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1. Scope

This specification applies to unified polarity type DC jack (Type 1 2 3 ④ 5) used in electronic equipment.

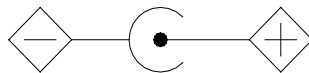
For DC input use.

Applicable Safety Standard / Applicable Standard

Applicable Safety Standard : Electrical Applicable and Material Control Law (Technical Requirement)

Applicable Standard : EIAJ RC-5320A “Plugs and jacks for coupling an external voltage power supply ”
(Unified polarity type)

3. Polarity



4. Standard atmospheric condition :

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows :

Ambient Temperature: 15°C to 35°C

Relative Humidity : 45% to 85%

Air Pressure : 86kPa to 106kPa

If there is any doubt about the results, measurements shall be made within the following limits :

Ambient Temperature: 20 ±2°C

Relative Humidity: 60% to 70%

Air Pressure : 86kPa to 106kPa

Storage Temperature Range: -20°C to 75°C

Operating Temperature Range: -10°C to 65°C

Operating temperature range is the range of ambient temperature for the component that can be operated continuously at rated voltage and rated current.

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
	2007.02.26	王勇	劉望全	夏正雄	
△x 1	2008.01.24	劉秀慧	夏正雄	郭遠峰	修改 Solderability
△x 2	2009.03.19	黃健瑋	郭素玲	郭遠峰	Add item 7 and modify item 9
△x 1	2012.07.02	李阮龍	郭素玲	郭遠峰	Modify the item 4.1

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2. Electrical characteristics

	Item	Condition	Specifications
1	Rated voltage/ Rated current	Type 1	DC 3.15V 2A
		Type 2	DC 6.3V 2A
		Type 3	DC 10.5V 2A
		Type 4	DC 13.5V 2A
		Type 5	DC 18.0V 2A
2	Insulation Resistance	A voltage of 500V DC shall be applied for a minute. Between conductors which should not make contact under normal conditions after which measurement shall be made.	100 M Ω MIN
3	Contact Resistance	Measurement shall be made at with small AC current, the frequency shall not exceed 1000 Hz(100Ma MAX).	30 m Ω MAX.
4	Dielectric Strength	Between conductors which should not make contact under normal conditions. 500V AC (50 to 60Hz) for 1 minute. (Trip current : 2mA)	Without distinct damage

3. Mechanical characteristics

	Item	Condition	Specifications
1	Operating Force	Measurement shall be made after insertion and withdrawal using standard plug gauge 3 times.	
		Insertion force	29.4N(3.0kgf) MAX
		Withdrawal force	2.94~29.4N (0.3~3.0kgf)
2	Terminal strength	A static load of 4.9N (500gf) shall be applied to the tip of the terminal for 10 sec in any direction.	There shall be no damage to the terminal such as cracks, looseness or play. Electrical and mechanical characteristics shall be satisfied.

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4. Endurance characteristics

Item	Condition	Specifications		
1 Resistance to Soldering Heat Test	Wave soldering Process			
	Profile Feature	Pb-Free Assembly	Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.	
		Topside PCB		Padside PCB
	Preheat -Temperature min -Temperature max -Time (ts min to max)	120°C (Ts1 max)		110°C (Ts min) 150°C (Ts max) 75 sec
	Peak/Classification Temperature	165°C (Tp1)		260°C ±5°C (Tp)
	Time within 5°C of actual Temperature (Tp)			10 sec (within 2 times every time 2-3 sec)
	Time 25°C to Peak temperature			3 minutes max
	Wave Soldering Temperature Profile are as below			
	⚠ About the plastic properties , Please refer to the data sheet of plastic.			
	<p>Temperature vs Time graph showing wave soldering profiles for Topside PCB (dashed red line) and Padside PCB (solid blue line). The graph includes a preheat phase (ts) and a peak phase (tp) with a 2-3 second dwell. Key temperature points are labeled: Ts min., Ts max., Tp, Tp1 max., and Ts1 max.</p>			
Soldering Iron Test Temperature of soldering Iron : 380±10°C Soldering time : 3±1 seconds		Same as Wave soldering Process		
Insertion force		29.4N(3.0kgf) MAX		
Withdrawal force		1.96~29.4N (0.2~3.0kgf)		

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Item	Condition		Specifications		
2	Solderability	Temperature of solder : 245°C \triangle 250°C±5°C Time of dip : 3 ±0.5 seconds Length of dip : 2 ±0.5mm (from top of terminal)		The soldered area shall be covered a minimum of 90% of the surface being immersed.	
3	Low Temperature Test	The jack shall be stored at a temperature of -25°C±2°C for 96 hours. And then it shall be subjected to the controlled recovery conditions for 30 minutes after which measurement shall be made.		There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied.	
4	High Temperature Test	The jack shall be stored at a temperature of 85°C±2°C for 96 hours. And then it shall be subjected to the controlled recovery conditions for 30 minutes after which measurement shall be made.		There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied.	
5	Operating Endurance	Insertion and withdrawal shall be made with the mating plugs and jacks for 5000 cycles at a speed of 10~20 cycles/minute.			
		DC POWER JACK	Insertion force	29.4N (3.0kgf) MAX	
			Withdrawal force	1.96~29.4N (0.2~3.0kgf)	
Contact resistance	60 mΩ MAX				

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Item	Condition	Specifications
6 Composite Temperature/ Humidity Cyclic Test	<p>The jack shall be subjected to 10 continuous cycles, each as shown in figure below. Then the jack shall be stored at standard atmospheric conditions for 96 hours for recovery, after which measurement shall be made.</p> <p>*Temperature shall be reduced from 25°C to -10°C within 30 min.</p> <p>*Humidity uncontrolled at a temperature less than 25°C</p>	<p>Electrical and mechanical characteristics shall be satisfied, and the jack shall not show remarkable failure.</p>
7 Salt spray test	<p>The jack shall be subjected continuously to a fine mist of salt solution at a temperature of 35°C±2°C for 8 hours. (Salt solution concentration : 5±1% by weight) .Then it shall be subjected to standard atmospheric condition for 16 hours. As depend on above request make that have three times test more. After removing the salt deposits, the pin jack's appearance shall be checked.</p>	<p>Electrical and mechanical characteristics shall be satisfied. The jack shall not show remarkable failure.</p>

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5. Warning :

Miniature jack and Dc power jack shall be dipped, warning to inferior contact by flux and transform mold.

Resistance to flux : It shall be prevention between PCB and housing.

Transform mold : It must not add direct heat to Miniature jack and Dc power jack

Temperature of solder : 265°C MAX.

Preheat temperature : 90°C MAX.

Preheat time : 1 minute MAX.

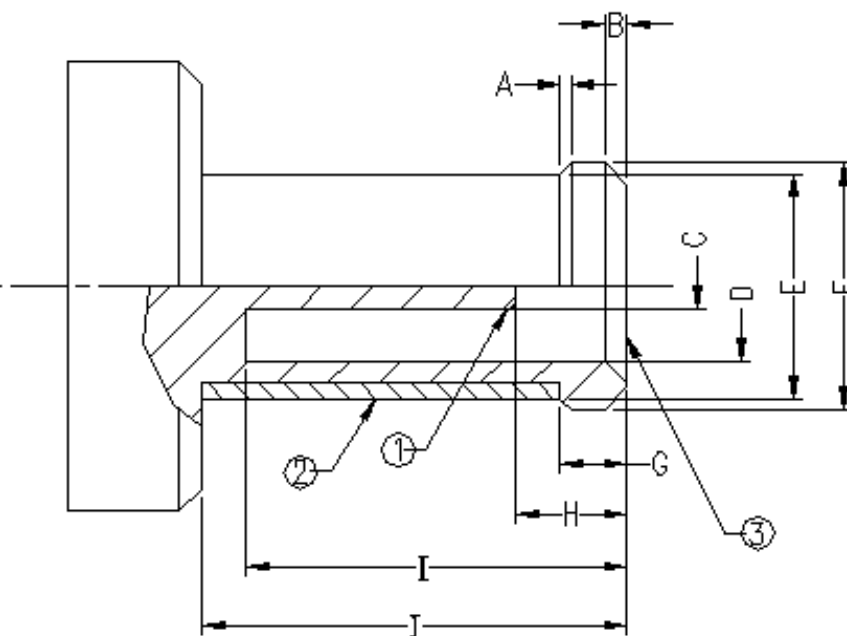
6. All material which are ROHS compliant by containing banned substances and all material is confirmed to be LEAD & CADMIUM FREE.

7. Δ Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

8. Mating plug

EIAJ RC-5320A- B Type


- ① Center pole P
- ② Sleeve
- ③ Insulating collar



Symbol	Dimension
A	0.25
B	0.50
C	$\phi 1.0_{-0.1}^0$
D	$\phi 3.3_{0}^{+0.2}$
E	$\phi 5.0_{0}^{+0.1}$
F	$\phi 5.5_{0}^{+0.1}$
G	1.5±0.1
H	2.5±0.1
I	8.5MIN
J	9.5±0.3

Note: Eccentricity to central axis shall be 0.10 mm or less.

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9.  Endurance test sequence :

Test sequence		Test group							
		A	B	C	D	E	F	G	H
2.2	Insulation resistance	1,6	1,6		1,6	1,6	1,6	1,6	1,6
2.3	Contact resistance	2,7	2,7		2,7	2,7	2	2,7	2,7
2.4	Dielectric strength	3,8	3,8		3,8	3,8	3,7	3,8	3,8
3.1	Operating Force	4,9	4		4,9	4,9	4	4,9	4,9
3.2	Terminal strength	5							
4.1	Resistance to Soldering Heat Test		5						
4.2	Solderability			1					
4.3	Low Temperature Test				5				
4.4	High Temperature Test					5			
4.5	Operating endurance						5		
4.6	Composite Temperature/ Humidity Cyclic Test							5	
4.7	Salt spray test								5

Test sample quality : 2 pcs min. / group