

<b>TITLE</b> φ 2.5—MINIATURE JACK	<b>SPC. NO.</b> KMMZ31764	<b>PAGE : 1 OF 8</b> <b>DATE : 2022.07.22</b>
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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 : 45% to 85%

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

Storage Temperature Range: -25°C to 85°C

Operating Temperature Range: -25°C to 70°C

Operating temperature range is the range of ambient temperature for the component that can be operated continuously at rated voltage and rated current.

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
	2022.07.22	張啟濤	李阮龍	郭遠峰	

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## 2. Electrical characteristics:

	Item	Condition	Specifications
1	Rated voltage Rated current	With resistive load	DC 12V 1A
2	Dielectric strength	A voltage of 500V AC ( 50 to 60Hz ) shall be applied for 1 minute. Trip current : 2mA	Without damage to parts, arcing or breakdown, etc.
3	Insulation resistance	A voltage of 500V DC. shall be applied for 1 min. after which measurement shall be made.	100MΩ MIN.
4	Contact resistance	Between a terminal of the jack and that of the mate plug, measurement shall be made at 1000Hz with small current ( 100mA max. )	50mΩ MAX.

## 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	2.94N~29.4N ( 0.3kgf~3kgf )
		Withdrawal force	
2	Terminal strength	A static load of 4.9N ( 0.5kgf ) shall be applied to the tip of the terminals for 10 seconds in any direction.	Without cracks or excessive looseness to the terminal.
3	Contact limit	The jack spring shall be in contact with the mate plug in the range as shown in page 6 / 8 APPENDIX FIGURE3 CONTACT LIMIT.	
4	Switching mode	The switching mode of the jack shall not be specified in process of inserting or withdrawing the mate plug.	
5	Insulation spacing	The insulation spacing between metal parts shall be 0.3 millimeter or more with or without insertion of the gauge plug.	

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## 4. Endurance characteristics

	Item	Condition	Specifications
1	Humidity test	The jack shall be stored at a temperature of $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ and a humidity of 90%~95% for 96 hours. Then the jack shall be maintained at standard atmospheric conditions for 30 minutes after which measurement shall be made.	Electrical and mechanical characteristics shall be satisfied, and the jack shall not show remarkable failure.
		Insulation resistance	50M $\Omega$ MIN.
2	Dry heat	The jack shall be stored at a temperature of $85^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96 hours .then shall be allowed to remain in room ambient conditions for 30 minutes	Electrical and mechanical characteristics shall be satisfied, and the jack shall not show remarkable failure.
3	Cold test	The jack shall be stored at a temperature of $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96 hours .then shall be allowed to remain in room ambient conditions for 30 minutes	
4	Solderability (use flux)	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.
5	Operating endurance	Inserting and withdrawing shall be made by using a gauge of standard dimensions at a speed of 20 to 30 times / min for 5000 times.	Electrical and mechanical characteristics shall be satisfied, and the jack shall not show remarkable failure.
		Contact resistance	100m $\Omega$ MAX.
		Insertion and withdrawal force	1.47N~19.6N ( 0.15kgf~2kgf )

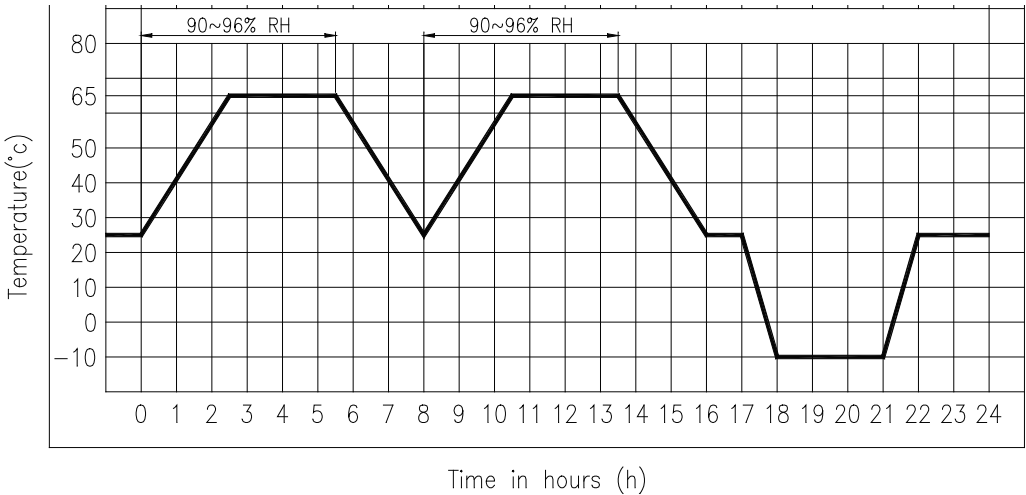
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Item	Condition		Specifications	
6	Wave soldering Process			
	Profile Feature	Pb-Free Assembly		Electrical and mechanical characteristics shall be satisfied, and not show remarkable failure.
		Topside PCB	Padside PCB	
	Preheat -Temperature min -Temperature max -Time (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	
	Wave Soldering Temperature Profile are as below			
	<div>Resistance to Soldering Heat Test</div> <div>----- Topside PCB ———— Padside PCB</div>			
	Soldering Iron Test			
Temperature of soldering Iron : 380±10°C		Same as Wave soldering Process		
Soldering time : 3±1 seconds				
Insertion force		1.47N~19.6N( 0.15kgf~2kgf )		
Withdrawal force		1.47N~19.6N( 0.15kgf~2kgf )		

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Item	Condition	Specifications
7 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> 	Electrical and mechanical characteristics shall be satisfied, and the jack shall not show remarkable failure.

## 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 : 255°C MAX.

Preheat temperature : 90°C MAX.

Preheat time : 1 minute MAX.

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

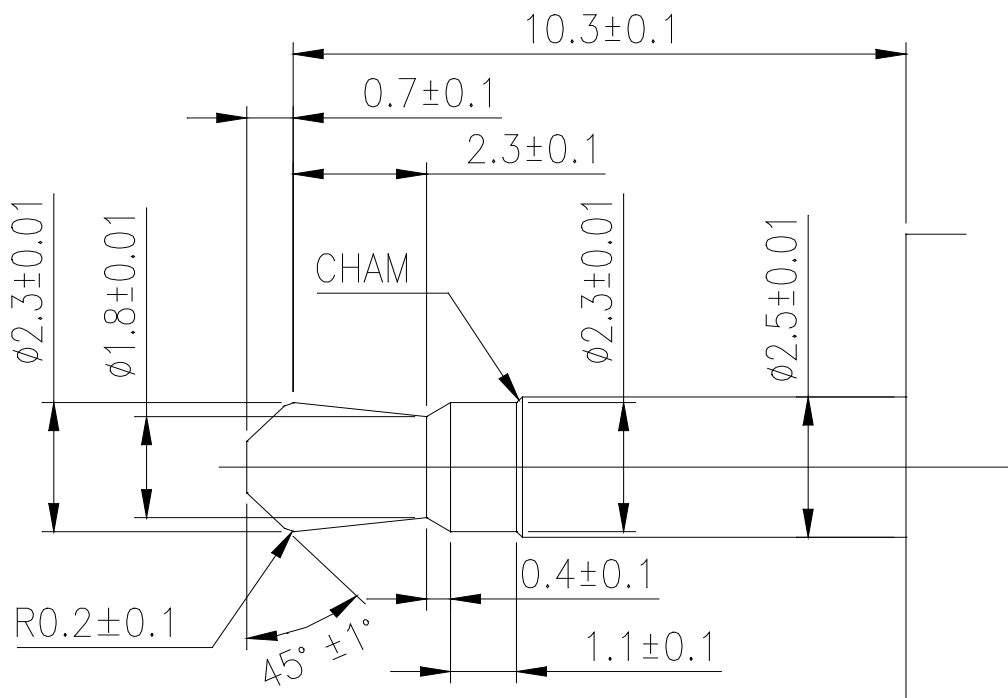
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7. For  $\phi$  2.5 Mini size

### 7.1 Standard dimension

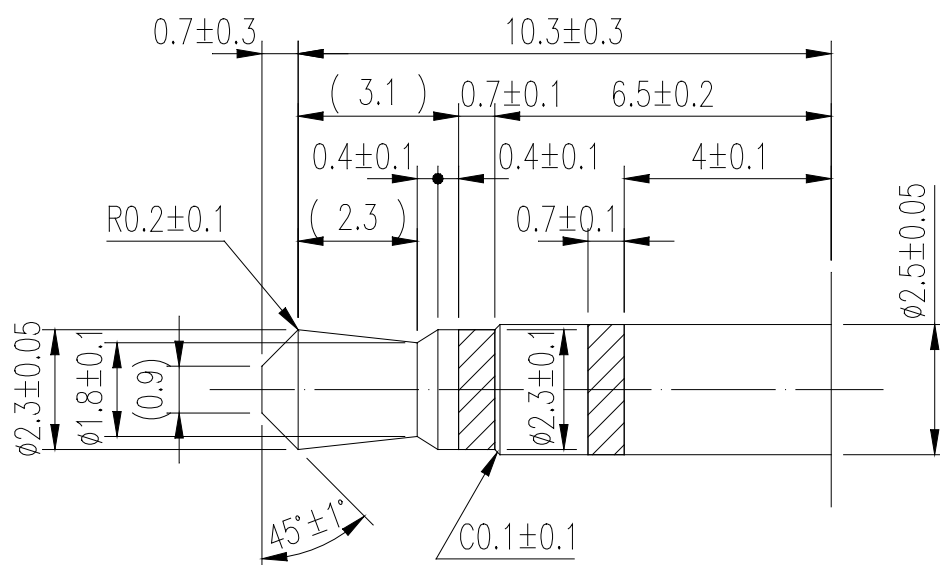
Roughness of the surface:

Materials: Stainless steel



## 7.2 Mate plug:

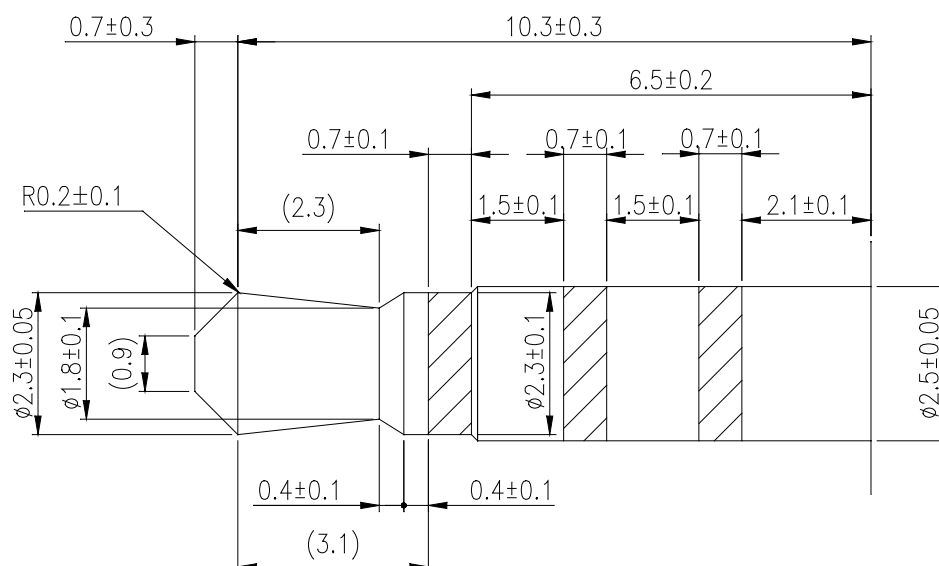
3 points mini-plug



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### 7.3 Mate plug:

4 points mini-plug



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8. Endurance test sequence

Test group		Sample group												
NO.	Test item	A	B	C	D	E	F	G						
1	Examination of product	1,13	1,13	1,13	1,13	1,14		1,13						
2	Dielectric strength	2,8	2,8	2,8	2,8	2,9		2,8						
3	Insulation resistance	3,9	3,9	3,9	3,9	3,10		3,9						
4	Contact resistance	4,10	4,10	4,10	4,10	4,11		4,10						
5	Insertion force	5,11	5,11	5,11	5,11	5,12		5,11						
6	Withdrawal force	6,12	6,12	6,12	6,12	6,13		6,12						
7	Operating endurance	7												
8	High Temperature Test			7										
9	Low Temperature Test				7									
10	Solderability					7								
11	Soldering heat					8								
12	Terminal strength						1							
13	Cycling Temperature Humidity Test							7						

Test sample quality : 10 pcs / group