

<b>TITLE</b> PIN JACK	<b>SPC. NO.</b> KM04086/89	<b>PAGE :</b> 1 OF 8 <b>DATE :</b> 2009.09.22
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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: 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: -25°C to 70°C

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

Humidity range : 85% RH MAX.

## 2. Construction :

## 2.1 Mating limit :

Mating limit or range of between the plug and the spring of pin jack shall be not regulated.

## 2.2 Connection timing :

The pin jack shall be permitted with connection timing whether shorting or not between the mutually separated terminals or springs of the pin jack, during the plug inserting and extracting.

## 2.3 Creepage distance and spacing :

Creepage distance and spacing between mutually insulated parts shall be 0.3mm minimum, these distance and spacing shall be maintained with or without the gauge plug inserted.

ISSUE	DATE	WRN	CHKD	APVD	DESCRIPTIONS
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## 3. Electrical characteristics

	Item	Condition	Specifications
1	Rated voltage/ Rated current		DC 34V 2A
2	Insulation resistance	A voltage of 500V D.C. shall be applied for 1 min. between mutually insulated metal parts after which measurement shall be made.	100 mΩ MIN.
3	Contact resistance	Measurement shall be made at with small current 1000 Hz ( 100mA MAX. )	30 mΩ MAX.
4	Dielectric strength	500V A.C. r.m.s ( 50 Hz to 60 Hz ) for 1 minute. Trip current : 2mA	Without damage to parts, arcing or breakdown, etc.

## 4. Mechanical characteristics

	Item	Condition	Specifications
1	Operating force	The insertion force and the withdrawal force shall be measured with the gauge plug as shown in Appendix attached.	
		Insertion force	29.4N ( 3kgf ) MAX.
		Withdrawal force	2.94N~29.4N ( 0.3kgf~ 3.0kgf )
2	Terminal strength	Every terminal shall be capable of withstand a force of 4.9N ( 0.5kgf ) for 10 seconds.	Without cracks or excessive looseness to the terminal, but deformation of terminal is authorized.
3	Loosen strength of contact	The terminal shall be capable of withstand a force of 29.4N ( 3kgf ) applied in any direction for 10 seconds.	

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5. Endurance characteristics

Item	Condition	Specifications
1 Operating endurance	The life test shall consist of 150 cycles of insertion and withdrawal with gauge plug covered with a thin coat of grease in order to prevent from heating or wearing, at a rate of 20 to 30cycles per minutes under no load.	Electrical and mechanical Characteristics shall be satisfied.
2 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	50 mΩ MIN.
3 Dry heat	The pin jack shall be subjected to temperature of $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 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.
4 Cold	The pin jack shall be subjected to temperature of $-25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	
5 Composite temperature/humidity cyclic test	The pin jack 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.
	<p style="text-align: center;">( 4 cycles )</p>	

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Item	Condition	Specifications		
6 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			
	<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		29.4N (3kgf) MAX.		
Withdrawal force		2.94N~29.4N (0.3kgf~3.0kgf)		

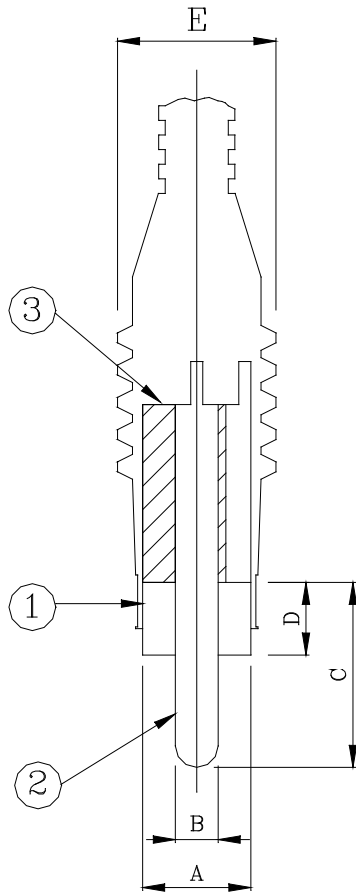
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	Item	Condition	Specifications
7	Soldering test	Temperature of solder : 250°C±5°C Time of dip : 3±0.5 seconds Length of dip : 2±0.5mm ( from top of terminal )	The soldered area shall be covered a minimum of 90% of the surface being immersed.

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

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Mating Photo Plug



- ① Plug cover
- ② Plug pin
- ③ Insulator

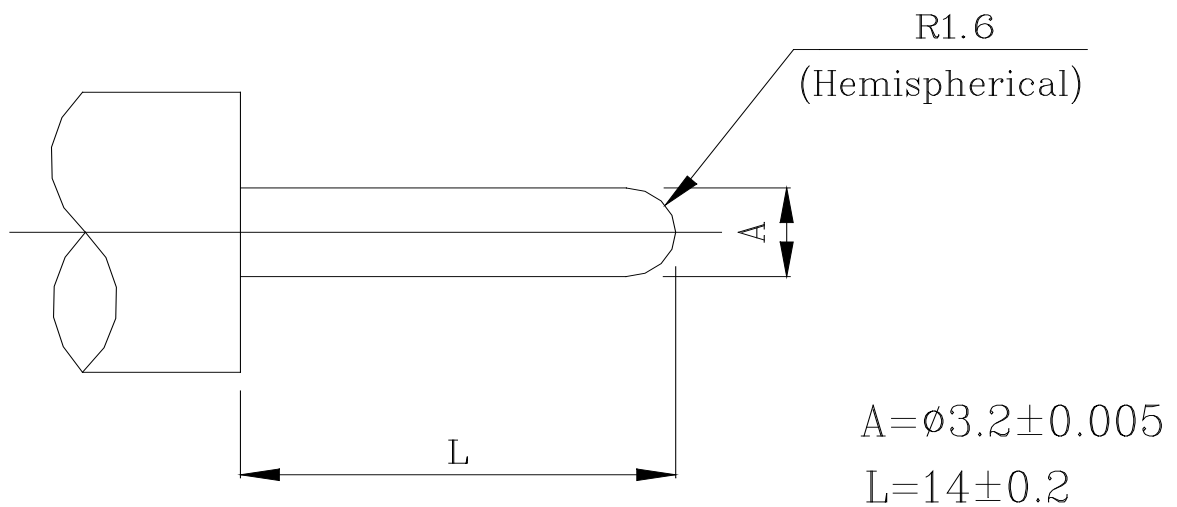
Symbol	Dimension
A	( $\phi 8.2$ )
B	$3.25^{+0}_{-0.15}$
C	$14.0 \pm 0.5$
D	$5.5 \pm 0.5$
E	12 Max

Unit: mm

( ): Reference value

Note: Eccentricity to central axis shall be 0.15 mm or less.

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Surface roughness : Peak-to-valley height of 0.8 micron MAX.

For insertion and drawing force :

Material : Stainless steel.

Finish : Chromium plated.

For contact resistance :

Material : Brass

Finish : Silver plated.

Fig. 1 gauge plug

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7. Endurance test sequence :

Test Item		Test group								
		A	B	C	D	E	F	G	H	I
3.2	Insulation resistance	1,6	1,6	1,6	1	1,6	1,6	1,6	1,6	
3.3	Contact resistance	3,8	3,8	3,8	3,7	3,8	3,8	3,8	3,8	
3.4	Dielectric strength	2,7	2,7	2,7	2,6	2,7	2,7	2,7	2,7	
4.1	Operating force	4,9	4,9	4,9	4,8	4,9	4,9	4,9	4	
4.2	Terminal strength	5								
4.3	Loosen strength of contact		5							
5.1	Operating endurance			5						
5.2	Humidity test				5					
5.3	Dry heat					5				
5.4	Cold						5			
5.5	Composite temperature/ humidity cyclic test							5		
5.6	Resistance to Soldering Heat Test								5	
5.7	Soldering test									1

Test sample quality : 2 pcs min / group