

1 Piece compressive BTB Connector

1. Purpose:

This is qualification test. The purpose of this test is to evaluate the performance of 1 piece compressive BTB connector. Testing was performed on below products to determine it compliance with the requirements of product specification 108-19386 Rev.C.

2. Scope:

This is test report for 1 piece compressive BTB connector. Testing was performed at TE connectivity Shanghai Electrical Components Test Laboratory between Aug.19, 2013 and Nov 14, 2013.

3. Conclusion:

The product met the electrical, mechanical, and environmental performance requirements of TE product specification 108-19386 Rev.C.

4. Test samples:

Samples were taken randomly from current production. The following part numbers were used for test:

Description	Product Part No.
8 Pins, 2.0 Pitch, 1 Piece BtoB Connector	1551120-2
2 Pins, 2.0 Pitch, 1 Piece BtoB Connector	2246092-2

5. Test Method

5.1 Examination of Product

Visual, dimensional and functional per applicable inspection plan.

Requirements: Meets requirements of product drawing

Test Method: In accordance with IEC 60512-1-1 and IEC 60512-1-2.

5.2 Terminal Resistance (Low Level)

Measure at nominal working position (20 mV, 100 mA DC max.). Simple sketch shows the testing method.

Four-wire measurement method.

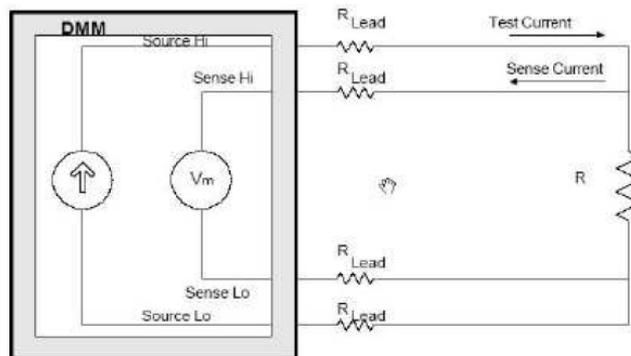


Figure 2 Termination Resistance Measurement Points

Requirements: 40mΩ Max. (Initial), 60mΩ Max. (Final)

Test Method: IEC 60512-2-1

5.3 Rapid change of temperature

The samples were subjected to a rapid change of temperature test with the following parameters:

One cycle consists of:

Upper temperature: 85°C for 60 minutes.

Lower temperature: -40°C for 60 minutes.

Condition: mated.

Number of cycles: 100.

Test Method: IEC 60512-11-4

5.4 Normal Force

The contacts were mounted on a normal force tester. During the press-in operation, the contact normal force vs. deflection curve was measured.

Requirements: ① 0.2N Min. :Compressed to 1.0mm to PWB surface;

② 0.8N Max.: Compressed to 0.4mm to PWB surface.

5.5 Dry heat

The samples were subjected to a dry heat test under the following conditions:

Temperature: 85°C.

Condition: mated.

Duration : 1000 hours.

Test Method: IEC 60512-11-9

5.6 Cold

The samples were subjected to a temperature of -40°C during 16 hours.

Test method: IEC 60512-11-10

5.7 Damp Heat Cyclic

The samples were subjected to a cyclic damp heat test under the following conditions:

Upper temperature: 55°C.

Lower temperature: 25°C.

Relative humidity : 95%.

Condition : mated.

Number of cycles : 5.

Test method: IEC 60512-11-12

5.8 STORAGE (alternating temperature):

The samples were subjected to a storage test under the following conditions:

Temp. change : -40/+85°C

Change rate : 1°C/min.

Condition: unmated.

Duration : 10 cycles of 8 hrs. each

Test method: IEC 60068-2-14

5.9 RESISTANCE TO SOLDERING HEAT (increased T-peak)

The samples were subjected to a temperature profile with a peak temp. of 260°C.

Test method: JEDEC J-STD-020B

5.10 Mixed Flowing gas corrosion test

The test samples were placed in a climatic chamber under the following conditions:

Temperature : 25°C.

Relative humidity : 75%.

H2S concentration : 10 ppb.

NO2 concentration : 200 ppb.

Cl2 concentration : 10 ppb.

SO2 concentration : 200 ppb.

Condition : mated

Duration : 10 days.

Test method: IEC 60068-2-60

6. Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature: 15°C to 35°C Relative Humidity: 25% to 75%

7. Test Sequence

Description	A	B	C	D
Examination of product	1, 3, 8	1, 12	1,6	1,6
Termination resistance	4, 7	3, 6, 9, 11		3,5
Contact normal force	5	4, 7	3,5	
Rapid change of temperature	6			
Dry heat		5		
Cold		8		
Damp / heat cyclic		10		
Storage (alternating temp)			4	
Soldering heat	2	2	2	2
Mixed Gas				4
Sample size	5pcs	5pcs	5pcs	5pcs

8. Test Result

Group	Test Item	N	Condi tion	Test Result			Require ment	Judgme nt
				Max	Min	Ave		
A	Examination of Product	5	Initial	No physical damage occurred			No abnormal ities	Pass
	Soldering heat	5	Initial	No evidence abnormalities			No abnormal ities	Pass

	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Termination resistance	5	Initial	39.02	35.57	37.27	<40mΩ	Pass
	Normal Force at 1.0mm to PWB	5	Initial	0.39	0.32	0.35	>0.2N	Pass
	Normal Force at 0.4mm to PWB	5	Initial	0.78	0.72	0.76	<0.8N	Pass
	Rapid change of temperature	5	Final	No physical damage occurred			No abnormalities	Pass
	Termination resistance (ΔR)	5	Final	2.68	0.03	1.73	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
B	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Soldering heat	5	Initial	No evidence abnormalities			No abnormalities	Pass
	Termination resistance	5	Initial	39.01	35.15	37.64	<40mΩ	Pass
	Normal Force at 1.0mm to PWB	5	Initial	0.38	0.32	0.36	>0.2N	Pass
	Normal Force at 0.4mm to PWB	5	Initial	0.79	0.72	0.75	<0.8N	Pass
	Dry heat	5	Final	No physical damage occurred			No abnormalities	Pass
	Termination resistance (ΔR)	5	Final	11.14	0.62	5.17	<20mΩ	Pass
	Normal Force at 1.0mm to PWB	5	Final	0.37	0.32	0.36	>0.2N	Pass
	Normal Force at 0.4mm to PWB	5	Final	0.77	0.71	0.74	<0.8N	Pass
	Cold	5	Final	No physical damage occurred			No abnormalities	Pass
	Termination resistance (ΔR)	5	Final	13.23	0.05	3.05	<20mΩ	Pass
	Damp / heat cyclic	5	Final	No physical damage occurred			No abnormalities	Pass
	Termination resistance (ΔR)	5	Final	15.12	1.1	4.81	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
C	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Soldering heat	5	Initial	No evidence abnormalities			No abnormalities	Pass
	Normal Force at 1.0mm to PWB	5	Final	0.38	0.3	0.33	>0.2N	Pass
	Normal Force at 0.4mm to PWB	5	Final	0.77	0.72	0.74	<0.8N	Pass
	STORAGE	5	Final	No physical damage occurred			No abnormalities	Pass
	Normal Force at 1.0mm to PWB	5	Final	0.36	0.3	0.31	>0.2N	Pass
	Normal Force at 0.4mm to PWB	5	Final	0.76	0.72	0.74	<0.8N	Pass

	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
D	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Soldering heat	5	Initial	No evidence abnormalities			No abnormalities	Pass
	Termination resistance	5	Final	38.12	36.29	37.11	<40mΩ	Pass
	Mixed gas	5	Final	No physical damage occurred			No abnormalities	Pass
	Termination resistance (ΔR)	5	Final	7.53	0.6	3.03	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass

END