

<b>TITLE</b> DC POWER JACK	<b>SPC. NO.</b> KM02019	<b>PAGE :</b> 1 OF 6 <b>DATE :</b> 2006.08.31
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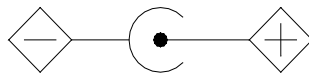
1. Scope:

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

2. Applicable Safety Standard / Applicable Standard

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

3. Polarity



4. Standard atmospheric conditions

Unless otherwise specified. The standard range of atmospheric condition for making measurements and tests are as follows :

Ambient temperature : 5°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 follow limits :

Ambient temperature : 20±2°C

Relative humidity : 60% to 70%

Air pressure : 86kPa to 106kPa

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

Storage temperature range : -25°C ~ 70°C

ISSUE	DATE	WRN	CHKD	APVD	DESCRIPTIONS
△x3	2012.09.26	黃健瑋	郭素玲	郭遠峰	To modify the item 7.1、8、10

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## 5. Mechanical characteristics

	Item	Conditions	Specification
1	Insertion force	Measurement shall be made after insertion and withdrawal using standard plug gauge 3 times.	29.4N (3.0kgf MAX)
2	Withdrawal force		4.9N~29.4N (0.5~3kgf)
3	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.

## 6. Electrical characteristics

	Item	Conditions	Specification
1	Rating		DC 16V 3A
2	Contact resistance	1K Hz Measured at small current (100mA MAX.)	30mΩ MAX.
3	Insulation resistance	Apply a voltage of 500V DC for 1 min. to following portions after which measurement shall be made : Between body and conductor Between conductors not to be contact Between conductors not to be contact when plug is inserted	100MΩ MIN.
4	Dielectric strength	AC 500V (50 to 60Hz) For 1 minute. (Trip current : 2mA) Between body and conductor Between conductors not to be contact Between conductors not to be contact when plug is inserted	Without damage such as insulation breakdown
5	Contact gap	Mating a Plug = 0.3mm min. Un-mating=Normal Close	0.3mm MIN
6	Space between conductors	Distance between adjacent terminals	0.3mm MIN

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7. Endurance characteristics

Item	Conditions	Specification	
1 Resistance to Soldering Heat Test	Wave soldering Process		
	Profile Feature	Pb-Free Assembly	
		Topside PCB	Pad side 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		29.4N (3kgf) MAX.	
Withdrawal force		4.9N~29.4N (0.5kgf~3.0kgf)	

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Item	Conditions	Specification	
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	Humidity The DC Jack shall be subject to 90% ~95RH, $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 96 hours, and shall then be conditioned at room ambient conditions for a period of 30 minutes.	There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied.	
4	Low Temperature 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 30 minutes after which measurement shall be made.	There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied.	
5	High Temperature 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 30 minutes after which measurement shall be made.	There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied.	
6	Operating endurance Without load : Insertion and withdrawal shall be made with the mating plugs and jacks for 5000 cycles at a speed of 20~30 cycles/min.	There shall be no damage on appearance. Mechanical and electrical characteristics shall be satisfied	
		Insertion force	29.4N ( 3kgf ) MAX
		Withdrawal force	2.94~29.4N ( 0.3~3kgf )
		Contact resistance	60 mΩ MAX.

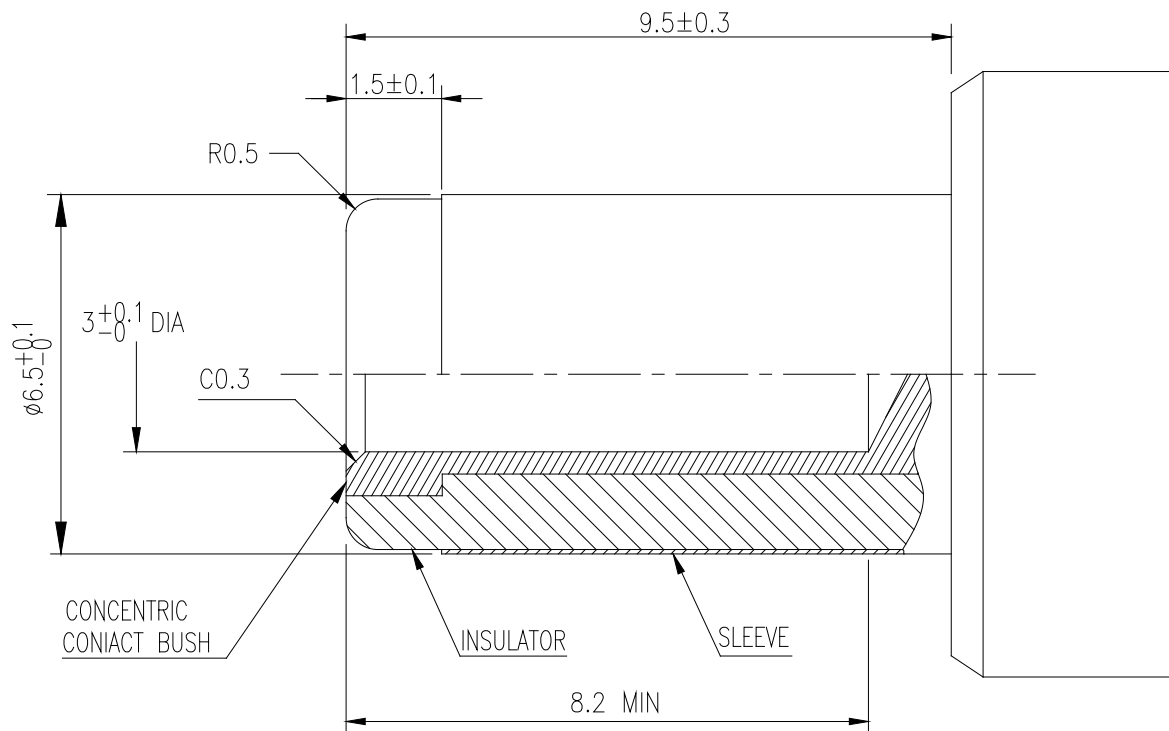


8. Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

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9. Mating plug

Figure of mating plug



UNIT : mm

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10. Endurance test sequence :

Test Item		Test group							
		A	B	C	D	E	F	G	H
5-1	Insertion force	1,7		1		1,7	1,7	1,7	1,7
5-2	Withdrawal force	2,8		2		2,8	2,8	2,8	2,8
5-3	Terminal strength	6							
6-2	Contact resistance	3,9		3,7		3,9	3,9	3,9	3,9
6-3	Insulation resistance	4,10		4,8		4,10	4,10	4,10	4,10
6-4	Dielectric strength	5,11		5,9		5,11	5,11	5,11	5,11
6-5	Contact gap		1						
6-6	Space between conductors		2						
7-1	Resistance to Soldering Heat Test			6					
7-2	Solderability				1				
7-3	Humidity					6			
7-4	Low Temperature						6		
7-5	High Temperature							6	
7-6	Operating endurance								6

Test sample quality : 2 pcs min./group