

<b>TITLE</b> MINIATURE JACK	<b>SPC. NO.</b> KM35002	<b>PAGE :</b> 1 OF 8 <b>DATE :</b> 2011.12.21
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## SPECIFICATION

## 1. 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 : 25% to 80%

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

Operating temperature range: -25°C to 65°C

Storage temperature range : -25°C to 85°C

## 2. Electrical characteristics:

	Item	Condition	Specifications
1	Rated voltage Rated current		DC 12V 1A
2	Contact resistance	Measurement shall be made at with small current 1000 Hz (1A MAX.)	30mΩ MAX.
3	Insulation resistance	A voltage of 500V DC shall be applied for 1 minute after which measurement shall be made.	Between the conductors which should not make contact under normal conditions. Between each terminal and insulated metal part.
			100MΩ MIN.

ISSUE	DATE	WRN	CHKD	APVD	DESCRIPTIONS
	2011.12.21	劉秀慧	郭素玲	郭遠峰	New Release

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	Item	Condition		Specifications
4	Dielectric strength	500V AC ( 50 Hz to 60 Hz ) for 1 minute. Trip current : 2mA	Between the conductors which should not make contact under normal conditions.	Without damage to parts, arcing or breakdown, etc.
			Between each terminal and insulated metal part.	

## 3. Mechanical characteristics

	Item	Condition		Specifications
1	Operating force	Insertion and withdrawal force shall be measured after inserting and withdrawing 3 times by using a gauge of standard dimensions.		
		Insertion force		4N~30N ( 0.4kgf~3.0kgf )
		Withdrawal force		3N~30N ( 0.3kgf~3.0kgf )
2	Contact pressure	Contact pressure during the make contact shall be measured in the operation by using the minimum dimensional gauge.	The contact pressure between chip, ring, sleeve and the contact piece.	1N ( 100gf ) MIN.
			The contact pressure with the make contact.	
		The contact pressure during the break contact shall be measured under the normal conditions.		
3	Terminal strength	A static load of 4.9N ( 0.5Kgf ) shall be applied to the tip of the terminal for 10 seconds. ( x, y, z, direction )		Without cracks or excessive looseness to the terminal. Electrical and mechanical characteristics shall be satisfied. Without play in terminal etc.

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4. Endurance characteristics			
	Item	Condition	Specifications
1	Humidity test	Temperature : 40°C±5°C Relative humidity : 90% ~95% for 96 hours after testing jack shall be left alone for 1 to 2 hours in a room ambient.	Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied.
		Contact resistance	50mΩ MAX.
		Insulation resistance	50MΩ MIN.
		Contact pressure	0.5N (50gf) MIN.
		Insertion force	3N~30N (0.3kgf~3.0kgf)
		Withdrawal force	
2	Cold	The jack shall be stored for 96 hours at a temperature of -25±2°C immediately after which measurement shall be made.	Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied.
		Insertion force	3N~30N (0.3kgf~3.0kgf)
		Withdrawal force	
3	Dry heat	The jack shall be stored for 96 hours at a temperature of 85±2°C immediately after which measurement shall be made.	Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied.
		Insertion force	3N~30N (0.3kgf~3.0kgf)
		Withdrawal force	

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Item	Condition			Specifications		
4	Operating endurance	Jack shall withstand 1500 cycles inserting and withdrawing shall be made by the following mating plug or standard dimension gauge, at a speed of 10 to 30 times / min.			Dimensional requirements shall be satisfied.	
					Electrical and mechanical characteristics shall be satisfied.	
		Contact pressure			0.5N ( 50gf) MIN.	
		Contact resistance	Each closed contact		60mΩ MAX.	
Between plug and contact			100mΩ MAX.			
5	Soldering test	Temperature of solder : 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.	
6	Sleeve strength ( for sleeve items only )	As shown the below drawing, before you insert the plug to our jack, you must put it in fixed location. Then you use the 2Kg strength into its front side with 4 directions ( up, down, left, right ) . Note : P= 19.8N ( 2Kg ) , L=20mm			The sleeve should not be loosen after the test for 1000 circles.	

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Item	Condition	Specifications		
7	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 (t <sub>s</sub> min to max)		120°C (T <sub>sl</sub> max)	110°C (T <sub>s</sub> min) 150°C (T <sub>s</sub> max) 75 sec
	Peak/Classification Temperature		165°C (T <sub>pl</sub> max)	260°C ±5°C (T <sub>p</sub> )
	Time within 5°C of actual Temperature (t <sub>p</sub> )			10 sec (within 2 times every time 2-3 sec)
	Time 25°C to Peak temperature			3 minutes max
	Resistance to Soldering Heat Test	Wave Soldering Temperature Profile are as below		
		<p>Temperature</p> <p>Time</p> <p>----- Topside PCB</p> <p>———— 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	4N~30N (0.4kgf~3.0kgf)		
	Withdrawal force	3N~30N (0.3kgf~3.0kgf)		

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Item	Condition	Specifications
8 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 24 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>

5. Warning :

Miniature 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.

Temperature of solder : 265°C MAX.

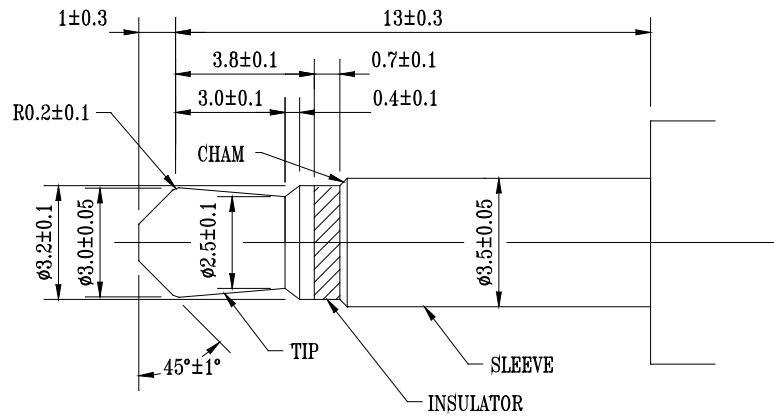
Preheat temperature : 90°C MAX.

6. Preheat time : 1 minute MAX.

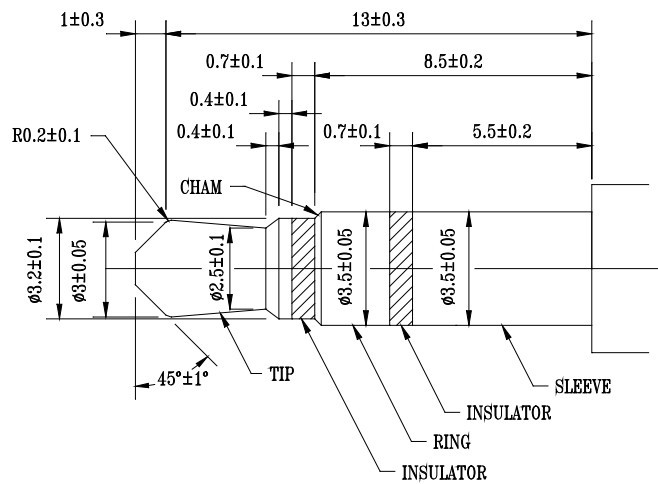
7. Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

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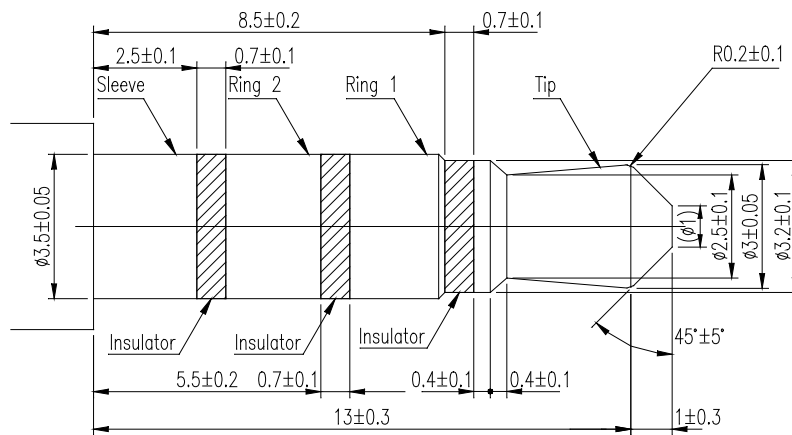
8. Mating plug dimension



2 Conductors Type



3 Conductors Type



4 Conductors Type

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9. Endurance test sequence :

Test Item		Test group									
		A	B	C	D	E	F	G	H	I	J
2.2	Contact resistance		1	1,6	1,6	1	1,6		1,6	1,6	1,4
2.3	Insulation resistance		2	2,7	2,7	2,7	2,7		2,7	2,7	
2.4	Dielectric strength		3,7	3,8	3,8	3,8	3,8		3,8	3,8	
3.1	Operating force		4	4	4	4,9	4,9		4	4,9	2,5
3.2	Contact pressure	1	5			5					
3.3	Terminal strength										3
4.1	Humidity test		6								
4.2	Cold			5							
4.3	Dry heat				5						
4.4	Operating endurance					6					
4.5	Soldering test						1				
4.6	Sleeve strength ( for sleeve items only )							1			
4.7	Resistance to Soldering Heat Test								5		
4.8	Composite temperature / humidity cyclic test									5	

Test sample quality : 2 pcs min. / group