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PRODUCT SPECIFICATION**【1.SCOPE】**

This specification covers the requirements for product performance and quality assurance provision the KM04084 Series connector.

1.1 Content

This specification covers the performance, Test and requirements for the KM04084 Series connector.

【2.REQUIREMENTS】

2.1 Design and Construction

Product shall be of the design, Construction and physical dimensions specified on the applicable Product drawing.

【3.RATING】

Item	Standard
Rated Voltage	34V DC or AC
Rated Current	2A
Practical Temperature Range	-25°C to 70°C
Humidity Range	85% RH Max.

ISSUE	DATE	WRN	CHKD	APVD	DESCRIPTIONS
	2009.09.18	<i>Paul Chiang</i>	<i>Dick Kuo</i>	<i>Dick Kuo</i>	NEW RELEASE

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【4.ELECTRICAL】

Item		Test Condition	Requirement / Specifications
4-1	Rated Voltage / Rated Current		DC 34V 2A
4-2	Insulation Resistance	A voltage of 500 V.D.C. shall be applied for 1 min. between mutually insulation mated parts after which measurement shall be made.	100MΩ Min.
4-3	Contact Resistance	Measurement shall be made at 1000Hz with small current 100mA Max.	30mΩ Max.
4-4	Dielectric Strength	The jack shall withstand, without failure, a potential of 500 volts r.m.s. 50/60Hz between mutually metal parts for one minute.	Without damage to parts, arcing or breakdown, etc.

【5.MECHANICAL】

Item		Test Condition	Requirement / Specifications	
5-1	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 Max. (3.0kgf Max.)
			Withdrawal Force	2.94N~29.4N (0.3kgf to 3.0kgf)
5-2	Terminal Strength	Every terminal shall be capable of withstand a force of 4.9N (0.5kgf) .	Without excessive looseness to the terminal ,but deformation of terminal is authorized. Electrical and mechanical characteristics shall be satisfied.	

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Item		Test Condition	Requirement / Specifications
5-3	Loosen Strength of Contact	The terminal shall be capable of withstand a force of 29.4N (3kgf) applied in any direction for 10 seconds.	Without cracks or excessive looseness to the terminal, but deformation of terminal is authorized. Electrical and mechanical characteristics shall be satisfied.
5-4	Strength of Tapping Part	The tapping part shall be capable of a torque of 98N – cm (10kgf-cm) for 5 seconds by M3X8 tapping tight screw and panel (t=1mm).	

【6.ENVIRONMENTAL】

Item		Test Condition	Requirement / Specifications
6-1	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 30 cycles per minutes under no load.	Dimensional requirements shall be satisfied. Electrical and mechanical Characteristics shall be satisfied.
		Contact Resistance	80mΩ Max.
		Pin – Contact Plug Cover – Socket	100mΩ Max.
6-2	Humidity Test	Temperature : 40°C ± 2°C Relative Humidity : 90% ~ 95% for 96 hours after testing jack shall be left alone for 30 minutes in room ambient.	Dimensional requirements shall be satisfied. Electrical and mechanical Characteristics shall be satisfied.
		Insulation Resistance	50MΩ Min.
6-3	Dry Heat	The PIN JACK shall be subjected to temperature of 70°C ± 2°C for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	Dimensional requirements shall be satisfied. Electrical and Mechanical Characteristics shall be satisfied.
6-4	Cold	The PIN JACK shall be subjected to temperature of -25°C ± 2°C for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied.

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Item	Test Condition	Requirement / Specifications																							
6-5	Resistance to soldering heat test	Wave soldering Process																							
		<table border="1"> <tr> <th rowspan="2">Profile Feature</th> <th colspan="2">Pb-Free Assembly</th> </tr> <tr> <th>Topside PCB</th> <th>Pad side PCB</th> </tr> <tr> <td>Preheat</td> <td rowspan="4">120°C (Ts1 max)</td> <td>110°C (Ts min)</td> </tr> <tr> <td>-Temperature min</td> <td>150°C (Ts max)</td> </tr> <tr> <td>-Temperature max</td> <td>75 sec</td> </tr> <tr> <td>-Time (ts min to max)</td> <td></td> </tr> <tr> <td>Peak/Classification Temperature</td> <td>165°C (Tp1)</td> <td>260°C ±5°C (Tp)</td> </tr> <tr> <td>Time within 5°C of actual Temperature (tp)</td> <td></td> <td>10 sec (within 2 times every time 2-3 sec)</td> </tr> <tr> <td>Time 25°C to Peak temperature</td> <td></td> <td>3 minutes max</td> </tr> </table>	Profile Feature	Pb-Free Assembly		Topside PCB	Pad side PCB	Preheat	120°C (Ts1 max)	110°C (Ts min)	-Temperature min	150°C (Ts max)	-Temperature max	75 sec	-Time (ts min to max)		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
		Profile Feature		Pb-Free Assembly																					
			Topside PCB	Pad side PCB																					
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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		Same as Wave soldering Process																							
Temperature of soldering Iron : 380±10°C																									
Soldering time : 3±1 seconds																									
Insertion force		29.4N Max. (3.0kgf Max.)																							
Withdrawal force		2.94N~29.4N (0.3kgf to 3.0kgf)																							

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Item	Test Condition	Requirement / Specifications
6-6	Soldering Test Temperature of solder : $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time of Dip : 3 ± 0.5 seconds Length of Dip : $2 \pm 0.5\text{mm}$ (from Top of terminal) To the balance point time : 3 seconds	A new uniform of solder shall cover a minimum of 90% of the surface being immersed.
6-7	Composite Temperature / Humidity Cyclic Test The jack board shall be subjected to 5 cycles. Then jack board shall be stored at standard atmospheric conditions for 1hour, after which measurement shall be made. 	It shall not have break and deformation happened.
6-8	Salt Spray Test The Pin jack shall be subjected continuously to a fine mist of salt solution at a temperature of $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 48 ± 4 hours. (salt solution concentration : $5 \pm 1\%$ by weight). Then it shall be subjected to standard atmospheric condition for 16 hours. As depend on above request make that have 1~2 times test more. After removing the salt deposits, the Pin Jack appearance shall be checked.	At the conclusion of this test the Pin jack and contact resistance.
	Contact Resistance	60mΩ Max.
	Insulation Resistance	10MΩ Min.

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

TITLE

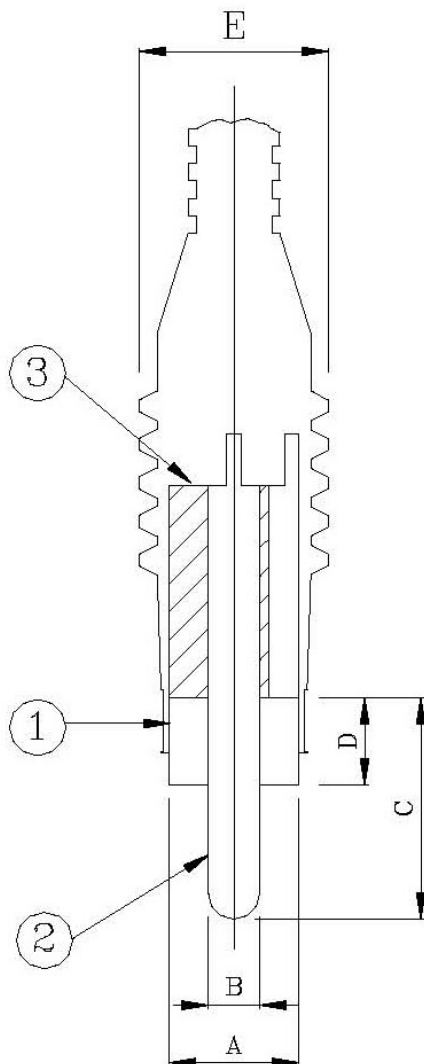
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Mating Photo Plug

① Plug cover

② Plug pin

③ Insulator

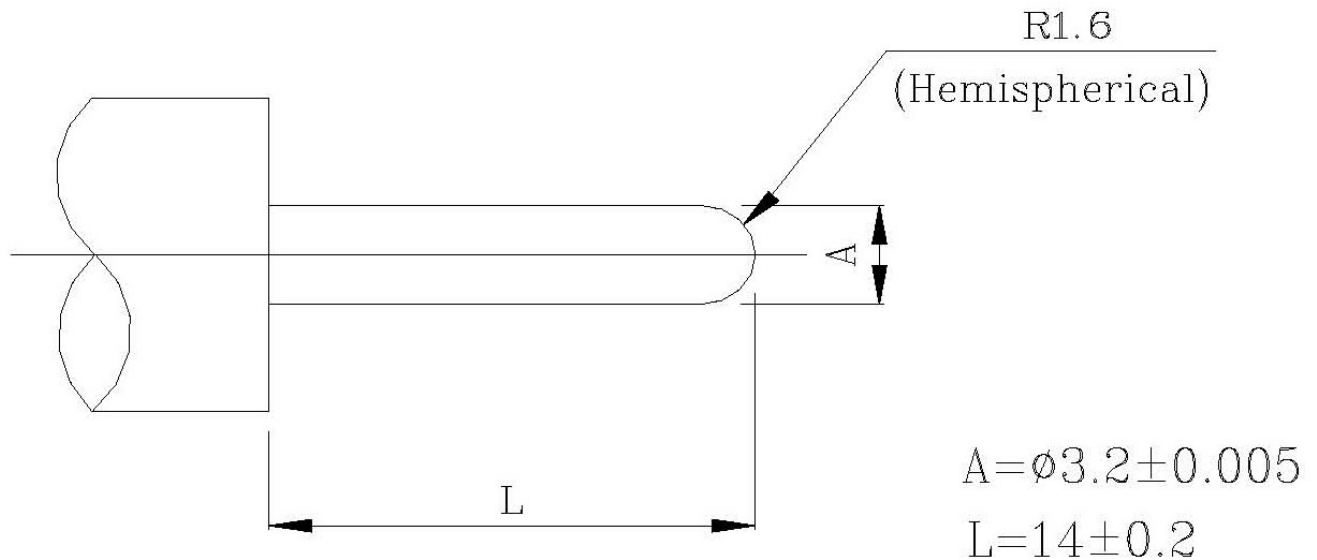
Symbol	Dimension
A	($\phi 8.2$)
B	$3.25^{+0}_{-0.15}$
C	14.0 ± 0.5
D	5.5 ± 0.5
E	12 Max

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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【8. Endurance test sequence : 】

Test Item		Test group										
		A	B	C	D	E	F	G	H	I	J	K
4-2	Insulation Resistance	1,6	1,6		1,6	1	1,6	1,6	1,6		1,6	1
4-3	Contact Resistance	3,8	3,8		3	3,7	3,8	3,8	3,8		3,8	3
4-4	Dielectric Strength	2,7	2,7		2,7	2,6	2,7	2,7	2,7		2,7	2,6
5-1	Operating Force	4,9	4,9		4,8	4,8	4,9	4,9	4		4,9	4,7
5-2	Terminal Strength	5										
5-3	Loosen Strength of Contact		5									
5-4	Strength of tapping part			1								
6-1	Operating Endurance				5							
6-2	Humidity Test					5						
6-3	Dry Heat						5					
6-4	Cold							5				
6-5	Resistance to Soldering Heat Test								5			
6-6	Soldering Test									1		
6-7	Composite Temperature / Humidity Cyclic Test										5	
6-8	Salt Spray Test											5

Test sample quality : 2 pcs min./group