



1. Style

This specification describes "Sub-Miniature Toggle Switches", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

Operating Temperature Range : $-30\text{ }^{\circ}\text{C}\sim+85\text{ }^{\circ}\text{C}$.

2. Current Range:

2.1 Silver Plating Standard :

Plating		Rating
Q=Silver	Fixed Terminal : Silver plated over copper alloy. Movable contact : Silver plated over copper alloy.	3Amps @120VAC or 28VDC. 1Amps @250VAC.
C=Gold over silver	Fixed Terminal : Copper alloy with silver plated over gold plate. Movable contact : Copper alloy with silver plated over gold plate.	
S=Silver, pure-tin	Fixed Terminal : Copper alloy with silver plated , pure-tin. Movable contact : Silver plated over copper alloy.	
K=Gold over silver pure-tin	Fixed Terminal : Copper alloy with silver plated over gold plate, pure-tin. Movable contact : Copper alloy with silver plated over gold plate.	

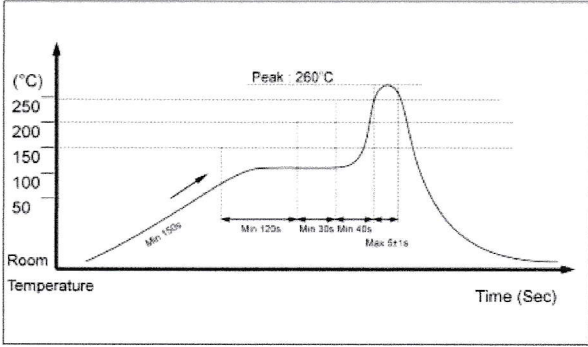
2.2 Gold Plating Standard :

Plating		Rating
R=Gold	Fixed Terminal : Copper alloy with gold Plate over nickel plate. Movable contact : Copper alloy with gold Plate over nickel plate.	0.4 VA Max. @20VAC or DC Max.
G=Gold, pure-tin	Fixed Terminal : Copper alloy with gold plated over nickel plate, pure-tin. Movable contact : Copper alloy with gold plated over nickel plate.	

3. Type of Actuation: Sub-Miniature Toggle Switches.

4. Test Sequence:

ELECTRIC PERFORMANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
	1	Visual Examination	By Visual Examination check without and out pressure & testing.	There shall be no defects that affect the serviceability of the product.
	2	Contact Resistance	@2-4VDC 100mA. For both silver and gold plated contacts.	20mΩ Max
	3	Insulation Resistance	Measurements shall be made following application of 1000 V/ DC 100mA potential across terminals and cover for 1 minute.	1000MΩ min/1000V
	4	Dielectric Withstanding Voltage	1000 VAC(50Hz or 60Hz)0.5mA shall be applied across terminals and cover for 1 minute.	There shall be no breakdown or flashover.

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
MECHANICAL PERFORMANCE	5	Solder Heat Resistance	<p>①Manual Soldering : Soldering Temperature : Max. 350°C Continuous Soldering Time : Max. 5 seconds.</p> <p>②WAVE Soldering : Soldering Temperature:260±5°C. Duration of Solder Immersion: 5 ±1 seconds</p> <p>Temperature Profile</p>  <p>③Frequency of Soldering Process 2 times max. (PCB is 1.6mm in thickness)</p> <p>■ Precautions in Handling Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.</p>	<p>①Shall be free from pronounced backlash and falling-off or breakage terminals</p> <p>②As shown in item 2~4.</p>
	6	Vibration	<p>Shall be vibrated in accordance with Method 201A of MIL-STD-202F</p> <p>①Frequency: 10-55-10Hz in 1-min/cycle.</p> <p>②Direction: 3 vertical directions including the directions of operation</p> <p>③Test time:2 hours each direction.</p>	As shown in item 2~4

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	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
MECHANICAL PERFORMANCE	7	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F ①Acceleration; 50g ②Action time: 11±1m seconds. ③Testing Direction: 6 sides. ④Test Cycle: 3 times in each direction.	As shown in item 2~4
	8	Actuation Force	MODEL-1305N MECHANICAL TEST 500gram 、1000gram 、 2000gram.	At for test the force. Force : 250±100grams.
OPERATING LIFE	9	Operating Life	Measurements shall be made following the test forth below: ①3A@120VAC resistive load—silver plated. 1A@250VAC resistive load—silver plated. 0.4VA max@ 20VAC max resistive load—gold plated. ② Rate of Operation: 6-8operation cycles per minute. ③ Electronics Life Test: 6,000 cycles.	① Dielectric Strength : 1000V. ② Insulation Resistance: 1000MΩ min.
			Mechanical Life Test: 30,000 cycles.	Contact Resistance: 20mΩ Max.
HUMIDITY RESISTANCE	10	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: ①Temperature: -30±3°C ②Time: 96 hours.	As shown in item 2~4.

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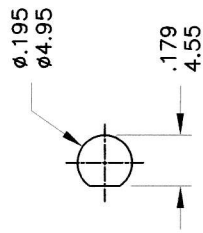
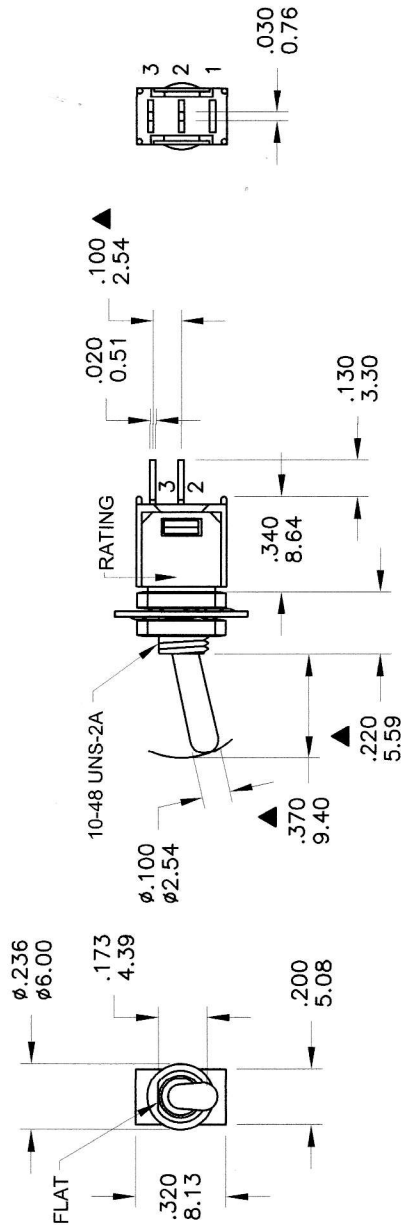
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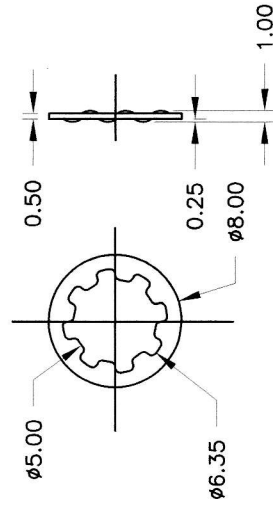
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS	
HUMIDITY RESISTANCE	11	Resistance High Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made:</p> <p>①Temperature:85±2°C ②Time:96 hours.</p>	As shown in item 2~4.
	12	Resistance Humidity	<p>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:</p> <p>①Temperature:40±2°C ②Relative Humidity:90~95% ③Time:96 hours.</p>	<p>①Contact Resistance: 20mΩ Max. ②Insulation Resistance: 1000MΩ min.</p>
	13	The Salt Testing	<p>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:</p> <p>①Temperature:35±2°C ②The ratio of salt-water : 5% ③The spray amount of salt- water : 1~2 ml/h. ④ Time:48 hours.</p>	The testing standard based on bubble, crack, And magnifying glass with gauge.

Nov.26.2013

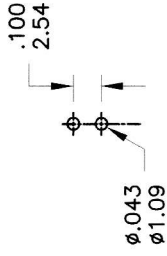


Without locking ring.

PANEL MOUNTING



P.C. MOUNTING



Model No.	POS.1	POS.2	POS.3
2MS9	ON	NONE	OFF
Term. Comm.	2-3	N/A	OPEN
SCHEMATIC	2 Comm.		2 Comm.

SWITCH FUNCTION

SPECIFICATIONS

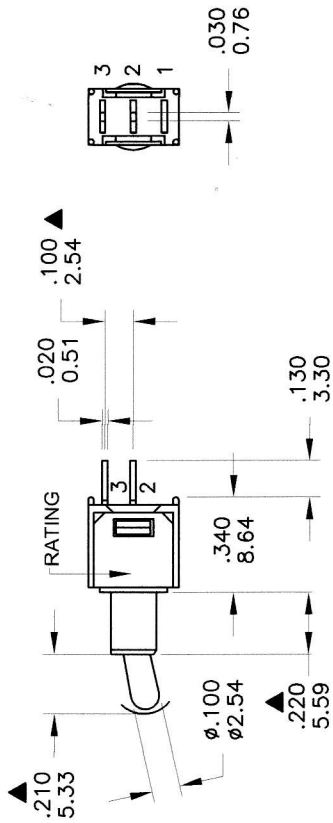
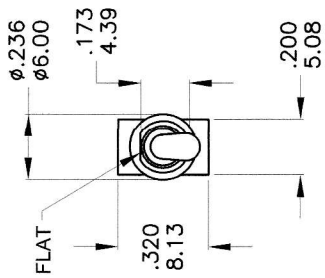
MECHANICAL LIFE: 30,000 make-and-break cycles.
CONTACT RESISTANCE: 20mΩ max. initial @ 2-4VDC
 100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000MΩ min.
DIELECTRIC STRENGTH: 1,000 V RMS@sea level.
OPERATING TEMPERATURE: -30° C to 85° C.

MATERIALS

CASE - Diallyl phthalate(DAP)(UL94V-0)
ACTUATOR - Brass,chrome plated
BUSHING - Brass,nickel plated
HOUSING - Stainless Steel
SWITCH SUPPORT - Brass,tin plated.
TERMINALS/CONTACT - Brass, with Silver or gold plated.

RATING :

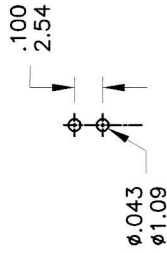
R : 0.4 Volt-Amps(VA) max. @20V max.(AC or DC)
 Q : 1Amp @250VAC
 3Amps @120 VAC or 28 VDC



Model No.	POS.1			POS.2			POS.3		
	2MS9	ON			NONE			OFF	
Term. Comm.	2-3			N/A			OPEN		
SCHEMATIC									

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