

**AMPLIMITE\* 78 POSITION PCB Mounted Connector****1. SCOPE****1.1. Content**

This specification covers performance, tests and quality requirements for the 78 position D-sub right angle printed circuit board mounted connector. Applicable product description and part number is 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 501-130013.

**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)
- 114-40023: Application Specification (Straight Posted Front Metal Shell)
- 501-130013: Qualification Test Report (AMPLIMITE\* HD-22 Board Mount Connector)

**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 105 C

Storage: -25 C to 40 C    Relative Humidity: 15% - 70%

### 3.3. Test Requirements and Procedures Summary

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

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Initial examination of product	Meets requirements of product drawing.	Visual inspection per product drawing. Per EIA-364-18B
Final examination of product	Meets visual requirements.	Visual inspection per product drawing. Per EIA-364-18B

#### ELECTRICAL

Low Level Contact Resistance	30 mΩ max. initial 50 mΩ max. final	Per EIA 364-23C. Subject mated contacts assembled in housing to 20 mV open circuit at 100 mA maximum.
Dielectric Withstanding Voltage	No creeping discharge or flashover shall occur. Leak current: 1mA Max.	Per EIA 364-20E Apply 1000V AC for 1 minute at sea level at adjacent contacts and between contacts and metal shell of unmated connector assemblies.
Insulation Resistance	5000 MΩ minimum initial. 1000 MΩ minimum final.	Per EIA 364-21E. 500V DC for 1 minute, test between adjacent contacts of unmated connector assemblies
Temperature Rise	30°C maximum temperature rise at specified current.	EIA 364-70B Measure temperature rise vs current. All positions series wired individually forming a single circuit in each connector. Rated current when all contacts are loaded

#### MECHANICAL

Vibration, Random	No discontinuities greater than 1 microsecond. No physical damage. See Note.	Per EIA 364-28E Subject mated connectors to 11.95G's rms. 15 minutes in each of three mutually perpendicular planes.
Physical Shock	No discontinuities greater than 1 microsecond. No physical damage. See Note.	Per EIA 364-27C Subject mated connectors to 50 G's half-sine shock pulses of 11 ms duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Mating Force	1)12 Kgf max for mating plug without grounding indents. 2)12 Kgf max for mating plug with grounding indents.	Per EIA 364-13E. Measure force necessary to unmate connector assemblies at rate of 1 inch per minute.

Unmating Force	1)12 Kgf max for mating plug without grounding indents. 2)12 Kgf max for mating plug with grounding indents.	Per EIA 364-13. Measure force necessary to unmate connector assemblies at rate of 1 inch per minute.
Durability	See note.	Per EIA 364-09C Mate and unmate connector assemblies for 100 cycles at maximum rate of 200 cycles per hour.

#### ENVIRONMENTAL

Solderability	Solderable area shall have minimum of 95% solder coverage.	Per EIA 364-53A For wave soldering Temperature: 245°C±5°C Immersion duration : 5 seconds After 1 hour± 5 minutes steam aging
Thermal Shock	See note.	Per EIA 364-32F Subject mated connectors to 100 cycles between -55°C and +105°C with each cycle consisting of 30 minute dwells at -55 and 105°C. The transition between temperatures less than 5 minutes.
Humidity	See note.	Per EIA 364-31C Subject mated connectors to 96 hours at 40°C with 90% to 95% RH.
Temperature Life	See note.	Per EIA 364-17A Subject mated connectors to temperature life at 105°C for 500 hours.
Salt Spray	See note.	Per EIA 364-26B Mated connector, Salt concentration: 5%, 35±2° C, 8 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	A	B	C	D	E	F	G
Initial examination of product	1,8	1,6	1,5	1,3	1,6	1,3	1,5
Low Level Contact Resistance	2,5	2,5	2,4				
Dielectric Withstanding Voltage					4		
Insulation Resistance					5		
Temperature Rise				2			
Vibration, Random	3						
Physical Shock	4						
Mating Force	6						3
Unmating Force	7						4
Durability		3					2
Solderability						2	
Thermal Shock					2		
Humidity					3		
Temperature Life		4					
Salt Spray			3				



#### NOTE

- (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.