

125A hybrid power IV Card Edge Connector

1 SCOPE.

1.1 Content.

This specification defines the performance, tests and quality requirements for the TE Connectivity (TE) 125A hybrid power IV Card Edge Connector

1.2 Qualification.

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

2 APPLICABLE DOCUMENTS.

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

2.1 TE Documents.

102-950	Quality Specification (Qualification of Separable Interface Connectors)
501-128061	Test report
109-1	General Requirements for Test Specifications

2.2 Industry Documents

EIA-364	Electrical Connector/Socket Test Procedures Including Environmental Classifications
IEC-60512	Electronic Equipment-Test and Measurements

2.3 Reference Documents.

109-197	Test Specification (TE Test Specifications vs EIA and IEC Test Methods)
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3 REQUIREMENTS.

3.1 Design and Construction:

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

3.2 Materials

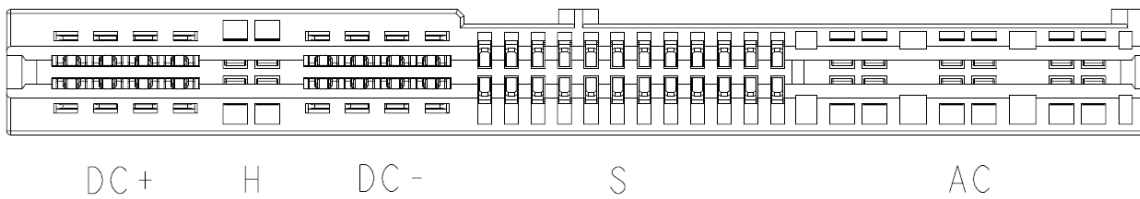
Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3 Ratings:

TABLE 1

	Voltage Rating	Current Rating	Remark
Signal	60V DC	1A	Per contact
AC power	250V AC	25A	12.5A per side
DC power	60V DC	125A	62.5A per side

Temperature: -40°C to 115°C.



3.4 Performance and Test description:

The product is designed to meet electrical, mechanical and environmental performance requirements specified in this paragraph.

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

Test Description	Requirement	Procedure
Visual Examination	Meets requirements of product drawing.	IEC 60512-1-1 Visual and dimensional (C of C) inspection per product drawing.

ELECTRICAL		
Termination Resistance (Low Level)	Signal contact: 25 mΩ max. DC Power contact: 1 mΩ max. AC Power contact: 5 mΩ max.	IEC 60512-2-1. Test 2a Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage.
Insulation resistance	5000 MΩ minimum between all AC power conductors, 5000 MΩ minimum between all DC power conductors, 500 MΩ minimum between all signal conductors;	IEC 60512-3-1. 500 volts DC.
Dielectric Withstanding Voltage	One minute hold with no breakdown or flashover	IEC 60512-4-1. 2000V AC between DC power conductors mutually. 2000V AC between AC power conductors mutually. 1000V AC between signal conductors mutually.

Temperature rise vs current	Temperature rise: 30°C max. over ambient temperature	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C See Table 1
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MECHANICAL		
Vibration, sinusoidal	No discontinuities of 1 microsecond or longer duration. See Note	EIA-364-28, Test condition I, Subject mated specimens to 10-55-10 Hz Traversed in 1 minutes at 1.52mm amplitude 2 hours each of 3 mutually perpendicular planes; See figure 3
Mechanical shock	No discontinuities of 1 microsecond or longer duration. See Note	EIA-364-27, Test Condition A. Subject mated specimens to 50 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks See Figure 3
Mating force	80N max.	IEC 60512-13-1 Maximum rate of 12.5mm per minutes. Test on specimens only, without mounting PCB
Un-mating force	10N min. 60N max.	IEC 60512-13-1 Maximum rate of 12.5mm per minutes. Test on specimens only, without mounting PCB
Durability	200 operations See Note	IEC 60512-5, Test 9a 10 cycles at a max rate of 10mm per second. 5 second rest in the unmated condition.
Contact retention force	20N min. per power pin 5N min. per signal pin	EIA-364-29 Measure force necessary to remove individual contact from the housing at a maximum rate of 12.7mm per minute
Solderability	Solderable area shall have a minimum of 95% solder coverage. See Note.	TE Spec. 109-11-11, Test Method A.

ENVIRONMENTAL		
Thermal shock	See Note	EIA-364-32, Method A, Test condition I, Subject specimens to 5cycles between -40 and 115 °C with 30 minute dwells at

		temperature extremes and 1 minute maximum transition between temperatures
Temperature life	See Note	EIA-364-17, Method A, Test condition 4, Test condition C. Subject mated specimens to 115°C for 250 hours
Humidity/temperature cycling.	See Note	EIA-364-31, Method III. Subject mated specimens to 10 cycles (10 days) between 25 and 65°C at 90 to 95% RH
Mixed flowing gas	See Note	EIA-364-65, Class IIA (4 gas). Subject mated specimens to environmental Class IIA for 20 days—(10 days unmated, LLCR, followed by 10 days mated)

Note: Shall meet visual requirements, shall no physical damage and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Table 2.

3.5 Product Qualification and Requalification Test Sequence.

Test Description	Test group (a)						
	1	2	3	4	5	6	
	Test sequence (b)						
Initial examination of product	1	1	1	1	1	1	
Low level contact resistance	3,7	2,5			2,4	2,5	
Insulation resistance			2,6				
Dielectric Withstanding Voltage			3,7				
Temperature rise vs current	9	3			5		
*Hot Swap							
Vibration, sinusoidal	5						
Mechanical shock	6						
Durability	4						
Mating force	2						
Un-mating force	8						
contact retention force				2			
Thermal shock			4			3	
Humidity/temperature cycling.			5			4	
Temperature life					3(c)		
Mixed flowing gas		4(c)					
Final examination	10	6	8	3	6	6	

Note

- (a) See para. 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition specimens with 10 durability cycles

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.

B. Test sequence

Qualification inspection shall be verified by testing samples as specified in para. 3.5.

4.2 Requalification testing.

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

4.3 Acceptance.

Acceptance is based upon verification that product meets requirements of para. 3.4. 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.

4.4 Quality conformance inspection.

Applicable Tyco 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.

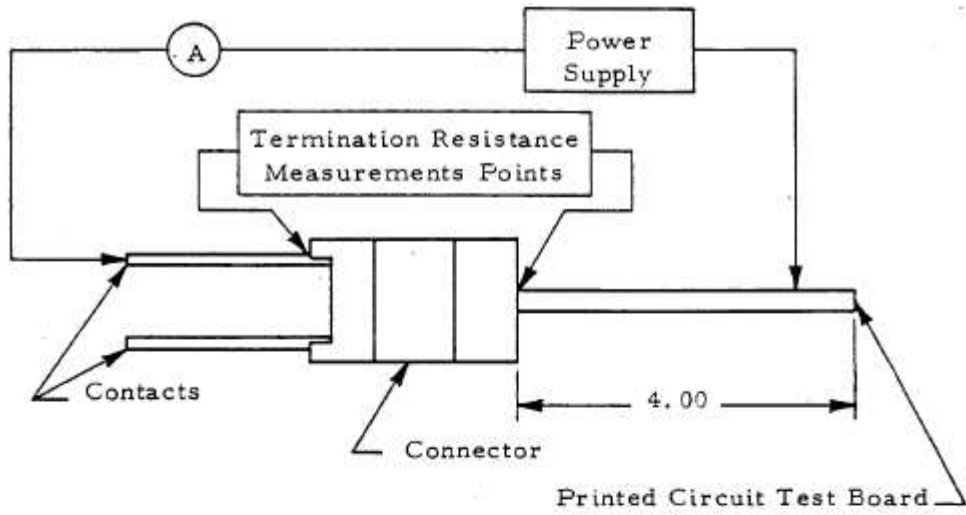


Figure 3
Termination Resistance Measurement Points

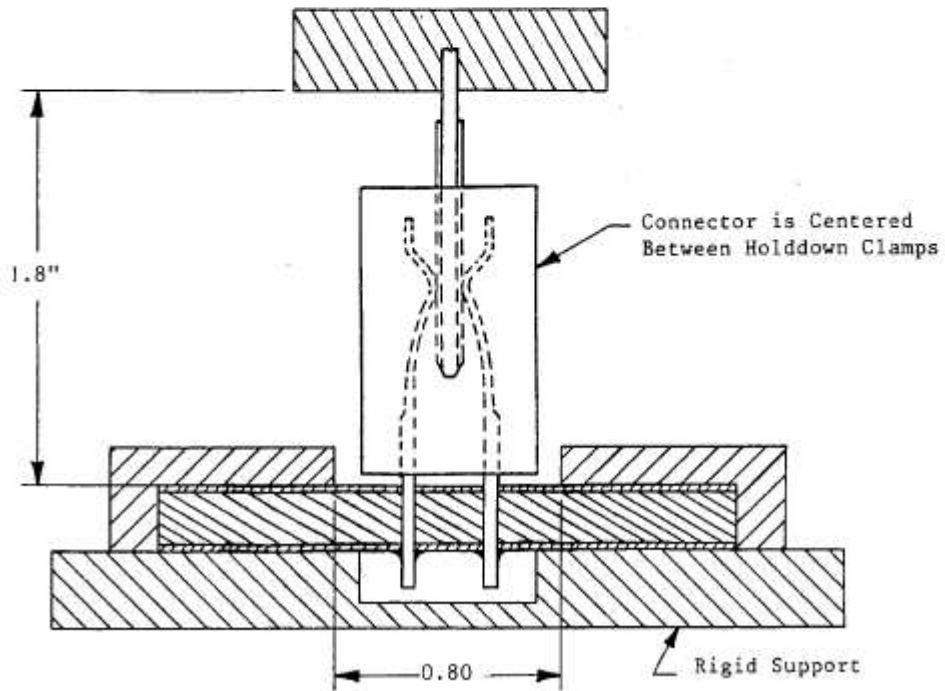


Figure 4
Vibration & Physical Shock