AMP*

QUALIFICATION TEST REPORT

CONNECTOR, BUS BAR, PDS
PLUGGABLE, .062

501-195 Rev. 0

Product Specification:	108-1380 Rev. 0
CTL No.:	CTL1080-110-016
Date:	October 29, 1992
Classification:	Unrestricted
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Corporate Test Laboratory Harrisburg, Pennsylvania

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(R1080TS)

AMP

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CORPORATE TEST LABORATORY

Qualification Test Report
Connector, PDS 062 Bus Plug

1. Introduction

1.1 Purpose

Testing was performed on AMP's PDS 062 BUS Plug Connector to determine its conformance to the requirements of AMP Product Specification 108-1380 Rev.0.

1.2 Scope

This report covers the electrical, mechanical, and environmental performance of the PDS 062 Bus Plug Connector manufactured by the Business Development Division of the Capital Goods Business Sector. The testing was performed between February 26, 1992 and September 11, 1992.

1.3 Conclusion

The PDS 062 BUS Plug Connector meets the electrical, mechanical, and environmental performance requirements of AMP Product Specification 108-1380 Rev. 0.

1.4 Product Description

AMP Pluggable Bus Bar Connector (062 series) is designed to be used as a part of the AMP Power Electronic Distribution System (PEDS). Connectors designated as 062F have mounting flanges at right angle to the bus bar. Those designated as 062F2 have mounting flanges in-line with the bus bar. Power can be supplied to the connector through the mounting plane or through a cable.

The Contacts are made of Copper alloy with silver over nickel plating. The contacts are lubricated. The Housing is stainless steel.

1.5 Test Samples

The test samples were randomly selected from normal current production lots, and the following part numbers were used for test:

Test Group	Quantity	Part Number	Description
1	30	104739-2	.062-F2 Assembly
	30	N/A	6x1.5x.062" Copper Bar
	30	N/A	12x1.5x.062" Copper Bar

1.6 Qualification Test Sequence

	Test Group
Test or Examination	1
Examination of Product	1,12
Termination Resistance Dry Circuit	2,10
T-Rise vs. Current	4,9
Vibration	8
Mating Force	2
Unmating Force	11
Durability	5
Mixed Flowing Gas	6
Temperature Life	7

The numbers indicate sequence in which tests were performed.

2. Summary of Testing

2.1 Examination of Product

All samples submitted for testing were selected from normal current production lots. They were inspected and accepted by the Product Assurance Department of the Capital Goods Business Unit.

2.2 Termination Resistance, Dry Circuit

All termination resistance measurements, taken at 100 milliamperes dc. and 50 millivolts open circuit voltage, were less than 75 microhms.

No. of Samples	Condition	Min.	Max.	Mean
30	Initial	51.39	59.71	57.33
	Final	50.88	60.52	54.80

All values in microhms

2.3 Temperature Rise vs. Current

All assemblies had a temperature rise of less than 30°C above ambient when a specified current of 262 amperes dc was applied.

2.4 Vibration

Following vibration, no cracks, breaks, or loose parts on the connector assemblies were visible.

2.5 Mating Force

All mating force measurements were less than 6 pounds per contact

2.6 Unmating Force

All unmating force measurements were greater than 0.75 pounds per contact (final).

2.7 Durability

No physical damage occurred to the assemblies as a result of mating and unmating the assemblies to bus bars 100 times.

2.8 Mixed Flowing Gas

No evidence of physical damage to the assemblies or the bus bars was visible as a result of exposure to the pollutants of mixed flowing gas.

2.9 Temperature Life

No evidence of physical damage to the assembly or the bus bars was visible as a result of exposure to an elevated temperature.

3. Test Methods

3.1 Examination of Product

Product drawings and inspection plans were used to examine the samples. They were examined visually and functionally.

3.2 Termination Resistance, Dry Circuit

Termination resistance measurements at low level current were made, using a four terminal measuring technique (Figure 1). The test current was maintained at 100 milliamperes dc, with an open circuit voltage of 50 millivolts dc.

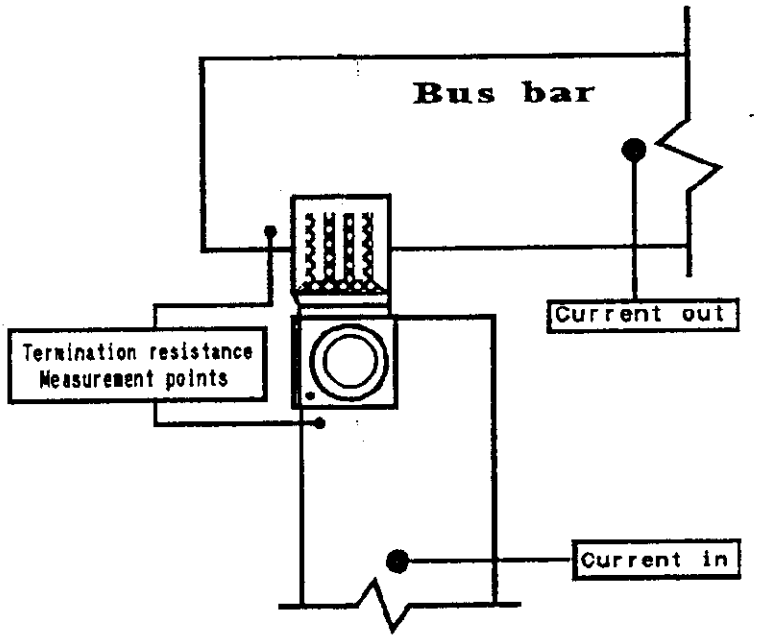

Figure 1
Typical Termination Resistance Measurement Points

3.3 Temperature Rise vs Specified Current

Assembly temperature was measured, while energized at the specified current of 262 amperes dc. Thermocouples were attached to the connectors to measure their temperatures. This temperature was then subtracted from the ambient temperature to find the temperature rise. When three readings at five minute intervals were the same, the readings were recorded.

3.4 Vibration, Random

Mated assemblies were subjected to a random vibration test, specified by a random vibration spectrum, with excitation frequency bounds of 10 and 500 hertz. The spectrum is flat at .2 G^2/Hz from 10 to 500 Hz. The root-mean square amplitude of the excitation was 9.9 GRMS.

3.5 Mating Force

The force required to mate assemblies to a bus bar was measured, using a free floating fixture with the rate of travel at 1.0 inch/minute. The force per contact was calculated.

3.6 Unmating Force

The force required to unmate assemblies from a bus bar was measured, using a free floating fixture with the rate of travel at 1.0 inch/minute. The force per contact was calculated.

3.7 Durability

Assemblies were mated and unmated, to a bus bar 100 times at a rate not exceeding 500 per hour.

3.8 Mixed Flowing Gas, Class III

Mated assemblies were exposed for 20 days to an mixed flowing gas Class III exposure. Class III exposure is defined as a temperature of 30°C and a relative humidity of 75%, with the pollutants of Cl_2 at 20 ppb, NO_2 at 200 ppb, and H_2S at 100 ppb.

3.9 Temperature Life

Mated assemblies were exposed to a temperature of 105°C for 500 hours.

4. Validation

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