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**Switching PCB RF Economy Connector**

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**1. SCOPE**

## 1.1. Content

This specification covers performance, tests and quality requirements for the Tyco Electronics switching printed circuit board mounted RF economy connector.

## 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 was completed on 11Feb03. The Qualification Test Report number for this testing is 501-546. This documentation is on file at and available from Engineering Practices and Standards (EPS).

**2. APPLICABLE DOCUMENTS**

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. Tyco Electronics Documents

- 109-197: AMP Test Specifications vs EIA and IEC Test Methods
- 501-546: Qualification Test Report

## 2.2. Industry Standard

EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications

**3. REQUIREMENTS**

## 3.1. Design and Construction

Product shall be of the design, construction 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 product drawing.

3.3. Ratings

- Voltage: 500 volts AC
- Current: Signal application only
- Temperature: -65 to 85°C
- Frequency Range:
  - TNC and F Series: 0 to 500 MHz
  - BNC Series: 4 GHz

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Initial examination of product.	Meets requirements of product drawing.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Final examination of product.	Meets visual requirements.	EIA-364-18. Visual inspection.
ELECTRICAL		
Low level contact resistance.	20 milliohms maximum.	EIA-364-23. Subject mated and switched specimens; and unmated and unswitched specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage. See Figure 3.
Withstanding voltage.	1 minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 1500 volts AC at sea level. Test between signal contact and shell of mated, unmounted specimens.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28, Test Condition VII, Condition B. Subject mated specimens to 1.55 G's rms between 20-500 Hz. 15 minutes in each of 3 mutually perpendicular planes.
Durability.	See Note.	EIA-364-9. Manually mate and unmate specimens for 200 cycles at a maximum rate of 600 cycles per hour.

Figure 1 (cont)

Test Description	Requirement	Procedure
Unmating force.	0.14 N [.5 ozf] minimum.	EIA-364-13. Measure force necessary to unmate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
Coupling lug retention force.	Lugs shall not be damaged when subjected to a load of 266.9 N [60 lbf].	Apply load at a rate of 444.82 N [100 lbf] per minute to specified load and hold for 1 minute.

**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.*

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Initial examination of product	1	1
Low level contact resistance	2,5	
Withstanding voltage		2
Vibration	4	
Durability	3	
Unmating force	6	
Coupling lug retention force	7	
Final examination of product	8	3

**NOTE** (a) *See paragraph 4.1.A.*  
(b) *Numbers indicate sequence in which tests are performed.*

Figure 2

**4. QUALITY ASSURANCE PROVISIONS**

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Each test group shall consist of 5 specimens. Specimens for test group 1 shall be mounted on printed circuit board PN 60-474194-1, specimens for test group 2 shall be unmounted.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 2.

#### 4.2. Requalification Testing

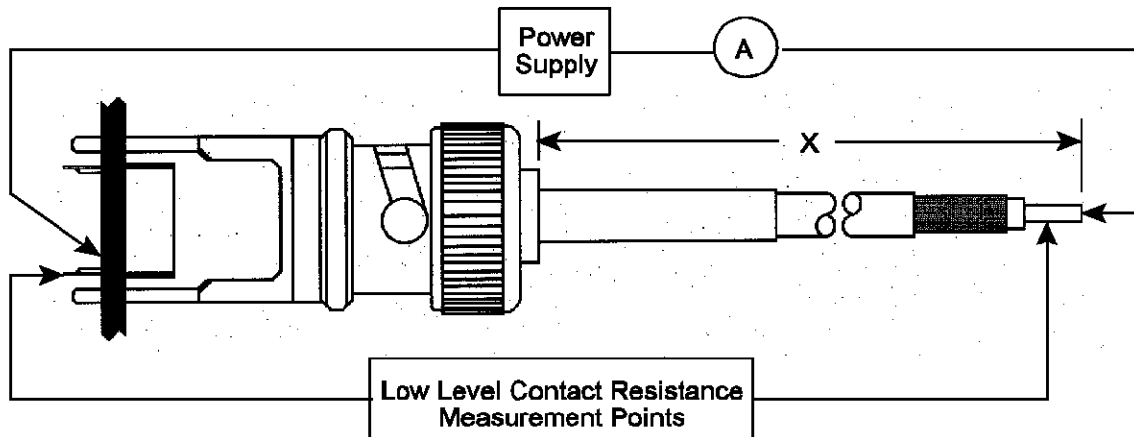
If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

#### 4.3. Acceptance

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

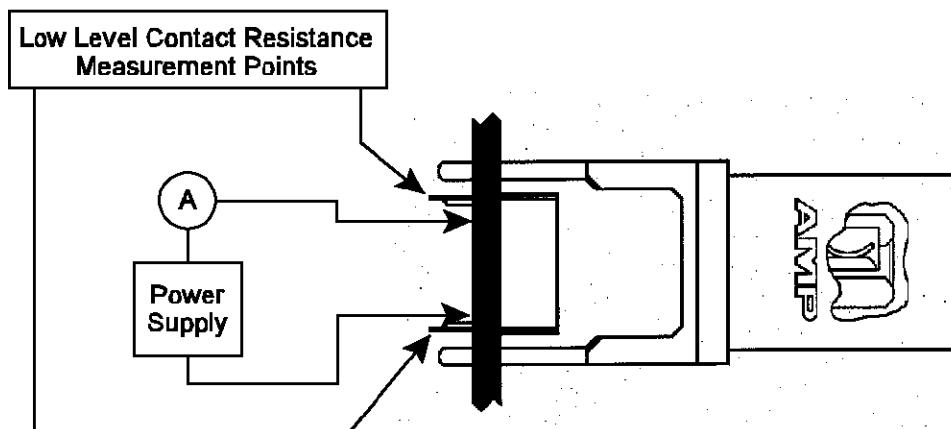
#### 4.4. Quality Conformance Inspection

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.



**NOTE** Resistance equals total resistance less resistance of "X" wire length.

Mated and Switched Specimens



Unmated and Unswitched Specimens

Figure 3  
Low Level Contact Resistance Measurement Points