

Product Specification

Rev. D

04-May-2011

#### **AMP Novo Shunt Connector**

## 1. SCOPE

#### 1.1 Content

This specification covers the performance, tests and quality requirements for the **AMP Novo Shunt Connectors**. These connectors are mounted on .025 square or Round pins (0,635 mm) spaced at .100 inch pitch (2,54 mm).

#### 1.2 Qualification

When tests are performed on the subject product line, the procedures specified in TE 109 Series Specifications shall be used . All inspections shall be performed using the applicable inspection plan and product drawing .

## 2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the specified herein . 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 TE Specifications

•	109-1	Conorol Boguiromonto for Toot Specifications
•	109-1	General Requirements for Test Specifications .
•	109 Series	Test Specification as indicated in Figure 1 (comply
		with MIL-STD-202, MIL-STD-1344 and EIA RS-364).
•	Corporate Bulletin 76	Cross Reference between TE Test Specifications
		and Military or Commercial Documents .

## 2.2 Military Standard

• MIL-STD-275 Printed Wiring for Electric Equipment .

## 3. **REQUIREMENTS**

#### 3.1 Design and Construction

Connectors shall off the design , construction and physical dimensions specified on the applicable product drawing .

#### 3.2 Materials

- Contact : Phosphor Bronze, tin plated or gold plated version.
- Housing : Thermoplastic. Polyamide 6-6, 15% glass fiber.

# 3.3 Ratings

- Current : 3 A maximum.
- Operating Temperature : -40° C to 85° C.

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# 3.4 Performance and Test Description

Connectors shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1 .

# 3.5 Test Requirements and Procedures Summary

Meets requirements of product drawing. Electrical 15 mΩ maximum.	Visual, dimensional and functional per applicable inspection plan. Measure potential drop of mated contacts assembled in housing, see Fig. 3; IEC 60512-2-2, calculate
Electrical 15 mΩ maximum.	Measure potential drop of mated contacts assembled in housing, see
15 mΩ maximum.	contacts assembled in housing, see
	contacts assembled in housing, see
15 mQ maximum	
15 mQ maximum	Fig. 3: IEC 60512-2-2 calculate
15 mQ maximum	•
15 mO maximum	resistance.
13 m22 maximum.	Subject mated contacts assembled in
	housing to 20 mV open circuit at 100
	ma maximum, see Fig. 3; IEC 60512-
	2-1.
	Test between adjacent contacts of
	mated connector assemblies: IEC
	60512-4-1.
	Tarthat and Parative to the start
	Test between adjacent contacts of
After test, 1000 M $\Omega$ min.	mated connector assembly; EIA 364-
Machanical	21C
	Cubicat motod compostor to 15 Cio fo
	Subject mated connector to 15 G's fo
than T microsecond.	tin-plated or gold-plated versions, 10- 2000 Hz w/ 100 ma current applied;
	EIA 364-28D, method III.
No discontinuities greater	Subject mated connector for 100 G's
than 1 microsecond	sawtooth in 6 milliseconds; 3 shocks
	in each direction applied along the
	three mutually perpendicular planes.
	Total: 18 shocks; EIA 364-27B,
	condition G.
15 N max. (tin-plated version)	In the first insertion of the connector
12 N max. (gold-plated	on two .025 posts (0,635 mm),
version).	measure force necessary to mate
	conn. ass'y from point of initial
	contact, incorporating free floating
	fixtures at a rate of 0,5 in/minute; EIA
	364-13B.
1,5N minimum.	After one insertion of the conn. on two
	.025 posts (0,635 mm), measure force
	necessary to unmate conn. ass'y, at a
	rate of 0,5 in/minute; EIA 364-13B.
	Measure force to engage using gage
	B, as indicated in Fig.4; TE Spec.
version)	109-35; engagement depth 5,8mm
	min.
	Size 3 times using gage B, as
	indicated in Fig.4, insert gage C and
	measure force to separate; TE Spec. 109-35.
_	version).

## cont.

assemblies for 10 cycles/min. maximum. Number of operations 20 (Tin-plated); 50 (Gold-plated); IEC
(Tin-plated); 50 (Gold-plated); IEC
60512-9-1.
Subject mated connectors to 5 cycles
between -40° C and
85° C ; EIA 364-32C.
Subject mated connectors to 10 days humidity temperature cycling at 40° C and 95% RH; EIA 364-31B method II, cond. B.
Subject mated connectors to 5% salt concentration for 48 hours; EIA 364-26B, cond. B.
1

## Figure 1

(a) Shall remain mated and show no evidence of damage , cracking or chipping .

# 3.6 Connector Tests and Sequence

	Test Group (b)			
Test or Examination	1	2	3	
	Те	est Sequence (c)		
Examination of product	1	1	1	
Termination resistance, dry circuit	3,10	2,9	2,4	
Termination resistance, rated current		10	5	
Insulation resistance		3,6		
Dielectric withstanding voltage		4,7		
Connector mating force	2			
Connector unmating force	4			
Contact engaging force	5			
Contact separating force	6			
Durability	9			
Vibration	7			
Physical shock	8			
Humidity, Steady State		5		
Thermal shock			3	
Corrosion, salt spray		8		

Figure 2

- (b) See Paragraph 4.2.A.
- (c) Numbers indicate sequence in which tests are performed.

# 4. QUALITY ASSURANCE PROVISIONS

## 4.1 General Requirements

Connectors presented under this Specification shall be a product which has a passed qualification tests per Paragraph 4.2 and which meets the Quality Assurance requirements of Paragraph 4.3.

## 4.2 Qualification Requirements

## a) Sample Selection

Connector housings and contacts shall be prepared in accordance with applicable instruction sheets . They shall be selected at random from current production . Each test group 1, 2 and 3 shall consist of a minimum of six connectors .

# b) Test Sequence

Qualification Inspection shall be verified by testing samples as specified in Figure 2 .

# c) Acceptance

- (1) All samples tested in accordance with this Specification shall meet the stated tolerance limit.
- (2) Failures attributed to equipment, Test Set-up or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

# 4.3 Quality Conformance Inspection

The applicable TE Inspection Plan will 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 .

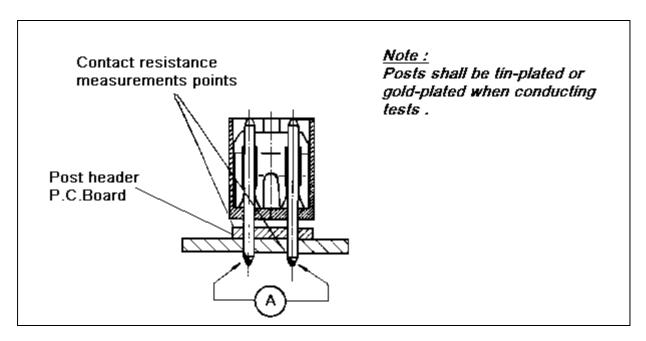
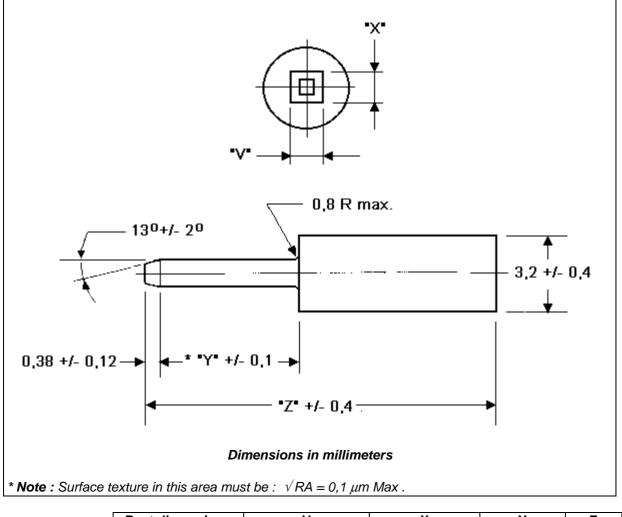


Figure 3



	Post dimensions	V	X	Y	Z
"B" insertion	0,635 x 0,635	0,660 + 0,000 / - 0,002	0,660 + 0,000 / - 0,002	8,25	31,7
"C" separation	0,635 x 0,635	0,610 + 0,002 / - 0,000	0,610 + 0,002 / - 0,000	8,25	31,7

Figure 4

	History Changes					
Rev.	Date	Description	Prepared	Approved		
D	04-May-2011	Changed Items 3.5 and 3.6	H.Canteri	W.Stefani		