

TITLE		SPC. NO.			PAGE : 1 OF 8	
MINIATURE JACK		HTJ-035-21			DATE : 2004.05.31	
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 : 63% to 67%						
Air pressure : 86kPa to 106kPa						
△						
Operating temperature range: -10°C to 65°C						
Storage temperature range : -25°C to 70°C						
ISSUE	DATE	WRN	CHKD	APVD	DESCRIPTIONS	
	2004.05.31	姜鳳梅	夏正雄	楊仲民		
△x1	2005.12.22	姜鳳梅	劉望全	楊仲民	ADD	
△x3	2008.03.10	陸昌妹	夏正雄	郭遠峰	Modify the item 4.1/ 4.5	
△x3	2009.01.06	黃健瑋	夏正雄	郭遠峰	Modify the item 5、6.2、7	
△x1	2012.08.08	江浩霆	郭素玲	郭遠峰	Modify the item 4.5	

TITLE MINIATURE JACK	SPC. NO. HTJ-035-21	PAGE : 2 OF 8 DATE : 2004.05.31
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2. Electrical characteristics:

	Item	Condition	Specifications
1	Rated voltage/ Rated current	With resistive load	D.C.12V.1A
2	Contact resistance	Measurement shall be made at with small current 1000 Hz (100mA MAX.)	30 mΩ MAX.
		Make contacts	
		Break contacts	
		Slide switch contacts	
3	Insulation resistance	A voltage of 500V DC shall be applied for 1 min. after which measurement shall be made. (For the insulation resistance test gauge refer to clause 6.)	100 MΩ MIN.
		Between the conductors which should not make contact under normal conditions.	
		Between each terminal and insulated metal part.	
4	Dielectric strength	500V AC (50 Hz to 60 Hz) for 1 min. Trip current : 2mA (For the insulation resistance test gauge refer to clause 6)	Without damage to parts, arcing or breakdown, etc.
		Between the conductors which should not make contact under normal conditions.	
		Between each terminal and insulated metal part.	

3. Mechanical characteristics

	Item	Condition	Specifications
1	Terminal strength	A static load of 5N (0.5kgf) shall be applied to the tip of the terminals for 1 min. in any direction. A load of 5N (0.5Kgf) shall be applied to the tip of the terminals in the axial direction. The set shall be subjected to 1 bent through an angle of 90° in the right and left directions of terminal thickness.	Without cracks or excessive looseness to the terminal. Electrical and mechanical characteristics shall be satisfied. Without play in terminal, etc.

TITLE MINIATURE JACK	SPC. NO. HTJ-035-21	PAGE : 3 OF 8 DATE : 2004.05.31
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	Item	Condition	Specifications
2	Operating force	Insertion and withdrawal force shall be measured after inserting and withdrawing 3 times by using a gauge of standard dimensions (refer to clause 6) .	Mini size (ϕ 3.5) 2.94N~29.4N (0.3kgf~3.0kgf)
3	Contact pressure	Contact pressure during the make contact shall be measured in the operation by using the minimum dimensional gauge.	1N (102gf) MIN.
		The contact pressure during the break contact shall be measured under the normal conditions.	
		The contact pressure between chip, ring, sleeve and the contact piece. The contact pressure with the make contact.	

4. Endurance characteristics

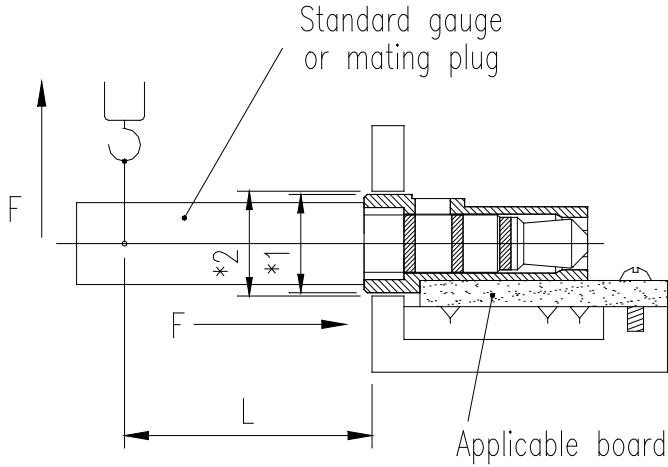
	Item	Condition	Specifications
1	Solderability	Temperature of solder : \triangle 250°C \pm 5°C Time of dip : 3 \pm 0.5 seconds Length of dip : 2 \pm 0.5mm (from top of terminal)	The soldered area shall be covered a minimum of 90% of the surface being immersed.
2	Cold	The jack shall be stored for 96 hours at a temperature of -25 \pm 3°C immediately after which measurement shall be made.	Dimensional requirements electrical and mechanical characteristics shall be satisfied.
3	Dry heat	The jack shall be stored for 96 hours at a temperature of 70 \pm 2°C immediately after which measurement shall be made.	
4	Damp heat (Steady state)	The jack shall be stored at a temperature of 40°C and a humidity of 90% to 95% for 96 hours. Then the jack shall be maintained at standard atmospheric conditions for 1 to 2 hours after which measurement shall be made.	

TITLE MINIATURE JACK	SPC. NO. HTJ-035-21	PAGE : 4 OF 8 DATE : 2004.05.31
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Item	Condition	Specifications		
5 △ 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 (t _s min to max)	120°C (T _{sl} max)		110°C (T _s min) 150°C (T _s max) 75 sec
	Peak/Classification Temperature	165°C (T _{pl} max)		260°C ±5°C (T _p)
	Time within 5°C of actual Temperature (t _p)			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>Temperature vs Time graph showing Ts min., Ts max., Tp, Tp1 max., Ts1 max., and Time intervals ts and tp. Legend: Topside PCB (dashed red line), Padside PCB (solid blue line).</p>			
Soldering Iron Test				
Temperature of soldering Iron : 380±10°C Soldering time : 3±1 seconds		Same as Wave soldering Process		
Insertion force		2.94N~29.4N (0.3kgf~3kgf)		
Withdrawal force		2.94N~29.4N (0.3kgf~3kgf)		

TITLE		SPC. NO.	PAGE : 5 OF 8						
MINIATURE JACK		HTJ-035-21	DATE : 2004.05.31						
6	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>Dimensional requirements electrical and mechanical characteristics shall be satisfied.</p>						
		<p style="text-align: center;">Time in hours (h) (10 cycles)</p>							
7	Sulfuration	The terminals of miniature jack shall be dipped into a dilute solution of 3% potassium sulfide for 1 minute.	60 mΩ MAX.						
8	Operating endurance	<p>Inserting and withdrawing shall be made by the following mating plug or standard dimension gauge, (Refer to Clause 6. grease applied) at a speed of 10 to 20 times / min.</p> <p>Measurement shall be made for every 1000 times.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Mini type (φ 3.5)</td> <td style="width: 50%;">1-504-090-11 (SB-79051)</td> </tr> <tr> <td style="text-align: center;">3000 times</td> <td style="text-align: center;">Without load</td> </tr> <tr> <td style="text-align: center;">2000 times</td> <td style="text-align: center;">Rated resistance load</td> </tr> </table>	Mini type (φ 3.5)	1-504-090-11 (SB-79051)	3000 times	Without load	2000 times	Rated resistance load	<p>Electrical and mechanical characteristics shall be satisfied.</p>
		Mini type (φ 3.5)	1-504-090-11 (SB-79051)						
3000 times	Without load								
2000 times	Rated resistance load								
		Contact resistance	50 mΩ MAX.						

TITLE MINIATURE JACK	SPC. NO. HTJ-035-21	PAGE : 6 OF 8 DATE : 2004.05.31
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Item	Condition	Specifications						
9 Torsion strength	<p>The standard dimension gauge,(Refer to Clause 6)shall be fixed to the set in the actual used condition.</p> <p>Following plug shall be applied to horizontal and vertical directions to the jack each for 5 seconds and each 5 times.△</p> <p>After which measurement shall be made.</p>  <p>*1 Outside dimension of jack *2 Outside dimension of jack +0.3 mm</p> <table border="1" data-bbox="453 1335 1098 1435"> <thead> <tr> <th>Size</th> <th>L (cm)</th> <th>Condition</th> </tr> </thead> <tbody> <tr> <td>Mini (φ 3.5)</td> <td>2.5</td> <td>20N (2.04Kgf)</td> </tr> </tbody> </table>	Size	L (cm)	Condition	Mini (φ 3.5)	2.5	20N (2.04Kgf)	<p>Without damage to the jack body or terminal bending.</p> <p>Electrical and mechanical characteristics shall be satisfied.</p>
Size	L (cm)	Condition						
Mini (φ 3.5)	2.5	20N (2.04Kgf)						

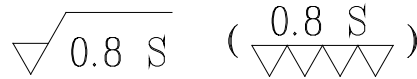
5. △Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

<p>TITLE MINIATURE JACK</p>	<p>SPC. NO. HTJ-035-21</p>	<p>PAGE : 7 OF 8 DATE : 2004.05.31</p>
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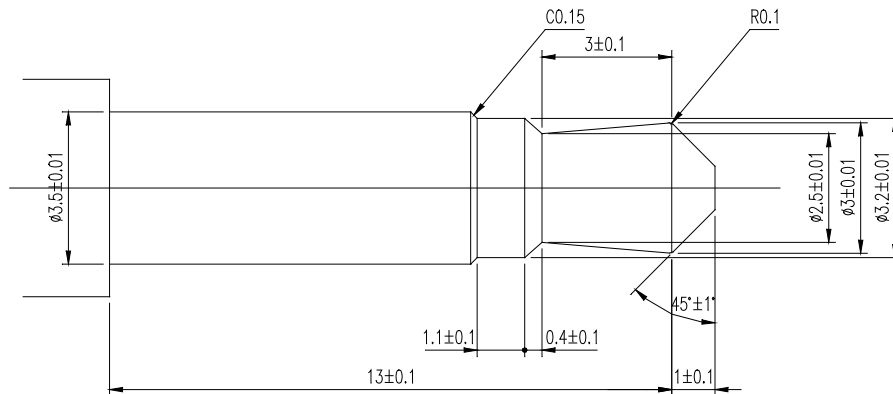
6. For ϕ 3.5 Mini size

6.1 Standard dimension

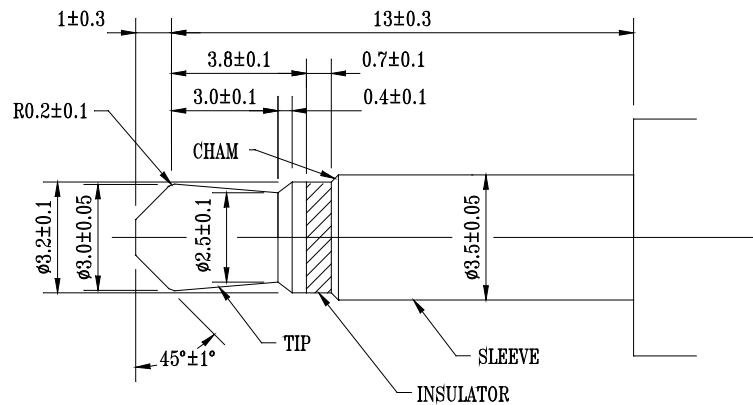
Roughness of the surface:



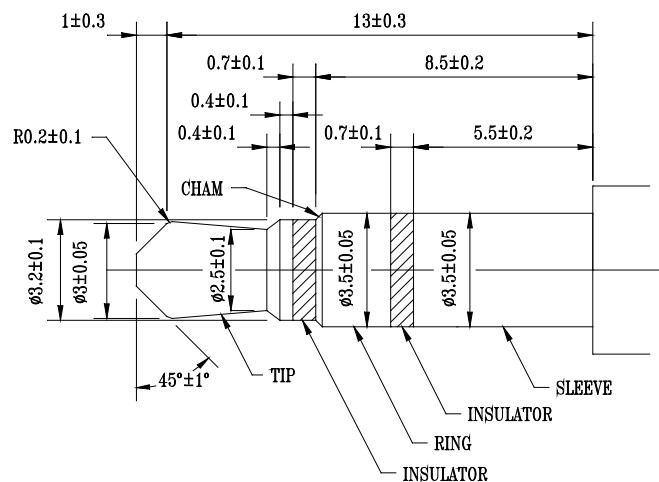
Materials: Stainless steel



6.2 Δ Mating plug dimension



2 Conductors Type



3 Conductors Type

TITLE MINIATURE JACK	SPC. NO. HTJ-035-21	PAGE : 8 OF 8 DATE : 2004.05.31
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7. Δ Endurance test sequence :

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

Test sample quality : 2 pcs min. / group