

**Connector, Bus Bar, PDS, Pluggable, .062****1. SCOPE**

## 1.1. Content

This specification covers performance, tests and quality requirements for the AMP\* electronic Power Distribution System (PDS) .062 pluggable bus bar connector with guide plate.

## 1.2. Qualification

When tests are performed on subject product line, procedures specified in AMP 109 series specifications 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. 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. AMP Documents

- A. 109-1: General Requirements for Test Specifications
- B. 109 Series: Test Specifications as indicated in Figure 1. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Military or Commercial Documents
- D. 114-2130: Application Specification
- E. 501-195: Test Report

**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. Material

- A. Contact: Copper alloy, silver over nickel plating, lubricated
- B. Clamp: Dielectric G10 fiber board
- C. Housing: Guide plate, stainless steel
- D. Hardware: Customer supplied, stainless steel

## 3.3. Ratings

- A. Voltage: 600 volts direct current
- B. Current: See Figure 2 for applicable current carrying capability
- C. Temperature: -55 to 105°C

- D. Reliability: On the basis of test data, it can be said with 95% confidence that 99% of contacts should exhibit a change in contact resistance less than .074 milliohms after 5 years when exposed to class III mixed flowing gas and failure mechanism is corrosion. Terminated to .5 inch silver plated copper bus bar.

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. All tests are performed at ambient environmental conditions per AMP Specification 109-1 unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and AMP Spec 114-2130.	Visual, dimensional and functional per applicable quality inspection plan.
<b>ELECTRICAL</b>		
Termination resistance, low level.	.062 X 1.50 bus bar size. .075 milliohm maximum resistance.	AMP Spec 109-6. Measure potential drop of mated contacts. Calculate resistance. See Figure 4.
Temperature rise vs current.	30°C maximum temperature rise at specified current.	AMP Spec 109-45-1. Measure temperature rise vs current. See Figure 2.
<b>MECHANICAL</b>		
Vibration, random.	No discontinuities greater than 1 microsecond. See Note.	AMP Spec 109-21-7, Test Level G. Subject mated connectors to 9.91 G's rms. See Figure 5.
Mating force.	6 pounds maximum initial per contact.	AMP Spec 109-42, Condition A. Measure force necessary to mate connector assemblies a distance of .200 from point of initial contact using free floating fixtures at rate of 1 inch per minute. Calculate force per contact.
Unmating force.	.75 pound minimum final per contact.	AMP Spec 109-42, Condition A. Measure force necessary to unmate connector assemblies at rate of 1 inch per minute. Calculate force per contact.

Figure 1 (cont)

Test Description	Requirement	Procedure
Durability.	See Note.	AMP Spec 109-27. Mate and unmate connector assemblies for 100 cycles at maximum rate of 500 cycles per hour.
ENVIRONMENTAL		
Mixed flowing gas.	See Note.	AMP Spec 109-85-3. Subject mated connectors to environmental class III for 20 days.
Temperature life.	See Note.	AMP Spec 109-43. Subject mated connectors to temperature life at 105°C for 500 hours.

**NOTE**

*Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 3.*

Figure 1 (end)

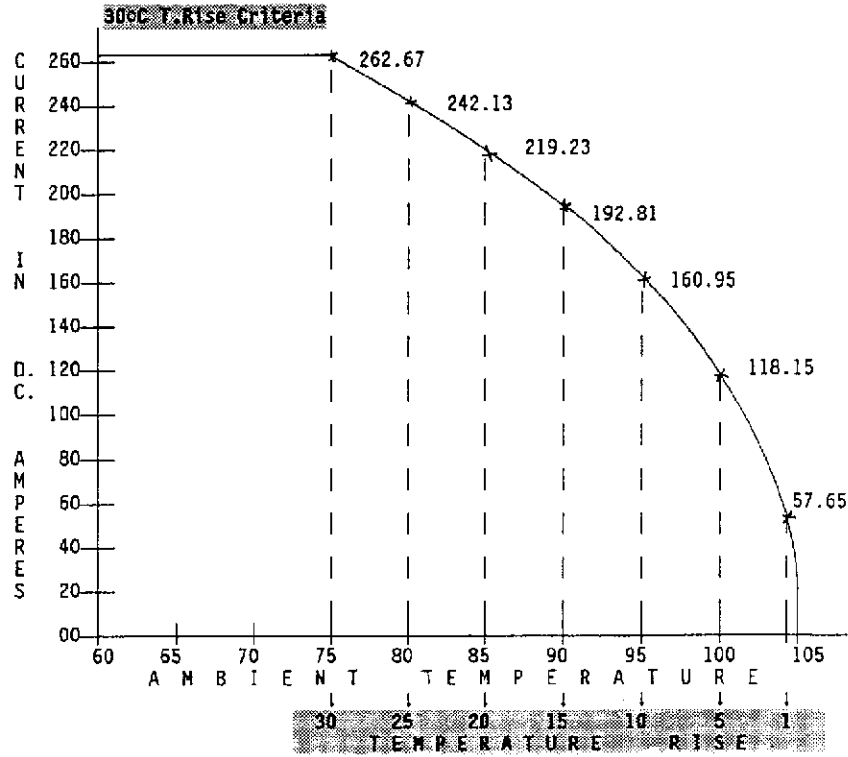


Figure 2A  
Current Carrying Capacity

Test Configuration	Regular Clamps	Minimum Clamps	Without Clamp
Contact on 1.5"x6"Bar mated with 1.5"x12" Bar	1.00	.82	.53
Contact on 1.0"x6"Bar mated with 1.0"x12" Bar	.81	.67	.44
Contact on 0.5"x6"Bar mated with 0.5"x12" Bar	.58	.46	.29

Figure 2B  
Multiplication Factors

Temp Rise	1.5 X 6.0" mated with 1.5 X 12.0"			1.0 X 6.0" mated with 1.0 X 12.0"			0.5 X 6.0" mated with 0.5 X 12.0"		
	Reg. clamp	Min. clamp	No clamp	Reg. clamp	Min. clamp	No clamp	Reg. clamp	Min. clamp	No clamp
30°C	262.7	215.4	139.2	212.8	176.0	115.6	152.3	120.8	76.2
25°C	242.1	198.5	128.3	196.1	162.2	106.5	140.4	111.4	70.2
20°C	219.2	179.8	116.2	177.6	146.9	96.5	127.1	100.8	63.6
15°C	192.8	158.1	102.2	156.2	129.2	84.8	111.8	88.7	55.9
10°C	160.9	132.0	85.3	130.4	107.8	72.8	93.3	74.0	46.7
5°C	118.1	96.9	62.6	95.7	79.2	52.0	68.5	54.3	34.3
1°C	57.6	47.3	30.5	46.7	38.6	25.4	33.4	26.5	16.7

Figure 2C  
Current Rating

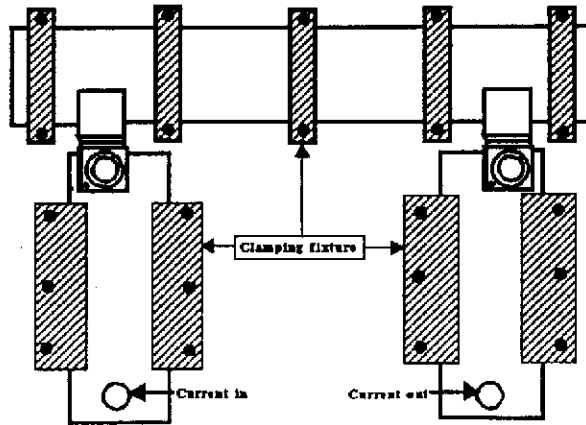


Figure 2D  
Regular Clamps On 1.5 Inch Bar

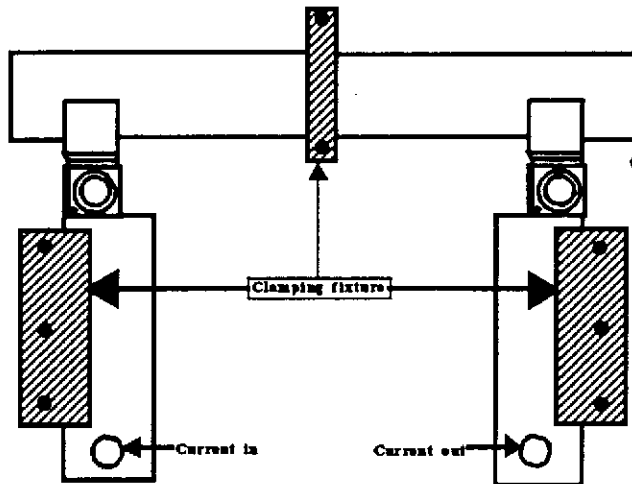


Figure 2E  
Minimum Clamps On 1 Inch Bar

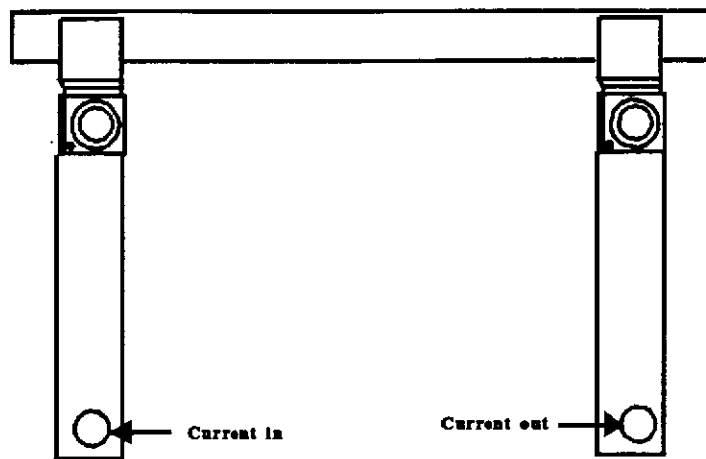


Figure 2F  
Without Clamps, .5 Inch Bar

3.6. Product Qualification And Requalification Test Sequence

Test or Examination	Test Group (a)
	1
	Test Sequence (b)
Examination of product	1,12
Termination resistance, low level	3,10
Temperature rise vs current	4,9
Vibration	8
Mating force	2
Unmating force	11
Durability	5
Mixed flowing gas	6
Temperature life	7

**NOTE**

- (a) See Para 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.

Figure 3

**4. QUALITY ASSURANCE PROVISIONS**

4.1. Qualification Testing

A. Sample Selection

Contacts shall be prepared in accordance with applicable Application Specifications and shall be selected at random from current production. Prepare 4 062F2 connectors along with associated guide plates. Assemble samples in fixture using regular clamps per Figure 2D.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 3.

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 development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that product meets requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

Applicable AMP 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.

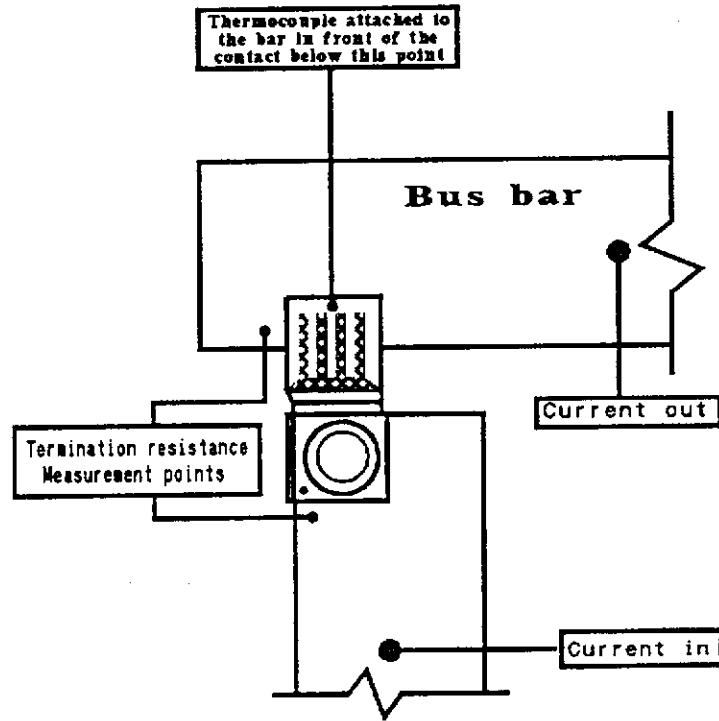


Figure 4  
Termination Resistance Measurement Points

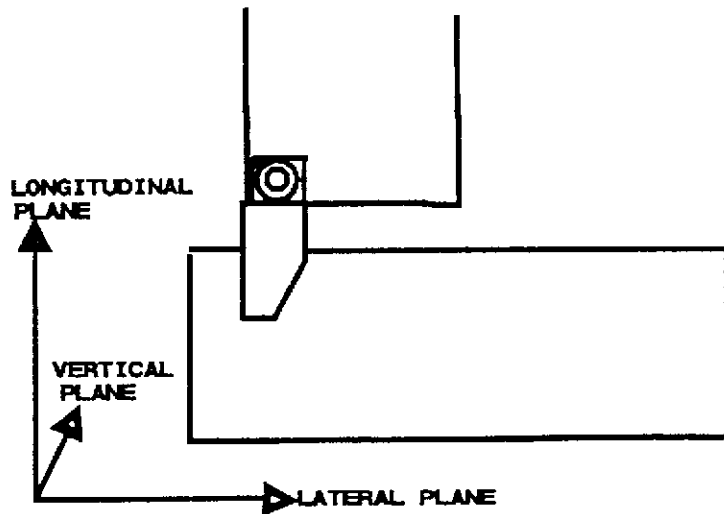


Figure 5  
Vibration Planes