

TITLE AC POWER SOCKET	SPC. NO. HJC-020 & 021	PAGE : 1 OF 6 DATE : 2002.07.19
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SPECIFICATION

1. \triangle 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 \pm 2°C

Relative humidity : 60% to 70%

Air pressure : 86kPa to 106kPa

Storage Temperature Range : -20°C to 65°C

Operating Temperature Range : -10°C to 55°C

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

2. Electrical characteristics:

	Item	Condition	Specifications
2.1	Rated voltage	AC side	AC 250V 2.5A
	Rated current	Switching secondary circuit	DC 15V 2A
2.2	Dielectric strength	Power socket shall withstand 4000V AC (50 to 60Hz). Alternating current between each pin terminal for one minute. Switching secondary circuit shall withstand 500V AC between each terminal for one minute.	Without damage to parts, arcing or breakdown, etc.
2.3	Insulation resistance	A voltage of 500V DC shall be applied for 1 minute. After which measurement shall be made.	100M Ω MIN.
2.4	Contact resistance	Measurement shall be made at 1000Hz with small current and voltage. (AC 100mA MAX. 2mV MAX.)	50m Ω MAX.

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
	2002.07.19	蘇建源	龔雲輝	龔雲輝	
\triangle x4	2007.12.20	李勇達	夏正雄	郭遠峰	修改 Solder ability、Resistance to soldering heat、Composite temperature humidity cyclic test
\triangle x1	2011.11.24	黃健璋	郭素玲	郭遠峰	To correct the specifications of item 4.3
\triangle x4	2012.11.02	江浩霆	郭素玲	郭遠峰	Modify the item 4.3 Add the item 4.5、5、8

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3. Mechanical characteristics

	Item	Condition	Specifications
3.1	Operating force	Insertion and withdrawal force shall be measured by testing plug.	4.9N~58.8N (0.5Kgf~6.0Kgf)
3.2	Terminal strength	A static load of 19.6N (2kgf) shall be applied to the tip of the terminals in any direction.	Without cracks or excessive looseness to the terminal. Electrical and mechanical characteristics shall be satisfied.

4. Endurance characteristics

	Item	Condition	Specifications
4.1	Humidity test	The socket shall be stored at a temperature of 40°C ±2°C and a humidity of 90%~95% for 96 hours, and shall then be returned and allowed to remain at room condition for a period of 30 minutes, and blew off any water drops on the surface of the socket by air.	Electrical and mechanical characteristics shall be satisfied.
4.2	Operating endurance	The life test shall consist of 5000 times of insertion and withdrawal with the mate plug at a rate of 20 to 30 times per minute under no load. Testing plug with putting electric conducted grease to avoid overheating and friction.	Contact resistance : 100mΩ MAX.

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Item	Condition	Specifications	
4.3 Resistance to Soldering Heat Test △1 △2	Wave soldering Process		
	Profile Feature	Pb-Free Assembly	
		Topside PCB	Padside PCB
	Preheat -Temperature min -Temperature max -Time (t _s min to max)	120°C (T _{sl} max)	110°C (T _s min) 150°C (T _s max) 75 sec
	Peak/Classification Temperature	165°C (T _{pl} max)	260°C ±5°C (T _p)
	Time within 5°C of actual Temperature (t _p)		10 sec (within 2 times every time 2-3 sec)
	Time 25°C to Peak temperature		3 minutes max
	Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.		
	Wave Soldering Temperature Profile are as below △3 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 parameters: T_p, T_s max., T_s min., T_{p1} max., T_{s1} max., t_s, t_p, and 2~3 sec.</p>		
Soldering Iron Test Temperature of soldering Iron : 380±10°C Soldering time : 3±1 seconds		Same as Wave soldering Process	
Insertion force		4.9N ~ 58.8N (0.5kgf ~ 6.0kgf)	
Withdrawal force		4.9N ~ 58.8N (0.5kgf ~ 6.0kgf)	

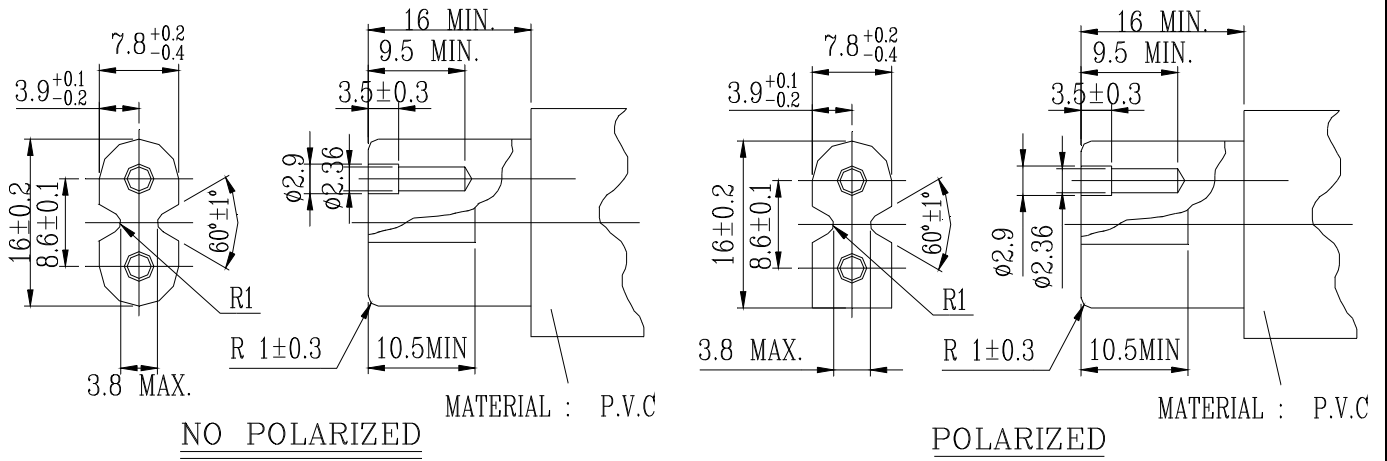
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Item	Condition	Specifications
4.4 High Temperature Test	The socket shall be subjected to temperature of $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	Electrical and mechanical characteristics shall be satisfied. Contact resistance: $100\text{m}\Omega$ MAX. The socket shall show no evidence of cracking, crazing and deformation of the insulation parts.
4.5 \triangle Low Temperature Test	The jack shall be stored for 96 hours at a temperature of $-25^{\circ}\text{C} \pm 3^{\circ}\text{C}$, and shall then be returned and allowed to remain at room condition for a period of 30 minutes, after which measurement shall be made.	Electrical and mechanical characteristics shall be satisfied.
	Contact resistance	$100\text{m}\Omega$ MAX
4.6 Composite temperature/humidity cyclic test	The power sockets shall be subjected to the conditions as shown in below, and then shall be returned and allowed to remain in room ambient condition for 30 minutes.	Electrical and mechanical characteristics shall be satisfied. Contact resistance : $100\text{m}\Omega$ MAX.
	\triangle (4CYCLES)	
4.7 Solderability	The socket shall be dipped into soldering flux of GX-7 (ASAHI CHEMICALS) or equivalent to preflux, and shall be immersed into molten solder of $\triangle 250 \pm 5^{\circ}\text{C}$ for a period of 3 ± 0.5 seconds. Time of dip : 3 ± 0.5 seconds Length of dip : $2 \pm 0.5\text{mm}$ (from top of terminal)	A new uniform of solder shall cover a minimum of 90% of the surface being immersed.

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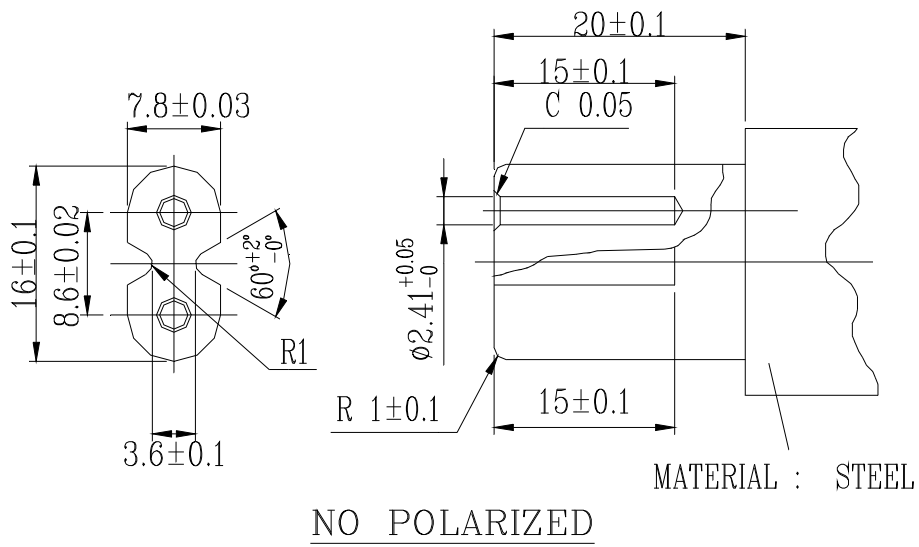
△5. Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

6. Mating plug :



When above cord spec is inserted into or withdrawal from AC SOCKET, internal switch of AC SOCKET should be no problem.

7. Testing plug :



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△8. Endurance test sequence

Test group		Sample group							
NO.	Test item	A	B	C	D	E	F	G	H
2.2	Dielectric strength	1,6		1,6	1,6	1,6	1,6	1,6	1,6
2.3	Insulation resistance	2,7		2,7	2,7	2,7	2,7	2,7	2,7
2.4	Contact resistance	3,8		3	3	3,8	3	3	3,8
3.1	Operating force	4,9		4,8	4,8	4	4,8	4,8	4,9
3.2	Terminal strength	5							
4.1	Humidity test			5					
4.2	Operating endurance				5				
4.3	Resistance to Soldering Heat test					5			
4.4	High Temperature Test						5		
4.5	Low Temperature Test							5	
4.6	Composite temperature / humidity cyclic test								5
4.7	Solderability Test		1						

Test sample quality : 2 pcs / group