

# R1399 SERIES SPECIFICATION

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## 1. Style :

This specification describes “Snap-Acting Pushbutton 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. Current Range :

### 2.1 Silver Plating Standard :

Plating		Rating
<b>C=Gold over silver</b>	Fixed Terminal : Copper alloy with silver plated over gold plate. Movable contact : Copper alloy with silver plated over gold plate.	100mA,24 VDC

### 2.2 Gold Plating Standard :

Plating		Rating
<b>R=Gold</b>	Fixed Terminal : Copper alloy with gold plate over nickel plate. Movable contact : Copper alloy with silver plated over gold plate.	500mA @48VAC Max. 200mA @50VDC Max. 200mA @250VAC Max.

## 3. Type of Actuation : Snap-Acting Pushbutton 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.	100mΩ Max.

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	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
<b>ELECTRIC PERFORMANCE</b>	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	1500 VAC(50Hz or 60Hz) shall be applied across terminals and cover for 1 minute.	There shall be no breakdown or flashover.
<b>MECHANICAL PERFORMANCE</b>	5	Solder Heat Resistance	Through Hole Type <b>■ Wave Soldering :</b> ① Soldering Temperature : 260±5 . ② Duration of Solder Immersion : 5 ±1 seconds. ③ PCB is 1.6mm in thickness <b>■ Manual Soldering :</b> ① Soldering Temperature : 350±5 . ② Duration of Solder Heated : 5±1 seconds.	① Shall be free from pronounced backlash and falling-off or breakage terminals. ② As shown in item 2~4.
	6	Actuation Force	MODEL-1305N MECHANICAL TEST 500gram、 1000gram、 2000gram. OFF TO ON Total Travel	① At for test the force. Force : 2~5N. ② Total Travel : 2.5 mm±0.25 mm
<b>OPERATING LIFE</b>	7	Operating Life	Measurements shall be made following the test forth below : ① 100mA,24 VDC resistive load - gold over silver plated. Electronics Life Test : 10,000 cycles. ② Electronics Life Test : 500,000 cycles. ③ Rate of Operation : 6-8 operation cycles per minute. ④ Mechanical Life Test : 1,000,000 cycles.	① Electronics Life Test : As shown in item 3~4. ② Mechanical Life Test : As shown in item 2~4.

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HUMIDITY RESISTANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
	8	Resistance Low Temperature	<p>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 :</p> <p>①Temperature : <math>-40\pm 3^{\circ}\text{C}</math>. ②Time : 96 hours.</p>	As shown in item 2~4.
	9	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 : <math>85\pm 3^{\circ}\text{C}</math>. ②Time : 96 hours.</p>	As shown in item 2~4.
	10	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 : <math>40\pm 2^{\circ}\text{C}</math>. ②Relative Humidity : 90~95%. ③Time : 96 hours.</p>	As shown in item 2~4.
	11	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 : <math>35\pm 2</math> . ②The ratio of salt-water : 5%. ③The spray amount of salt- water : 1~2 ml/h. ④Time : 48 hours.</p>	The testing standard based on bubble, crack, and magnifying glass with gauge.

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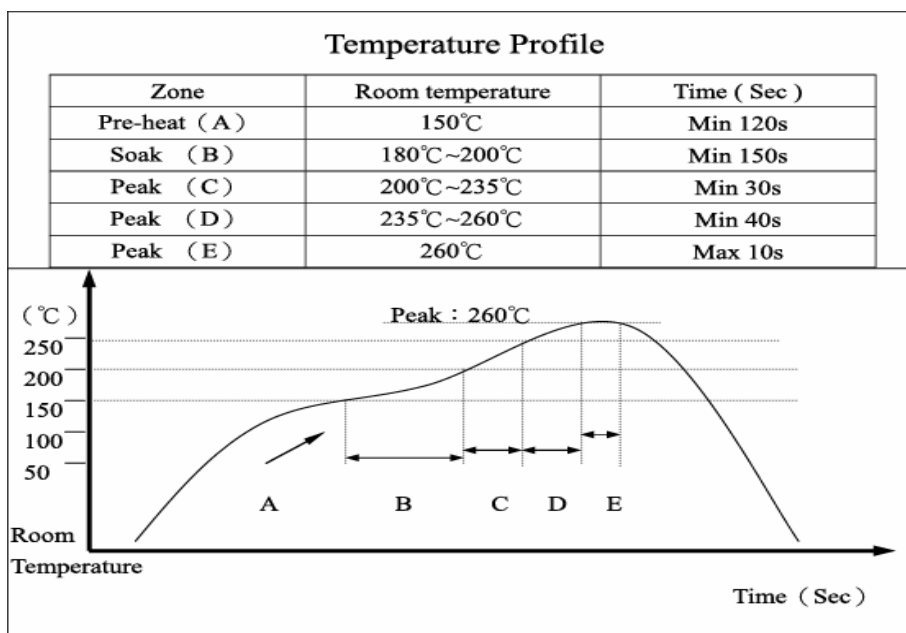
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<b>HUMIDITY RESISTANCE</b>	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS																																																																																							
	12	HSF	Refer ROHS Standard : The electronic electrical machinery product limits with six big chemical materials.	Cd : 100ppm Pb : 1000ppm Hg : 1000ppm Cr6+ : 1000ppm PBB, PBDE : 1000ppm																																																																																							
	13	Test of IP 67	Upper side : Protected against the effects of temporary immersion in water. (1m below the surface of the water for a duration of 30 min)	IP67 According to EN 60529 : 1991 + A1 : 2000 IEC 60529 : 2001																																																																																							
14	WITH LED ELECTRO OPTICAL	<table border="1"> <thead> <tr> <th rowspan="3">Lens Appearance</th> <th rowspan="3">Color</th> <th colspan="4">Electro-optical Data(AT 20 mA)</th> <th rowspan="3">Viewing Angle 2θ(1/2=α°) IF=5mA=</th> </tr> <tr> <th colspan="2">Vf(V)</th> <th colspan="2">Iv(mcd)</th> </tr> <tr> <th>Typ.</th> <th>Max.</th> <th>Min.</th> <th>Typ.</th> </tr> </thead> <tbody> <tr> <td rowspan="12">Water Clear</td> <td>Super White</td> <td>3.5</td> <td>4.0</td> <td>--</td> <td>370</td> <td>θ=80°</td> </tr> <tr> <td>Super Red</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>85</td> <td>θ=80°</td> </tr> <tr> <td>Super Yellow</td> <td>2.1</td> <td>2.6</td> <td>--</td> <td>80</td> <td>θ=80°</td> </tr> <tr> <td>Super Green</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>90</td> <td>θ=80°</td> </tr> <tr> <td>Super Blue</td> <td>3.5</td> <td>4.0</td> <td>--</td> <td>250</td> <td>θ=80°</td> </tr> <tr> <td>Super Pure Green</td> <td>3.5</td> <td>4.0</td> <td>--</td> <td>900</td> <td>θ=80°</td> </tr> <tr> <td>Super Yellow+</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>40</td> <td>θ=130°</td> </tr> <tr> <td>Super Green</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>20</td> <td>θ=130°</td> </tr> <tr> <td>Super Yellow+</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>35</td> <td>θ=130°</td> </tr> <tr> <td>Super Red</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>40</td> <td>θ=130°</td> </tr> <tr> <td>Super Red+</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>30</td> <td>θ=130°</td> </tr> <tr> <td>Super Green</td> <td>2.0</td> <td>2.6</td> <td>--</td> <td>13</td> <td>θ=130°</td> </tr> </tbody> </table>	Lens Appearance	Color	Electro-optical Data(AT 20 mA)				Viewing Angle 2θ(1/2=α°) IF=5mA=	Vf(V)		Iv(mcd)		Typ.	Max.	Min.	Typ.	Water Clear	Super White	3.5	4.0	--	370	θ=80°	Super Red	2.0	2.6	--	85	θ=80°	Super Yellow	2.1	2.6	--	80	θ=80°	Super Green	2.0	2.6	--	90	θ=80°	Super Blue	3.5	4.0	--	250	θ=80°	Super Pure Green	3.5	4.0	--	900	θ=80°	Super Yellow+	2.0	2.6	--	40	θ=130°	Super Green	2.0	2.6	--	20	θ=130°	Super Yellow+	2.0	2.6	--	35	θ=130°	Super Red	2.0	2.6	--	40	θ=130°	Super Red+	2.0	2.6	--	30	θ=130°	Super Green	2.0	2.6	--	13	θ=130°	4.0 Vf(V) Max.
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## 5. WAVE SOLDERING CONDITIONS :



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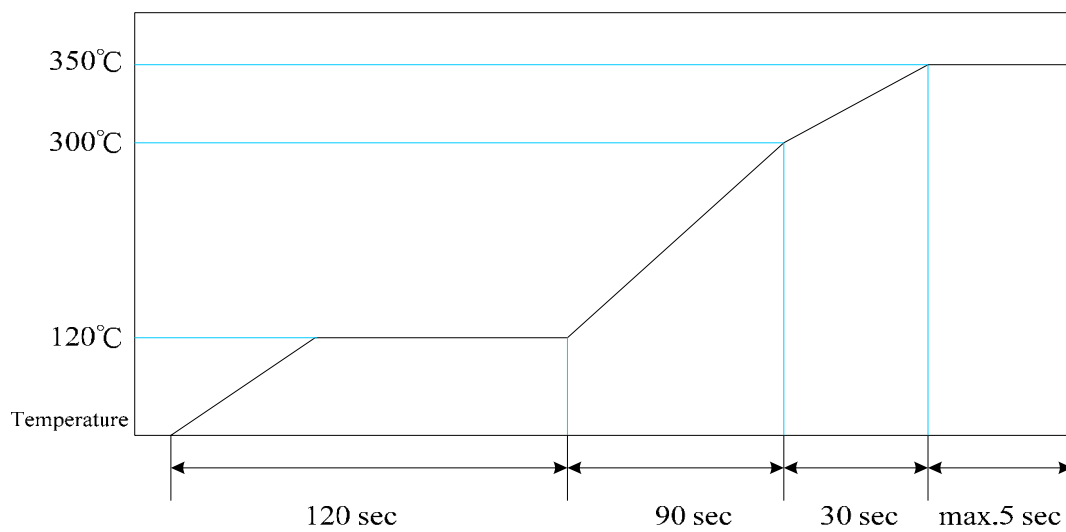
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## Manual Soldering

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



## 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.