



EEPROM Assembly Module

1. SCOPE

1.1. Content

This specification covers performance, tests, and quality requirements for the EEPROM Assembly Module. This assembly contains a plug, locking back cover, two contacts, and a microchip EEPROM. The plug and contacts are modified versions of the EP 2.5 connector series, designed to mate to the EP 2.5 header assembly.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 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 is 501-143144.

1.4. Revision Summary

Revisions to this specification include:

- Updated ratings in Section 3.3

2. APPLICABLE DOCUMENTS AND FORMS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. TE Connectivity Specifications

114-143144	Application Specification
501-143144	Qualification Test Report

2.2. Commercial Standards and Specifications

EIA-364	Electrical Connector/Socket Test Procedures Including Environmental Classifications
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2.3. Reference Documents

109-1	General Requirements for Testing
102-950	Qualification of Separable Interface Connectors

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. Materials

Materials used in the construction of this product shall be as specified on the applicable TE drawing.

3.3. Ratings

- A. Voltage Rating : 3.0 – 4.5 VDC
- B. Active Current, Read : 0.3 mA
- C. Active Current, Write : 0.5 mA
- D. Temperature Rating : -25°C to +85°C

3.4. Performance Requirements and Test Description

The product should meet the electrical, mechanical and environmental performance requirements specified in Figure 1. All tests shall be performed at ambient environmental conditions otherwise specified.

3.5. Test Requirements and Procedure Summary

Test Description	Requirement	Procedure
Examination of Product	Meet requirements of product drawing. After testing, there shall be no corrosive influence on the performance and no physical damage.	EIA-364-18 Visual and dimensional (C of C) inspection per the product drawing.
Electrical		
Termination Resistance	Initial: 10 mΩ (milliohm) (maximum) Final: 20 mΩ (milliohm) (maximum)	EIA-364-23 Subject contacts assembled in a housing to 20mV (max.) open circuit at 100 mA (max). Measure between the header pin and the top microchip pad (See Figure 2). Test on mated connectors.
Insulation Resistance	Initial: 1000 MΩ (minimum) Final: 500 MΩ (minimum)	EIA-364-21 Apply 500 VDC and hold for 2 minutes. Test between closest adjacent contacts on mated connector. Test Performed without EEPROM.
Dielectric Withstanding Voltage	1 minute hold without a creep discharge or flashover. Current leakage: 5 mA maximum	EIA-364-20, Condition I 1 kilovolts AC at sea level (initial) 1 kilovolts AC at sea level (final). Hold at specified voltage for 1 minute. Test between contacts in adjacent circuits and between housing and all contacts in an unmated connector. Test Performed without EEPROM.
Mechanical		
Random Vibration	No electrical discontinuity greater than 1 μs shall occur. No physical damage that would impair product performance.	EIA-364-28, Condition VII, Level D Subject mated connector to 3.10G's RMS between 20 and 500 Hz. Apply 15 minutes in each of 3 mutually perpendicular planes.

Figure 1 (continued)

Mechanical Shock	No electrical discontinuity greater than 1 μ s shall occur. No physical damage that would impair product performance.	EIA-364-27, Condition H Subject mated connector to 30G's half-sine shock pulse of 11 ms duration. 3 drops each to normal and reversed directions of X, Y and Z axis. Total of 18 drops.
Durability	No physical damage that would impair product performance.	EIA-364-9 Manually mate and un-mate connectors for 10 cycles.
Mating Force	17.8 N (maximum)	EIA-364-13, Method A Operation Speed: 25.4 mm/min Measure the force required to mate connectors.
Unmating Force	2 N (minimum)	EIA-364-13, Method A Operation Speed: 25.4 mm/min Measure the force required to un-mate connectors.
Connector Locking Strength	25.8 N (minimum)	EIA-364-98 Measure connector locking strength at a maximum rate of 100 mm/min.
Environmental		
Thermal Shock	No physical damage that would impair product performance.	EIA-364-32, Method A, Test Condition I Subject mated specimens to 5 cycles between -55°C and 85°C with 30 minute dwell time at temperature extremes and 5 minute transition (maximum) between temperatures.
Humidity-Temperature Cycling	No physical damage that would impair product performance.	EIA-364-31, Method IV Subject mated specimen to 10 cycles between 25°C and 65°C at 80-100% RH. Measurements to be recorded after specimens are held for 3 hours at ambient temperature and humidity. 1 cycle is 24 hours
Temperature Life	No physical damage that would impair product performance.	EIA-364-17, Method A, Test Condition 4, Test Condition C Subject mated connector to 105 \pm 2°C for a duration of 500 hours. Measurements to be recorded after specimens are held for 3 hours at ambient temperature and humidity.

Figure 1 (end)



NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 3.

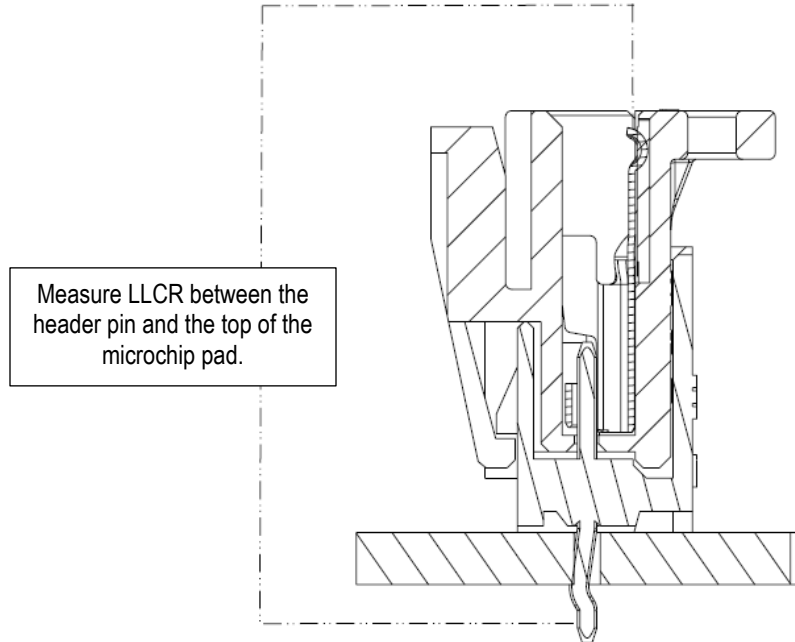


Figure 2

3.6. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)				
	1 Mechanical	2 Temperature Life	3 Environmental	4 Housing Electricals	5 Housing Locking Strength
	TEST SEQUENCE (b)				
Examination of Product	1, 9	1, 5	1, 5	1, 8	1, 3
Termination Resistance	3, 7	2, 4	2, 4		
Insulation Resistance				2, 6	
Dielectric Withstanding Voltage				3, 7	
Random Vibration	5				
Mechanical Shock	6				
Durability	4				
Mating Force	2				
Unmating Force	8				
Thermal Shock				4	
Humidity-Temperature Cycling(c)			3	5	
Temperature Life		3			
Connector Locking Strength					2

Figure 3



NOTE

- (a) See paragraph 4.2.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition specimens with five (5) durability cycles

4. QUALITY ASSURANCE PROVISIONS

4.1. Test Conditions

Unless otherwise specified, all the tests shall be performed in any combination of the following test conditions shown in Figure 4.

Temperature	15°C – 35°C
Relative Humidity	45% – 75%
Atmospheric Pressure	86.6 – 106.6 kPa

Figure 4

4.2. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production. Test groups 1, 2, 3, and 4 shall each consist of a minimum of 5 specimens with a minimum of 30 data points.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 3.

4.3. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.4. Acceptance

Acceptance is based on verification that the product meets the requirements in Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.5. Quality Conformance Inspection

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

Electrical continuity requirements shall be done in accordance with the end of assembly line test procedure to ensure the chip is assembled correctly. The testing shall be performed with a PCB containing an LED indicator that lights if product has been assembled correctly.