AMPLIMITE* PCB Mounted Connectors

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for D-sub right angle printed circuit board mounted connectors. Applicable product descriptions and part numbers are as shown on product drawing

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

Qualification Testing has been successfully completed. See Qualification Test Report 501-130012.

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

- 114-40010: Application Specification (Right Angle Front Metal Shell Connectors)
- 501-130012: Qualification Test Report (AMPLIMITE* HD-20 Board Mount Connectors)

2.2. Industry Documents

- EIA-364-XX: EIA Test Specifications

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

Voltage	Current	Temperature
250 VAC	3A Max per Contact	-55 C to 85 C

Storage: -55 C to 105 C Relative Humidity: 15% - 70%

3.3. Test Requirements and Procedures Summary

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

© 2018 TE Connectivity family of companies
All Rights Reserved
| Indicates Change

*Trademark. TE Connectivity, TE connectivity (logo), and TE (logo) are trademarks. Other logos, product, and/or company names may be trademarks of their respective owners.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Examination of product	Meets requirements of product drawing.	Visual inspection per product drawing. Per EIA-364-18
	ELECTRICAL	
Low Level Contact Resistance	20 mΩ max. initial 30 mΩ max. final.	Per EIA 364-6B. Subject mated contacts assembled in housing to 50 mV open circuit at 100 mA maximum.
Dielectric Withstanding Voltage	No creeping discharge or flashover shall occur. Leak current: <0.5mA Max.	Per EIA 364-20B Apply 1000V AC for 1 minute at sea level at adjacent contacts and between contacts and metal shell of unmated connector assemblies.
Insulation Resistance	1000 MΩ minimum	Per EIA 364-21. 500V DC for 1 minute, test between adjacent contacts of unmated connector assemblies
Temperature Rise	30°C maximum temperature rise at specified current.	All positions series wired individually forming a single circuit in each connector. Apply rated current and measure temperature after it stabilizes. Subtract initial (unloaded) reading at ambient.
	MECHANICAL	
Vibration, Random	No discontinuities greater than 1 microsecond. See Note.	Per EIA 364-28,condition V, test letter A Random, 50-2000Hz; PSD: 3.13g Duration:15 minutes in each of three mutually perpinducular planes.
Mating Force	0.30Kgf max/contact.	Per EIA 364-37. Measure force necessary to mate connector assemblies at rate of 100mm per minute.
Unmating Force	0.02Kgf min/contact .	Per EIA 364-37. Measure force necessary to unmate connector assemblies at rate of 100mm per minute.
Durability	See note.	Per EIA 364-09 Mate and unmate connector assemblies for 100 cycles at a maximum rate of 300 cycles per hour.

ENVIRONMENTAL		
Solderability	Solderable area shall have minimum of 95% solder coverage.	Per EIA 364-52 Cat 3 Steam age for 8 hrs +/- 5mins; Solder temp: 260 +/-5C; 4 – 5 seconds dwell.
Resistance to Soldering Heat	See note.	Per EIA 364-56 Procedure 3 Test Condition C 235 +/-5 C; 5 +/-1 second dwell.
Thermal Shock	See note.	Per EIA 364-32C Subject mated connectors to 5 cycles Between –55 +/-3℃ and +85 +/-2℃ with each cycle consisting of 30 minute dwells at -55 and 85°C. The transition between temperatures:<5 minutes.
Humidity	See note.	Per EIA 364-31B Method III test condition A Subject mated connectors to 10 hours at 25 - 65℃ with 95% RH.
Temperature Life	See note.	Per EIA 364-17 test condition 3 Method A Subject mated connectors to temperature life at 85 +/-2°C for 96 hours.
Salt Spray	See note.	Per EIA 364-26 Test Condition A; Mated and unmated connectors; Salt concentration: 5%; 35±2° C; 95 – 98% RH; 24 hours

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 2.

3.4. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)									
	A	B	C	D	E	F	G	H	I	J
	TEST SEQUENCE (b)									
Initial examination of product	1,7	1,9	1,5	1,5	1,5	1,5	1,5	1,3	1.3	1.3
Low Level Contact Resistance		2,8	2,4	2,4	2,4	2,4	2,4			
Dielectric Withstanding Voltage	3,6									
Insulation Resistance	2,5									
Temperature Rise								2		
Mating Force		3,6								
Unmating Force		4,7								
Durability		5								
Vibration, Random			3							
Solderability										2
Resistance to Soldering Heat									2	
Thermal Shock				3						
Humidity	4				3					
Temperature Life						3				
Salt Spray							3			

(a) See paragraph 4.1.A.

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

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall consist of 5 connector pairs.

B. Test Sequence

Testing shall be performed in the sequence as defined in paragraph 3.4.

4.2. 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.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements. 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 resubmitted.