

<b>TITLE</b> DC POWER JACK	<b>SPC. NO.</b> HTJ-020-04&5	<b>PAGE :</b> 1 OF 5 <b>DATE :</b> 2004.04.23
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### SPECIFICATION

#### 1. Scope

This specification applies to unified polarity type DC jack used in electronic equipment.  
For DC input use.

#### 2. Standard atmospheric condition :

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

Ambient temperature : 5°C to 35°C

Relative humidity : 45% to 85%

Air pressure : 85kPa to 106kPa

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

Ambient temperature : 20±1°C

Relative humidity : 60% to 70%

Air pressure : 86kPa to 106kPa

Operating temperature range : -10°C ~ 65°C

Storage temperature range : -25°C ~ 75°C

Humidity range : 85% RH MAX.

Operating temperature : -10°C ~ 65°C

Storage temperature : -25°C ~ 75°C

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
△x1	2012.06.13	黃健瑋	郭素玲	郭遠峰	Modify the item 5.1

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## 3. Electrical characteristics

	Item	Condition	Specifications
1	Rated voltage/ Rated current		DC 16V 3A
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 $\Omega$ MIN.
3	Contact resistance	Measurement shall be made at with small current 1000 Hz (1A MAX.)	30 m $\Omega$ 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.

## 4. Mechanical characteristics

	Item	Condition	Specifications
1	Operating force	Measurement shall be made after insertion and withdrawal using standard plug gauge 3 times.	
		Insertion force	2.94~29.4N (0.3~3kgf)
		Withdrawal force	2.94~29.4N (0.3~3kgf)

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5. Endurance characteristics

Item	Condition	Specifications		
1 Resistance to Soldering Heat Test	Wave soldering Process	Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.		
	Profile Feature		Pb-Free Assembly	
			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 style="text-align: center;"> <span style="color: red;">-----</span> Topside PCB  <span style="color: blue;">—————</span> Padside PCB         </p>			
Soldering Iron Test Temperature of soldering Iron : 380±10°C Soldering time : 3±1 seconds		Same as Wave soldering Process		
Insertion force		1.96~29.4N ( 0.2~3kgf )		
Withdrawal force		1.96~29.4N ( 0.2~3kgf )		

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	Item	Condition	Specifications
2	Solderability	Temperature of solder : $250^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Time of dip : $3\pm 0.5$ seconds Length of dip : $2\pm 0.5\text{mm}$ ( from top of terminal )	The soldered area shall be covered a minimum of 90% of the surface being immersed.
3	Cold	The jack shall be stored at a temperature of $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96 hours. And then it shall be subjected to the controlled recovery conditions for 0.5 hours after which measurement shall be made.	Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.
4	Dry heat	The jack shall be stored at a temperature of $70^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96 hours. And then it shall be subjected to the controlled recovery conditions for 1 hour after which measurement shall be made.	Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.
5	Humidity test	Temperature : $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ Relative humidity : 90% ~95% for 96 hours. The testing jack shall be left alone for 30 minutes in a room ambient, before measurement shall be made.	Electrical and mechanical characteristics shall be satisfied.
		Insulation resistance	30M $\Omega$ MIN.
		Contact resistance	50m $\Omega$ MAX.
6	Operating endurance	Insertion and withdrawal shall be made with the mating plugs and jacks for 5000 cycles at a speed of 10~30 cycles/minute.	
		Insertion force	29.4N MAX ( 3Kgf)
		Withdrawal force	1.96~29.4N ( 0.2~3kgf)
		Contact resistance	Between plug and contact
Each closed contact	60 m $\Omega$ MAX.		

6. Warning :

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 Dc power jack

Temperature of solder :  $255^{\circ}\text{C}$  MAX.

Preheat temperature :  $90^{\circ}\text{C}$  MAX.

Preheat time : 2 minute MAX.

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

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

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9. Endurance test sequence :

Test Item		Test group					
		A	B	C	D	E	F
3.2	Insulation resistance	1,6		1,6	1,6	1	1,6
3.3	Contact resistance	3,8		3,8	3,8	3	3
3.4	Dielectric strength	2,7		2,7	2,7	2,6	2,7
4.1	Operating force	4		4,9	4,9	4,7	4
5.1	Resistance to Soldering Heat Test	5					
5.2	Solderability		1				
5.3	Cold			5			
5.4	Dry heat				5		
5.5	Humidity test					5	
5.6	Operating endurance						5

Test sample quality : 2 pcs min. / group