

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for AMP\* .088 to .093 diameter printed circuit board pin receptacle.

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 constitute a part of this specification to the extent specified herein. In the event of conflict between requirements of this specification and product drawing, product drawing shall take precedence. In the event of conflict between requirements of this specification and 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. 114-2127: Application Specification
- E. 501-196: Test Report

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable product drawing.

3.2. Materials

Contact: Phosphor bronze, tin plated

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Product Code: 0780

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<p><b>CONTROLLED DOCUMENT</b> This specification is a controlled document per AMP Specification 102-21. It is subject to change and Corporate Standards should be contacted for latest revision.</p>				<p>DR B. Beckley 12/10/92</p>	<p><b>AMP</b> AMP Incorporated Harrisburg, PA 17105-3608</p>		
				<p>CHK D. Schwenk 12/18/92</p>			
				<p>APP R. Weavill 01/08/93</p>	<p>NO 108-1411</p>	<p>REV A</p>	<p>LOC B</p>
A	Revise per EC AF-8318	<i>A/B</i>	<i>2/10/93</i>	PAGE	<p>TITLE PIN RECEPTACLE, PRINTED CIRCUIT BOARD, .088 TO .093 DIAMETER</p>		
LTR	REVISION RECORD	APP	DATE	1 OF 6			

### 3.3. Ratings

- A. Voltage: 14 volts
- B. Current: 3 amperes
- C. Temperature: -40 to 100°C

### 3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1. All tests 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 114-2127.	Visual, dimensional and functional per applicable quality inspection plan.
<b>ELECTRICAL</b>		
Termination resistance, specified current.	10 milliohms maximum at 3 amperes test current.	Measure potential drop of mated contacts. Calculate resistance. See Figure 3. AMP Spec 109-25.
Termination resistance, dry circuit.	10 milliohms maximum.	Subject mated contacts to 50 mv open circuit at 100 ma. See Figure 3. AMP Spec 109-6-1.
Temperature rise vs current.	10°C maximum temperature rise at 3 amperes of current.	Measure temperature rise vs current. AMP Spec 109-45-1. See Figure 3.
<b>MECHANICAL</b>		
Vibration, random.	No discontinuities greater than 1 microsecond. See Note (a).	Subject mated contacts to 2.22 G's rms. 3 hours in each of 3 mutually perpendicular planes. See Figure 4. AMP Spec 109-21-7, Test Level B.

Figure 1 (cont)

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Test Description	Requirement	Procedure
Physical shock.	No discontinuities greater than 1 microsecond. See Note (a).	Subject mated connectors to 50 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 4. AMP Spec 109-26-1.
Mating force.	9 pounds maximum.	Measure force necessary to mate contacts with 4 pin clusters using free floating fixtures at rate of 1 inch per minute. AMP Spec 109-42. Condition A.
Unmating force.	2.5 pounds minimum.	Measure force necessary to unmate contacts from 4 pin clusters at rate of 1 inch per minute. AMP Spec 109-42. Condition A.
Durability.	See Note (a).	Mate and unmate contacts with 4 pin clusters for 10 cycles at maximum rate of 300 cycles per hour. AMP Spec 109-27.
Forced motion.	See Note (a).	Subject mated contacts to 1000 cycles of .010 movement along axis of mating pins at maximum rate of 300 cycles per hour.
<b>ENVIRONMENTAL</b>		
Thermal shock.	See Note (a).	Subject mated connectors to 1000 cycles between -40 and 100°C. AMP Spec 109-22.
Humidity-temperature cycling.	See Note (a).	Subject mated connectors to 21 humidity-temperature cycles between 25 and 65°C at 95% RH. AMP Spec 109-23-3. Condition C.

Figure 1 (cont)

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Test Description	Requirement	Procedure
Temperature life.	See Note (a).	Subject mated connectors to temperature life at 105°C for 580 hours duration. AMP Spec 109-43.

(a) Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests specified in Test Sequence in Figure 2.

Figure 1 (end)

### 3.6. Product Qualification And Requalification Test Sequence

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Examination of product	1,9	1,5	1,5	1,5	1,6	1,5
Termination resistance, specified current					4	
Termination resistance, dry circuit	3,7	2,4	2,4	2,4	2,5	2,4
Temperature rise vs current					3	
Vibration	5					
Physical shock	6					
Mating force	2					
Unmating force	8					
Durability	4					
Forced motion						3
Thermal shock			3(c)			
Humidity-temperature cycling				3(c)		
Temperature life		3(c)				

- (a) See Para 4.1.A.  
(b) Numbers indicate sequence in which tests are performed.  
(c) Precondition samples with 5 cycles durability.

Figure 2

## 4. QUALITY ASSURANCE PROVISIONS

### 4.1. Qualification Testing

#### A. Sample selection.

Contacts shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall consist of 20 contacts mounted and wave soldered into AMP test board PN 69-32049.

#### B. Test sequence.

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

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#### 4.2. Requalification Testing

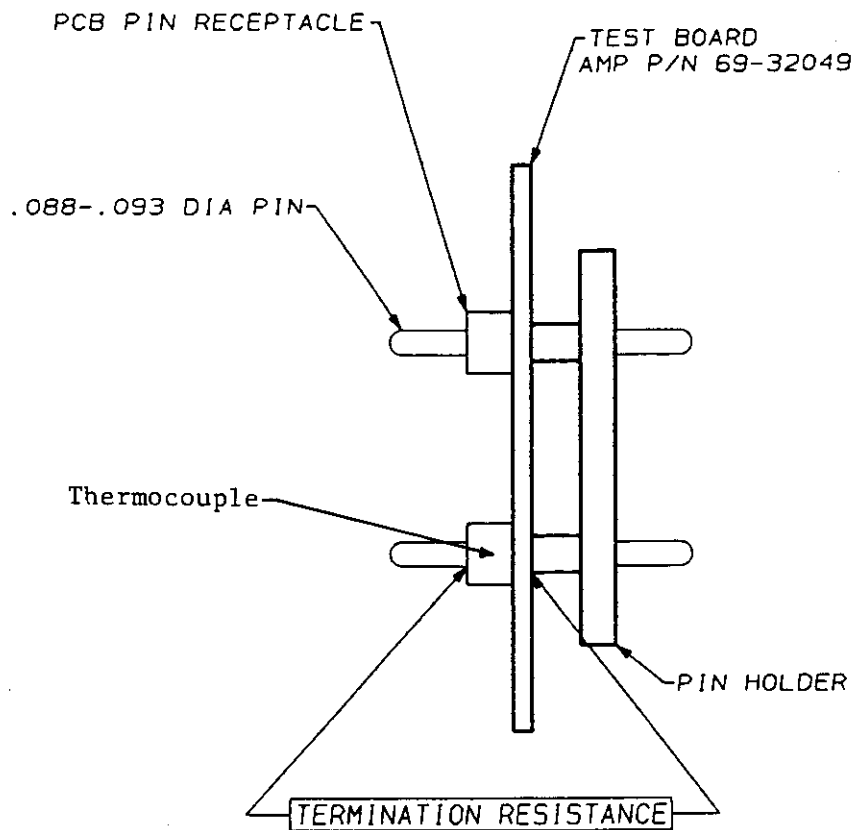
If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate requalification testing consisting of all or part of original testing sequence as determined by development/product, quality and reliability engineering.

#### 4.3. Acceptance

Acceptance is based upon 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 prior to resubmittal.

#### 4.4. Quality Conformance Inspection

Applicable AMP quality inspection plan will specify acceptable quality sampling level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.



- 1 TERMINATION RESISTANCE = SOLDER JOINT+TERMINAL BULK+INTERFACE.
- 2 BOARDS SHOULD BE KEPT VERTICAL DURING ENVIRONMENTAL TESTING.

Figure 3  
Resistance & Temperature Measurement Points

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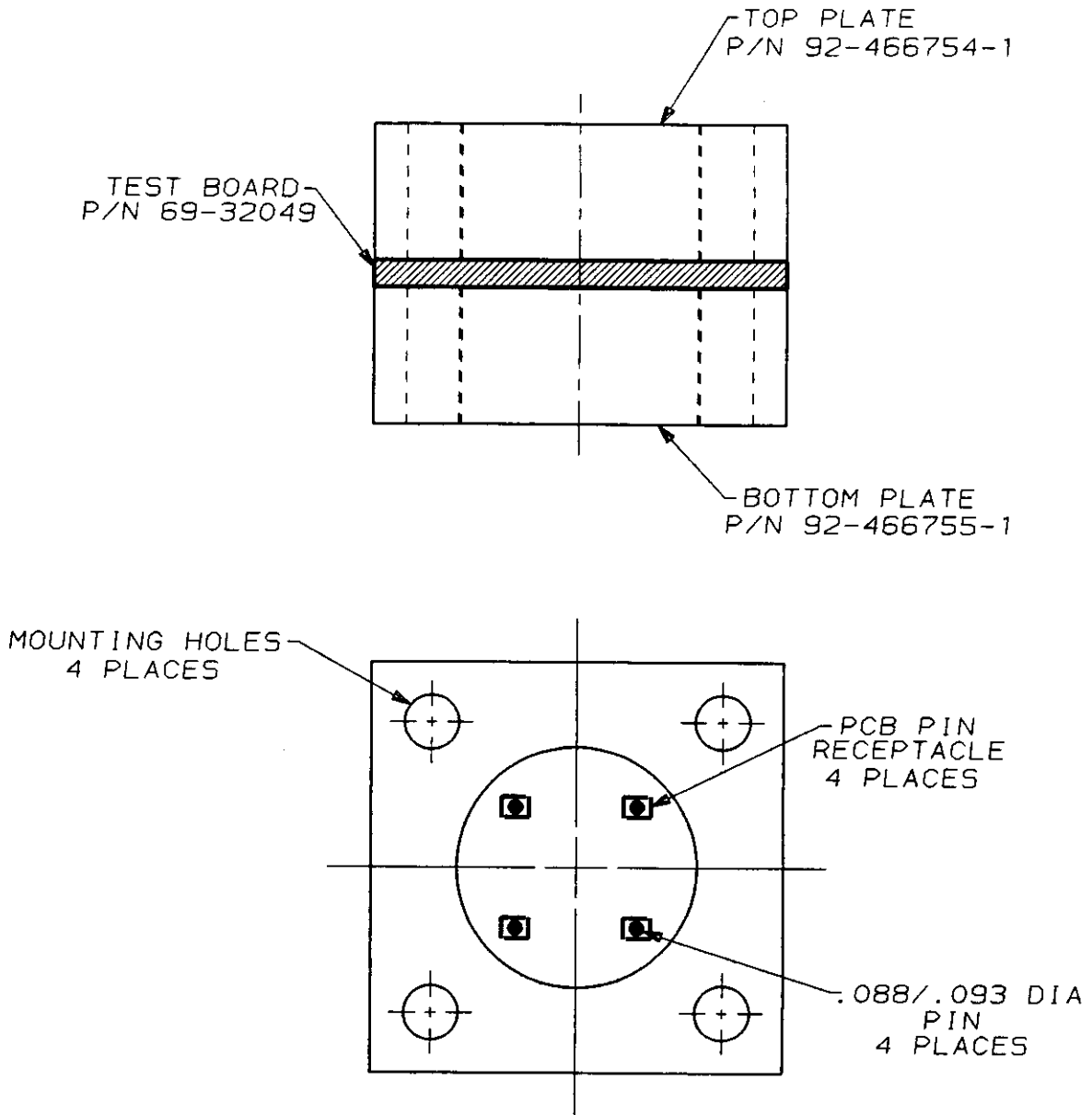


Figure 4  
Vibration & Physical Shock

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