1 PIECE BOARD LEVEL SHIELD

1. SCOPE

1.1. Content

This specification covers performance and test requirements for a 1 piece Board Level Shield. The shield is designed to reflect radiation from underlying components, as well as to protect underlying components from external radiation. The shielding is designed to be soldered to a PC board.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in this specification shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has not been completed. The Qualification Test Report number will be issued upon successful qualification testing.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- 501-115148: Qualification Test Report

2.2. Industry Documents

- IEC 60512 Basic testing procedures and measuring methods for electromechanical Components for electrical equipment.
- IEC 60068 Basic environmental testing procedures.

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Ratings

Operating temperature:	-30℃ to 85℃
Storage temperature:	-40℃ to 85℃

3.3. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Visual examination of product	Meets requirements of product drawing.	Visual, dimensional and functional per applicable inspection plan. In accordance with IEC 60512-1-1
ELECTRICAL		
Contact resistance	Max. open voltage 20mV. Max. current 100mA DC. Requirement: Initial 50mΩ max. ΔR 100mΩ max.	In accordance with IEC 60512-2-1 See paragraph 3.5.1. Measure on 5 points.
MECHANICAL		
Vibration	No physical damage. Contact resistance Initial 50mΩ max. ΔR 100mΩ max.	In accordance with IEC 60512-6-4 10-55Hz sinusoidal sweeping, 1 octave/minute. Amplitude 1.5mm max., acceleration 15g max. 2 hours in each of 3 mutual perpendicular axes (total 6 hours).
Free fall test	No physical damage.	In accordance with IEC 60068-2-32 Release PCB of 1.5m height onto a level concrete surface 6 drops
ENVIRONMENTAL		
Solder ability	Requirement: 5% max. dewetting on vertical wall sides up to minimal 0.40mm of the PCB top surface	In accordance with JEDEC JESD22-B102E, Method 2 Test type: Pb-free solder ability test.
Damp Heat, steady state	No physical damage Contact resistance: Initial 50mΩ max. ΔR 100mΩ max	In accordance with IEC 60068-2-78 85°C, 85%RH, 240 hours.
Salt mist 2 hours	No physical damage Contact resistance: Initial 50mΩ max. ΔR 100mΩ max	In accordance with IEC 60512-11-6 Temperature 35±2◦C, RH 90-95%, Salt mist: 5 ±1% salt solution. Duration: 2 hrs. After test: Wash parts and return to room ambient for 1 hour.
Salt mist 24 hours	No physical damage Contact resistance: Initial 50mΩ max. ΔR 100mΩ max	In accordance with IEC 60512-11-6 Temperature 35±2◦C, RH 90-95%, Salt mist: 5 ±1% salt solution. Duration: 24 hrs. After test: Wash parts and return to room ambient for 1 hour

NOTE
Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence shown in Paragraph 3.4.

3.4. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)				
	1	2	3	4	5
	TEST SEQUENCE (b)				
Visual examination of products	1, 8	1, 8	1, 6	1, 6	1, 6
solder ability	2	2	2	2	2
Contact resistance	3, 5, 7	3, 4, 6	3, 5	3, 5	3, 5
Vibration	4				
Free Fall test	6	5			
Salt mist 2 hours			4		
Salt mist 24 hours				4	
Damp Heat					4

NOTE

(a) See paragraph 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

SAMPLE DESCRIPTION	NUMBER OF SAMPLES IN TEST GROUP:				
	1	2	3	4	5
1 piece shield solder on PCB	5	5	5	5	5

3.5. Additional Test and Measuring Details

3.5.1 Contact resistance

3.5.2

Contact resistance shall be measured as indicated in figure 1.
Measure from all 5 cover positions to the PCB track.

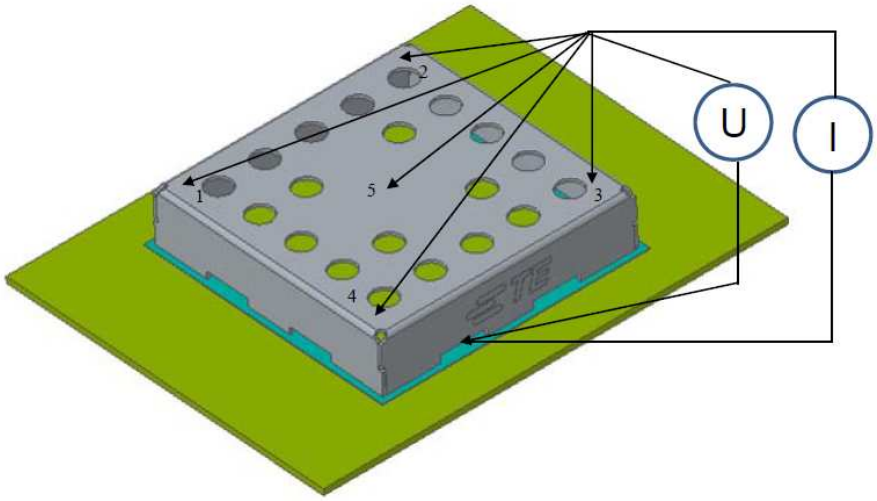

Figure 1. Contact resistance measurement set-up.
5 point measurement.

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification testing

A. Sample selection

Samples shall be prepared in accordance with applicable instructions and shall be selected at random from current production.
Unless otherwise specified, all test-groups shall consist of a minimum of 5 connectors of which all contacts shall be tested.

B. Test sequence

Qualification inspection shall be verified by testing samples as specified in paragraph 3.4.

4.2. Acceptance

Acceptance is based upon verification that product meets requirements of paragraph 3.3. Failures attributed to equipment, test set-up, applied customer components or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for requalification. Testing to confirm corrective action is required before resubmittal.

4.3. Quality conformance inspection

Applicable TE quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.