

1A Series Specification

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1. Style

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

Operating Temperature Range : -30 °C~+85°C.

2. Contact Rating :

2.1 Silver Plating Standard :

Plating		Rating
Silver	Fixed Terminal : Silver plated over copper alloy. Movable contact : Silver plated over copper alloy.	5Amps @120VAC 2Amps @250VAC.
Gold over silver	Fixed Terminal : Copper alloy with silver plated over gold plate. Movable contact : Copper alloy with silver plated over gold plate.	
Silver, tin-lead	Fixed Terminal : Copper alloy with silver plated , tin-lead. Movable contact : Silver plated over copper alloy.	
Gold over silver tin-lead	Fixed Terminal : Copper alloy with silver plated over gold plate, tin-lead. Movable contact : Copper alloy with silver plated over gold plate.	

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2.2 Gold Plating Standard :

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

3.Type of Actuation: Miniature Toggle Switches.

4. Test Sequence:

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
ELECTRIC PERFORMANCE	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.	10mΩ Max
	3	Insulation Resistance	Measurements shall be made following application of 1000 V/ DC 100mA potential across terminals and cover.	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.

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	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
MECHANICAL PERFORMANCE	5	Solder Heat Resistance	<p>WAVE SOLDERING :</p> <p>①Soldering Temperature:260±5℃.</p> <p>②Duration of Solder Immersion: 5 ±1 seconds</p> <p>③Frequency of Soldering Process 2 times max.(PCB is 1.6mm in thickness)</p> <p>■ Precautions in Handling</p> <p>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
	7	Shock	<p>Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F</p> <p>①Acceleration; 50g</p> <p>②Action time: 11±1m seconds.</p> <p>③Testing Direction: 6 sides.</p> <p>④Test Cycle: 3 times in each direction.</p>	As shown in item 2~4
	8	Actuation Force	<p>MODEL-1305N MECHANICAL TEST</p> <p>500gram ~ 1000gram ~ 2000gram.</p>	<p>At for test the force.</p> <p>Force:250±100grams.</p>
OPERATING LIFE	9	Operating Life	<p>Measurements shall be made following the test forth below:</p> <p>①5A, 120VAC resistive load—silver plated. 2A, 250VAC resistive load—silver plated. 0.4A, 20VAC resistive load—gold plated.</p> <p>② Rate of Operation: 6-8operation cycles per minute.</p> <p>③ Electronics Life Test: 6,000 cycles.</p>	<p>① Dielectric Strength : 1000V.</p> <p>② Insulation Resistance: 1000MΩ min.</p>
			<p>Mechanical Life Test: 40,000 cycles.</p>	<p>Contact Resistance: 10mΩ Max.</p>

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HUMIDITY RESISTANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
	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: $-40 \pm 3^{\circ}\text{C}$ ②Time: 96 hours.	As shown in item 2~4.
	11	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: ①Temperature: $85 \pm 2^{\circ}\text{C}$ ②Time: 96 hours.	① As shown in item 3~4. ② Insulation Resistance: $1000\text{M}\Omega$.
	12	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: ①Temperature: $40 \pm 2^{\circ}\text{C}$ ②Relative Humidity: 90~95% ③Time: 96 hours.	① Contact Resistance: $10 \text{ m}\Omega$ Max. ② Insulation Resistance: $1000\text{M}\Omega$ min.
	13	The Salt Testing	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: ①Temperature: $35 \pm 2^{\circ}\text{C}$ ②The ratio of salt-water : 5% ③The spray amount of salt- water : 1~2 ml/h. ④ Time: 48 hours.	The testing Standard based on bubble, crack, And magnifying glass with gauge.

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Recommended Solder Profile

Temperature Profile

