
Press-Fit BNC PCB Jack Assembly

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for Press-Fit BNC PCB Jack 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. Successful qualification testing on the subject product line was completed on 11Aug08. The Qualification Test Report number for this testing is 501-689. 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 Series: Test Specifications as indicated in Figure 1
- ! 109-197: Test Specification (AMP Test Specifications vs EIA and IEC Test Methods)
- ! 114-12001: Application Specification (Commercial 50 and 75 Ohm BNC Press-Fit Printed Circuit (PC) Board Coaxial RF Receptacle Connectors)
- ! 501-689: Qualification Test Report (Press-Fit BNC PCB Jack Assembly)

2.2. Industry Document

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

2.3. Reference Document

Fujitsu Limited Connector Specification LOTA52002-0305

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 RMS at sea level
- ! Temperature: -55 to 85°C
- ! Characteristic Impedance: 75 ohms
- ! Frequency Range: 0 to 2 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.

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 (LLCR).	Center contact: 12 milliohms maximum initial. ΔR 2 milliohms maximum final. Outer contact: 4 milliohms maximum initial. ΔR 2 milliohms maximum final.	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage. See Figure 3.
Insulation resistance.	5000 megohms minimum.	EIA-364-21. 1000 volts DC, 2 minute hold. Test between signal contact and outer shield of mated specimens.
Withstanding voltage.	One minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 1500 volts AC at sea level. Test between signal contact and outer shield of mated specimens.
MECHANICAL		
Sinusoidal vibration.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28. Subject specimens to 10 to 50 to 10 Hz traversed in 1 minute with 1.52 mm maximum total excursion. Two hours in each of 3 mutually perpendicular planes.

Figure 1 (continued)

Test Description	Requirement	Procedure
Mechanical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-27, 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.
Durability.	See Note.	EIA-364-9. Manually mate and unmate specimens for 500 cycles.
Connector insertion force.	2.2 kN maximum.	AMP Spec 109-41. Measure force necessary to insert specimen into printed circuit board at a maximum rate of 12.7 mm per minute.
Connector retention force.	133 N minimum. No discontinuities. See Note.	AMP Spec 109-30. Apply specified axial load to the specimen in a direction away from the board at a maximum rate of 12.7 mm per minute and hold for 30 seconds. Monitor for discontinuities using a low voltage lamp circuit.
Contact engaging force.	8.895 N maximum.	EIA-364-37. Precondition 1 time using gage 1, then measure force necessary to engage gage 1 to a depth of 3.18 mm excluding lead at a maximum rate of 0.51 mm per minute. See Figure 4.
Contact separating force.	0.278 N minimum.	EIA-364-37. Insert gage 2 to a depth of 3.18 mm (excluding lead) and measure force necessary to separate at a maximum rate of 0.51 mm per minute. See Figure 4.
ENVIRONMENTAL		
Thermal shock.	See Note.	EIA-364-32, Test Condition I. Subject mated specimens to 5 cycles between -55 and 85°C with 30 minute dwells at temperature extremes and 1 minute transition between temperatures.
Humidity/temperature cycling.	See Note.	EIA-364-31, Method III. Subject mated specimens to 10 cycles (10 days) between 25 and 65°C at 80 to 100% RH.

Figure 1 (continued)

Test Description	Requirement	Procedure
Temperature life.	See Note.	EIA-364-17, Method A, Test Condition 1, Test Time Condition A. Subject mated specimens to 55°C for 96 hours.
Mixed flowing gas.	See Note.	EIA-364-65, Class IIA (4 gas). Subject mated specimens to environmental Class IIA for 20 days.

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	3	4
	Test Sequence (b)			
Initial examination of product	1	1	1	1
LLCR	3,9	2,4	2,4	
Insulation resistance				2,6
Withstanding voltage				3,7
Sinusoidal vibration	7			
Mechanical shock	8			
Durability	6			
Connector insertion force	2			
Connector retention force	10			
Contact engaging force	4			
Contact separating force	5			
Thermal shock				4
Humidity/temperature cycling				5
Temperature life		3		
Mixed flowing gas			3	
Final examination of product	11	5	5	8

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 a minimum of 5 specimens.

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.

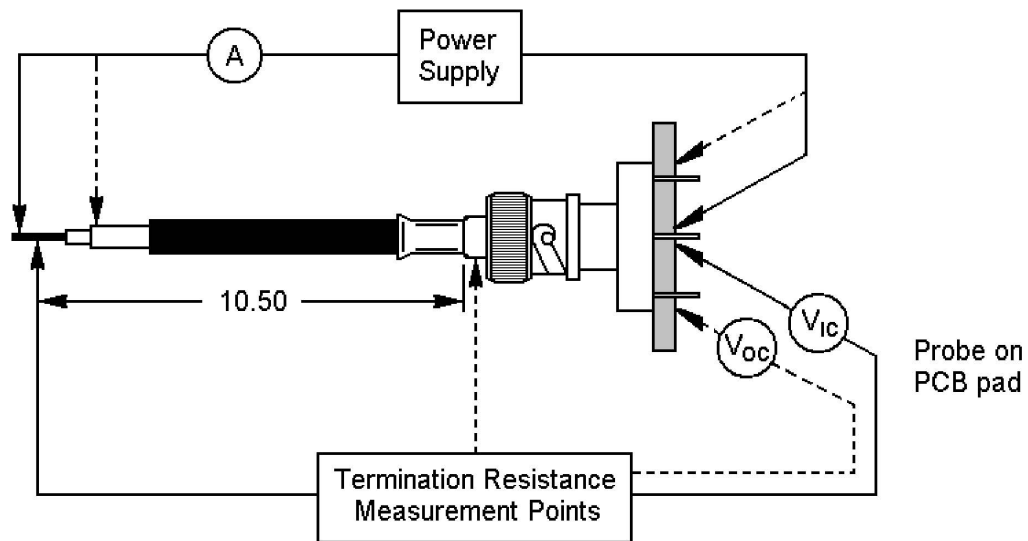
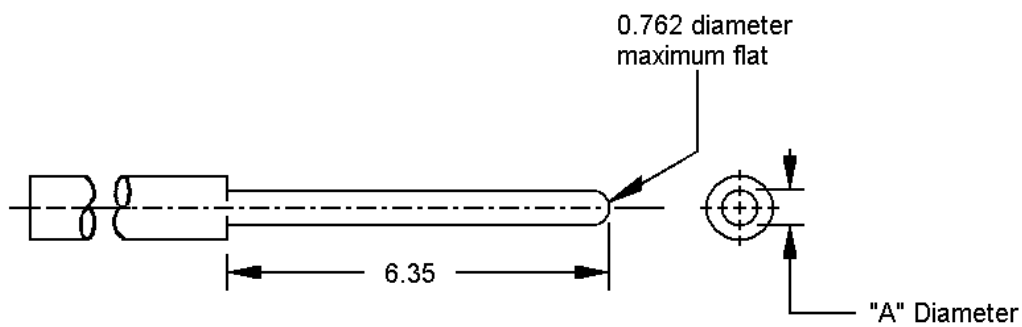


Figure 3
LLCR Measurement Points



Gage Number	"A" Diameter
1	1.3716.+0.00254/-0.00000
2	1.3208 +0.00000/-0.00254

Figure 4
Contact Engaging and Separating Force Gages