below: 1)5mA,5 V DC resistive load 2)Applying a static load the operating force to the center of the stem in the direction of operation 3)Static Load = OF max. 4)Cycle of Operation: 100,000 cycles~66N、68S、677T 500,000 cycles~67、69、65、64R、N、T 300,000 cycles~65、69、67Y	1)As shown in item 4、5 2)Operating force:±50% of initial force 3)Contact Resistance: 10Ω Max 4)Insulation Resistance: 10MΩ min 5)Bounce: 10 m seconds Max
WEATHER-PROOF	16	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1)Temperature:-25±3℃ 2)Time:96 hours	1)As shown in item 4~7 2)Contact Resistance: 200 mΩ Max 3)Insulation Resistance: 10 MΩ min
	17	Resistance High Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature:80±2℃ 2)Time:96 hours	Ditto
	18	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: 1)Temperature:40±2℃ 2)Relative Humidity:90~95% 3)Time:96 hours	Ditto

5. SOLDERING CONDITIONS:

■ Condition for Soldering –S.M.T Series



■ The condition mentioned above is the temperature on the Cu foil of the PCB surface.

There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc. Care, therefore, should be used not to allow switch's surface temperature to exceed 260℃.

■ Manual Soldering

Soldering Temperature	Max.350℃
Continuous Soldering Time	Max. 5 seconds

■ Precautions in Handling

1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
2. Please make sure that there is no flux rose over the surface of the PCB.
3. Please make sure that there is no flux rose over the surface of the PCB