

 <b>SHANGHAI ELECTRICAL COMPONENTS TEST LABORATORY</b>	<b>REPORT No.:</b> 501-115107 <b>PROJECT No.:</b> PRJ-15-000000151
<h1>TEST REPORT</h1>	<b>STARTED:</b> 2015-03-13 <b>COMPLETED:</b> 2015-04-30
<b>CUSTOMER INFORMATION:</b> Name: Consumer Devices Request by: Hill He Request Date: 2015-03-13 Address: No.668 Guiping Road Shanghai, China.	<b>SPECIMEN INFORMATION:</b> Description: Low profile battery connector Part No.: 2289817-1 Qty.: 110 Received Date: 2015-03-13
<b>DISPOSED OF SAMPLES:</b> Keep in lab	
<b>DESCRIPTION :</b> Low profile battery connector See Fig1, total 136pcs samples were used for 22 test groups. <div style="text-align: center;">  <p>Fig 1.</p> </div>	
<b>SCOPE :</b> This specification covers the requirements for product performance, test methods and quality assurance. Testing was performed at TE Connectivity Shanghai Electrical Test Laboratory between Mar 13, 2015 and Apr 31, 2015.	
<b>TEST PERFORMED :</b> See test sequence (page 2) and test procedure (page 7~ page 10).	
<b>SPECIFICATION :</b> 108-115096.	
<b>CONCLUSION :</b> See the summary of test result.	
<b>DISTRIBUTION :</b> Applicant	
<b>PREPARED BY:</b> Zhihua Dong Test Engineer	<b>CHECKED BY:</b> Wu Hellen Test Supervisor
<b>APPROVED BY:</b> Robin Lu Test Manager	<b>CLASSIFICATION:</b> Class 2
<b>APPENDICES:</b> See the test records.	

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**TEST PURPOSE**

This is product qualification test. The purpose of this test is to evaluate the performance of Low profile battery connector. Testing was performed on below products to determine it compliance with the requirements of 108-115096.

**TEST SEQUENCE**

Test Examination	Test Group																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Test Sequence (a)																					
Resistance to reflow heat	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1		1	
Visual examination of product	2,6	2,6	2,6	2,6	2,6	2,6	2	2,8	2,4	1,3	2,4	2,4	2,4	2,4	2,4	2	2	2	2	1	2	1
Contact resistance (LLCR)	3,7	3,7	3,7	3,7	3,7	3,7		3,6	6		5	5	5		5	3					5	
Insulation resistance	4,8	4,8	4,8	4,8	4,8	4,8												3				
Withstanding Voltage																			3			
Temperature rise																	3					
Withstand current test																					3	
Contact normal force							3	4,7	5		4	4	4		4						4	
Durability								5														
Contact strength									3													
Solder pegs retention force										2												
Drop test											3											
Vibration(sinusoidal)												3										
Vibration(Random)													3									
Physical shock														3								
Peeling strength															3							
Low temperature storage test	5																					
High temperature storage test		5																				
Salt spray			5																			
High-temperature high-humidity test				5																		
Thermal shock					5																	
Cyclic temperature & Humidity						5																
Solder-ability																					2	
Resistance to soldering heat																						2

(a): Numbers indicate sequence in which the tests are performed.

**SUMMARY OF TEST RESULTS**

Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
1	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	initial	17.85	10.14	14.05	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	5	initial	1.71	1.05	1.40	10 <sup>10</sup> Ω	1000MΩ	Meet spec
	Low Temperature storage Test	5	final	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec

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Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
1	LLCR	5	final	20.44	9.62	14.92	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	5	final	3.69	2.32	3.09	10 <sup>11</sup> Ω	1000MΩ	Meet spec
2	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	initial	16.92	7.86	13.40	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	5	initial	5.18	4.04	4.73	10 <sup>11</sup> Ω	1000MΩ	Meet spec
	High Temperature storage Test	5	final	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	final	19.82	10.27	14.54	mΩ	40mΩ Max.	Meet spec
	Insulation Resistance	5	final	2.46	1.92	2.28	10 <sup>11</sup> Ω	1000MΩ	Meet spec
3	Resistance to reflow heat	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	10	initial	17.38	13.00	14.96	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	10	initial	7.32	3.63	4.74	10 <sup>11</sup> Ω	1000MΩ	Meet spec
	Salt Spray	10	final	No corrosion phenomena			N/A	No abnormalities	Meet spec
	Examination of Product	10	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	10	final	22.1	15.49	18.21	mΩ	40mΩ Max.	Meet spec
	Insulation Resistance	10	final	30.66	1.3	5.75	10 <sup>10</sup> Ω	1000MΩ	Meet spec
4	Resistance to reflow heat	16	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	16	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	16	initial	13.55	10.37	11.73	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	16	initial	5.39	0.38	2.81	10 <sup>11</sup> Ω	1000MΩ	Meet spec
	High-temperature High-humidity	16	final	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	16	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	16	final	29.76	13.73	19.33	mΩ	40mΩ Max.	Meet spec
	Insulation Resistance	16	final	3.01	0.56	1.55	10 <sup>11</sup> Ω	1000MΩ	Meet spec
5	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	initial	17.78	13.99	15.83	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	5	initial	3.64	0.24	1.55	10 <sup>11</sup> Ω	1000MΩ	Meet spec
	Thermal Shock	5	final	No physical damage			N/A	No abnormalities	Meet spec

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Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
5	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	final	14.60	10.56	12.67	mΩ	40mΩ Max.	Meet spec
	Insulation Resistance	5	final	5.92	1.47	2.78	10 <sup>11</sup> Ω	1000MΩ	Meet spec
6	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	initial	17.77	12.93	15.62	mΩ	30mΩ Max.	Meet spec
	Insulation Resistance	5	initial	2.38	1.29	1.75	10 <sup>10</sup> Ω	1000MΩ	Meet spec
	Cyclic Temperature & humidity	5	final	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	5	final	21.68	12.88	16.63	mΩ	40mΩ Max.	Meet spec
	Insulation Resistance	5	final	1.20	1.11	1.14	10 <sup>11</sup> Ω	1000MΩ	Meet spec
7	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	103.50	81.40	95.20	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	151.00	127.30	140.29	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	203.30	180.50	192.83	gf	120fg-280gf	Meet spec
8	Resistance to reflow heat	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	10	initial	19.25	8.50	12.89	mΩ	30mΩ Max.	Meet spec
	Contact Normal force (0.70mm)	10	final	104.70	87.60	97.17	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	10	final	152.30	125.90	142.06	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	10	final	199.00	176.80	190.88	gf	120fg-280gf	Meet spec
	Durability	10	final	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	10	final	19.73	15.26	17.32	mΩ	50mΩ Max.	Meet spec
	Contact Normal force (0.70mm)	10	final	144.40	81.10	101.42	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	10	final	158.40	106.60	138.54	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	10	final	198.90	155.90	187.43	gf	120fg-280gf	Meet spec
	Examination of Product	10	final	No physical damage			N/A	No abnormalities	Meet spec
9	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Contact Strength	5	initial	Physical damage			N/A	8N	Meet spec

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Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
9	Examination of Product	5	final	Physical damage			N/A	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	98.5	81.5	93.7	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	139.7	132.4	136.3	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	197.2	177.5	182.6	gf	120fg-280gf	Meet spec
	LLCR	5	final	25.1	12.67	17.45	mΩ	30mΩ Max.	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
10	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Solder pegs retention force	5	final	8.1	5.6	6.4	N	5N Min.	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
11	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Drop test	5	final	There were discontinuities greater than 10us			N/A	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	110	82	96	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	159	126	140	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	198	177	188	gf	120fg-280gf	Meet spec
	LLCR	5	final	17.66	13.28	15.52	mΩ	30mΩ Max.	Meet spec
12	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Vibration(sinusoidal)	5	final	No discontinuity greater than 10 μs			mΩ	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	96.50	81.40	88.58	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	141.90	111.20	134.65	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	190.50	157.10	184.15	gf	120fg-280gf	Meet spec
	LLCR	5	final	23.78	13.79	17.65	mΩ	30mΩ Max.	Meet spec
13	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Vibration(Random)	5	initial	No discontinuities greater than 10 us.			N/A	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	96.50	81.40	88.58	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	141.90	111.20	134.65	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	190.50	157.10	174.15	gf	120fg-280gf	Meet spec
	LLCR	5	final	23.78	13.79	17.65	mΩ	30mΩ Max.	Meet spec
14	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec

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Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
14	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
	Physical shock	5	final	No discontinuities greater than 10 us.			N/A	No abnormalities	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
15	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Peeling Strength	5	initial	No physical damage			N	30N 10s.	Meet spec
	Contact Normal force (0.70mm)	5	final	97.8	83.4	86.4	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	145.2	113.4	129.5	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	187.5	155.7	172.1	gf	120fg-280gf	Meet spec
	LLCR	5	final	22.7	15.7	18.5	mΩ	30mΩ Max.	Meet spec
16	Resistance to reflow heat	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	LLCR	10	final	19.20	13.68	16.29	mΩ	30mΩ Max.	Meet spec
17	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Temperature Rise	5	final	32.65	26.85	29.44	°C	30°C Max.	Meet spec
	Examination of Product	5	final	No physical damage			N/A	No abnormalities	Meet spec
18	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Insulation Resistance	5	final	3.63	1.48	2.46	10 <sup>10</sup> Ω	1000MΩ Min.	Meet spec
19	Resistance to reflow heat	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	10	initial	No physical damage			N/A	No abnormalities	Meet spec
	Withstanding Voltage	10	final	No breakdown or flashover			N/A	No abnormalities	Meet spec
20	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Solderability	5	final	Soldering coverage greater than 95%.			N/A	95% Min.	Meet spec
21	Resistance to reflow heat	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Examination of Product	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Withstand current	5	initial	No physical damage			N/A	No abnormalities	Meet spec
	Contact Normal force (0.70mm)	5	final	95.10	81.50	90.22	gf	80gf Min.	Meet spec
	Contact Normal force (1.00mm)	5	final	140.50	129.90	136.84	gf	100gf Min.	Meet spec
	Contact Normal force (1.30mm)	5	final	200.20	183.40	188.90	gf	120fg-280gf	Meet spec
	LLCR	5	final	18.59	10.35	14.23	mΩ	30mΩ Max.	Meet spec

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Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
22	Examination of Product	5	initial	No physical damage				No abnormalities	Meet spec
	Resistance to soldering heat	5	final	No physical damage				No abnormalities	Meet spec

**ENVIRONMENTAL CONDITION**

Unless otherwise stated, the following environmental conditions prevailed during testing:  
 Temperature: 15°C to 35°C,      Relative Humidity: 25% to 75% R.H.

**TEST SPECIMEN**

Assembly

Name	P/N	Qty.	Manufacturer
Low profile battery connector	2289817-1	136	TE

**TEST PROCEDURE**

**1. Examination of Product**

Test Condition: Visual, dimensional and functional per applicable inspection plan. In according with IEC 60512-1-1 Magnification 10x.

Requirements: Meets requirements of product drawing and applicable instructions on customer drawing, and application specification.

Test Method: 108-115096.

**2. Low Level Contact Resistance**

Test Condition: Subject specimens to 20mV Max. Open circuit at 100mA. Need to exclude wire resistance from measurement. Per EIA 364-23.

Requirements: 30mΩ Max. at 1.0mm stroke @ 25°C; 30mΩ Max. at 1.0mm stroke @ -30°C;

30mΩ Max. at 1.0mm stroke @ 85°C

Test Method: 108-115096.

**3. Insulation Resistance**

Test Condition: Subject specimens to 100VDC, 1 minute hold. Test between adjacent contacts. Per EIA 364-21.

Requirements: 1000 MΩ Min.

Test Method: 108-115096.

**4. Withstanding Voltage**

Test Condition: Unmated Connector with 500 VAC between adjacent terminals for 1 minute. Per EIA 364-20.

Requirements: Neither creeping discharge nor flashover shall occur. Current leakage: 1mA Max.

Test Method: 108-115096.

**5. Temperature Rise**

Test Condition: A current of 5.0A shall be applied to power pin and its corresponding GND pin. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1 °C. Energize 100% of the circuit. Per EIA 364-7.0, Method 2

Requirements: After test, 30°C Max.

Test Method: 108-115096.

**6. Withstand current test**

Test Condition: A current of 5.0A shall be applied to power pin and its corresponding GND pin. Duration: 12 hours.

Lifting speed voltage: 500V / S

Requirements: LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30mΩ Max. at 1.0mm stroke @ -30°C;

30mΩ Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke.

Test Method: 108-115096.

**7. Contact normal force**

Test Condition: Measure force necessary to mate samples at rate of 10.0mm a minute. Per EIA-364-13 ,Method A

Requirements: 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke

Test Method: 108-115096.

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**8. Durability**

Test Condition: Mating/un-mating samples for 5000 cycles at maximum rate of 10~20 cycles per minute with 1.0mm stroke. Record the value of at 1000, 3000, 5000 cycles. Per EIA-364-09.

Requirements: No physical damage to any part of the connectors. Contact resistance: 50mΩ Max. at 1.0mm stroke(Final) Contact normal force change <20% from initial status:

Test Method: 108-115096.

**9. Contact strength**

Test Condition: Apply 8N force with the push pole in X1, X2, Z1, Z2 4 direction on the contact at rate of 10.0mm a minute. (The connector must soldered on the test board).

Requirements: LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30m Ω Max. at 1.0mm stroke @ -30°C; 30mΩ Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke The permanent deformation of contact 0.20mm max. in 4 direction.

Test Method: 108-115096.

**10. Solder pegs retention force**

Test Condition: Apply 5N force with the push the solder pegs as at rate of 10.0mm a minute(the connector must soldered on the test board)

Requirements: Solder peg without any loosening; Connector without any damage; And the solder pegs dimension meet the drawing specification.

Test Method: 108-115096.

**11. Drop test**

Test Condition: Drop height:1.2 meter Drop the 3 times in every surface if the fixture(total 6 surface,18 times) (the connector must soldered on the test board which fixed on the test fixture)

Requirements: No electrical discontinuities greater than 50us shall occur. No evidence of physical damage. LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30m Ω Max. at 1.0mm stroke @ -30°C; 30m Ω Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke

Test Method: 108-115096.

**12. Vibration(sinusoidal)**

Test Condition: Sine Sweep: 5 ~ 9Hz, 1.2mm/s<sup>2</sup>; 9 ~ 200Hz; 4m / s<sup>2</sup> sweep rate: 1oct / min. Three axis, each axis 5 cycles. Logarithmic sweep mode Sinusoidal vibration: a) Mated connector will be subject to another three cycles five minutes sinusoidal vibration peak to peak 0.76mm. In a period of two and a half minutes from 10Hz to 30Hz, then in two and a half minutes from 30Hz reduced to 10Hz. b) then samples will be subject to another three cycles five minutes sinusoidal vibration peak to peak 0.38mm. In a period of two and a half minutes from 30Hz to 60Hz, then the decrease in 2 and a half from 60Hz to 30Hz. these vibration a) and b) must be subjected to each axial.

Requirements: In vibration process, the voltage increasing of the oscilloscope does not exceed 1.2V. No evidence of physical damage. LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30m Ω Max. at 1.0mm stroke @ -30°C; 30m Ω Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke

Test Method: 108-115096.

**13. Vibration(Random)**

Test Condition: Mated connectors subject to : Frequency range: 20-2000HZ; Acceleration: 20-1000HZ 0.04g<sup>2</sup> / HZ 1000-2000HZ -6dB / Oct Vibration time: each axis (X, Y, Z) for 1 hour

Requirements: In vibration process, the voltage increasing of the oscilloscope does not exceed 1.2V. No evidence of physical damage. LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30m Ω Max. at 1.0mm stroke @ -30°C; 30m Ω Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke

Test Method: 108-115096.

**14. Physical shock**

Test Condition: Accelerated Velocity: 400m/s<sup>2</sup>; Waveform: Half-sin Duration: 11m sec. Number of drops : 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. 100mA applied Per EIA 364-27 Method A.

Requirements: No electrical discontinuities greater than 50us shall occur. No evidence of physical damage. LLCR meet 30mΩ Max. at 1.0mm stroke @ 25°C; 30m Ω Max. at 1.0mm stroke @ -30°C; 30m Ω Max. at 1.0mm stroke @ 85°C; Contact normal force meet 80gf Min. at 0.70 mm stroke ;100gf Min. at 1.00mm stroke ;120gf~280gf at 1.30mm stroke

Test Method: 108-115096.

**15. Peeling strength**

Test Condition: Solder connectors onto PCB, Press the connector from 4 directions at rate of 10.0mm a minute.

Requirements: No visible physical damage shall be noticed to a soldered connector when it is pulled up from the PCB in the 4 directions with a minimum force of 100N.

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Test Method: 108-115096.

#### 16. Low temperature storage test

Test Condition: Subject mated samples to temperature of -40°C 96 hours or longer (Connector should soldered on the testing board. Cool down from ambient temperature to -40°C with speed 1 °C/minute , keep the temperature at -40°C or lower for 96 hours or longer, then temperature rise to 25°C with 1 °C/minute speed),Recovery 1 hours at ambient atmosphere. (JIS-C0020)

Requirements: No mechanical damage, no performance change. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 17. High temperature storage test

Test Condition: Subject mated samples to temperature of 85°C 96 hours or longer (Connector should soldered on the testing board. Temperature up from ambient temperature to 85°C with speed 1 °C/minute , keep the temperature at 85°C or lower for 96 hours or longer, then cool down to 25°C with 1 °C/minute speed),Recovery 1 hours at ambient atmosphere. (JIS-C0021)

Requirements: No mechanical damage, no performance change. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 18. Salt spray

Test Condition: Subject mated connectors with 5 %, 35°C concentration for 48 hours; drying 2 hours Per EIA 364-26 Condition B.

Requirements: No corrosion that damages function of connector allowed. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 19. High-temperature high-humidity test

Test Condition: Subject mated samples to continuously for 168hours or longer at 65°C and 95% relative humidity. (Connector should soldered on the testing board. Temperature and humidity up time: 1 hour, Temperature and humidity: 1 hour, recovery time: 1hour).

Requirements: No mechanical damage, no performance change. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 20. Thermal shock

Test Condition: Subject mated samples to 24 cycles between -40°C and +85°C (transfer time <25s), then cool to ambient temperature. Recovery 2hours at ambient atmosphere.

Requirements: No mechanical damage, no performance change. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 21. Cyclic temperature & Humidity

Test Condition: Subject mated samples to 25~55°C, 95% R.H. 24 hours for 2 cycles. Then recovery to 25°C, 95% R.H. in an hour; and keep 1 hour for recovery. (Connector should soldered on the testing board).

Requirements: No mechanical damage, no performance change. Contact resistance: 30mΩ Max. at 1.0mm stroke.

Insulation resistance: 1000 MΩ Min.

Test Method: 108-115096.

#### 22. Solder-ability

Test Condition: Dip solder tails into the molten solder (held at 245±5°C) up to 0.5mm from the tip of tails for 3±0.5 seconds.

Flux : Alpha 100 Per EIA 364-52

Requirements: Contact solder pad shall have a Min. 95% solder coverage.

Test Method: 108-115096.

#### 23. Resistance to soldering heat

Test Condition: Soldering iron temperature : 380±10°C 5sec. Max. No pressurize a time Per EIA 364-56.

Requirements: No physical damage shall occur.

Test Method: 108-115096.

#### 24. Resistance to reflow heat

Test Condition: Temperature profile; Refer to fig. Per EIA 364-56

Requirements: No physical damage shall occur; The co-planarity less than 0.08 (initial); The co-planarity less than 0.10

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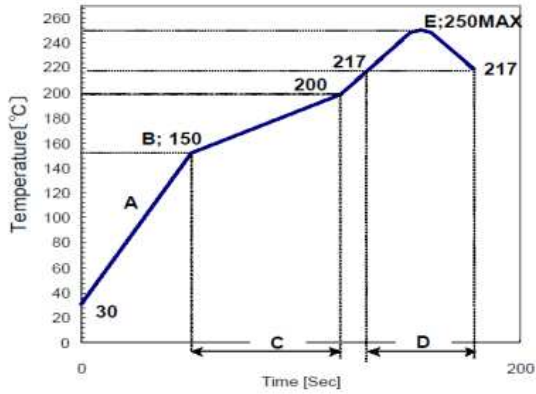
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(Final).  
Test Method: 108-115096.



	Condition
A : The speed of temperature rising	3.0 °C /s Max
B: The start temperature of pre-heating	150~200 °C
C: Time of pre-heating	60~ 180sec
D: Time of up to 217 °C	60~150sec
E: Temperature of peak point	250°C

Number of reflow times; 2 times.

----- END OF REPORT -----