

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for AMP* high pressure tin, chip carrier socket. The thru-hole version with soldertails requires a .100 inch grid hole pattern.

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 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. 501-3, Revision C: Test Report

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

- A. Contacts: Phosphor bronze, tin/lead plated, electrodeposited
- B. Housing: Polyphenylene sulfide or polyester PCT, UL 94V-0

*Trademark

Product Code: 0294

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CONTROLLED DOCUMENT 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.				DR F. Rinehardt 5/21/85	AMP AMP Incorporated Harrisburg, PA 17105-3608		
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LTR	REVISION RECORD	APP	DATE	1 OF 5			

3.3. Ratings

Operating temperature: -55° to 125°C

3.4. Performance and Test Description

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

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meet requirements of product drawing.	Visual, dimensional and functional per applicable inspection plan.
ELECTRICAL		
Termination resistance, dry circuit.	12 milliohms maximum initial. ΔR 3 milliohms maximum.	Measure resistance of socket with dummy chip carrier at 50 mv open circuit and 100 ma maximum. See Figure 3. AMP Spec 109-6-1.
Dielectric withstanding voltage.	600 vac dielectric withstanding voltage. 1 minute hold.	Test between adjacent circuits of unmated socket assembly. AMP Spec 109-29-1.
Insulation resistance.	10000 megohms minimum initial.	Test between adjacent circuits of unmated socket assembly. AMP Spec 109-28-4.
Capacitance.	1 picofarad maximum.	Test between adjacent circuits at 20 random locations of unmated socket assembly. AMP Spec 109-47, Condition E.
MECHANICAL		
Vibration.	No discontinuities greater than 1 microsecond. See Note (a).	Subject mated socket to 15 G's, 10-2000 Hz. AMP Spec 109-21-3.

Figure 1 (cont)

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Test Description	Requirement	Procedure
Physical shock.	No discontinuities greater than 1 microsecond. Termination resistance, dry circuit ΔR 3 milliohms maximum. See Note (a).	Subject mated socket to 100 G's sawtooth shock pulses of 6 milliseconds duration. 1 shock in each direction applied along 3 mutually perpendicular planes, 6 total shocks. AMP Spec 109-26-9.
Mating force.	15 ounces per contact maximum.	Measure force to engage using dummy chip carrier. AMP Spec 109-42, Condition A.
Unmating force.	0.3 ounces per contact minimum.	Measure force to separate dummy chip carrier. AMP Spec 109-42, Condition A.
Durability.	See Note (a).	Using dummy chip, mate and unmate for 25 cycles at rate of .5 inch per minute. AMP Spec 109-27.
Solderability.	Contact leads shall have minimum of 95% solder coverage.	Subject to solderability. AMP Spec 109-11-3.
ENVIRONMENTAL		
Thermal shock.	See Note (a).	Subject socket and mated chip carrier to 25 cycles between -55 and 125°C. AMP Spec 109-22.
Humidity-temperature cycling.	See Note (a).	Subject socket and mated chip carrier to 10 humidity-temperature cycles between 25 and 65°C at 95% RH. AMP Spec 109-23-3.
Temperature life.	See Note (a).	Subject socket and mated chip carrier to temperature life at 125°C for 1000 hours. AMP Spec 109-43.

Figure 1 (cont)

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Test Description	Requirement	Procedure
Solvent resistance.	No degradation or deformation of socket.	Subject sockets to solvents. AMP Spec 109-33, Conditions I and J plus Freon SMT and TMS, an alkaline based cleaner and a terpene based cleaner.

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

Figure 1 (end)

3.6. Socket Qualification and Requalification Tests and Sequences

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Examination of product	1,9	1,5	1,5	1,8	1,4	1,3
Termination resistance, dry circuit	3,7	2,4	2,4			
Dielectric withstanding voltage				3,7		
Insulation resistance				2,6		
Capacitance					2	
Vibration	5					
Physical shock	6					
Mating force	2					
Unmating force	8					
Durability	4					
Solderability					3	
Thermal shock				4		
Humidity-temperature cycling			3	5		
Temperature life		3				
Solvent resistance						2

(a) See Para 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Sockets shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test groups 1, 2, 3, 4 and 5 shall consist of 4 sockets per test group. Test group 6 shall consist of 10 sockets.

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B. Test Sequence

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

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 failures occur, 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.

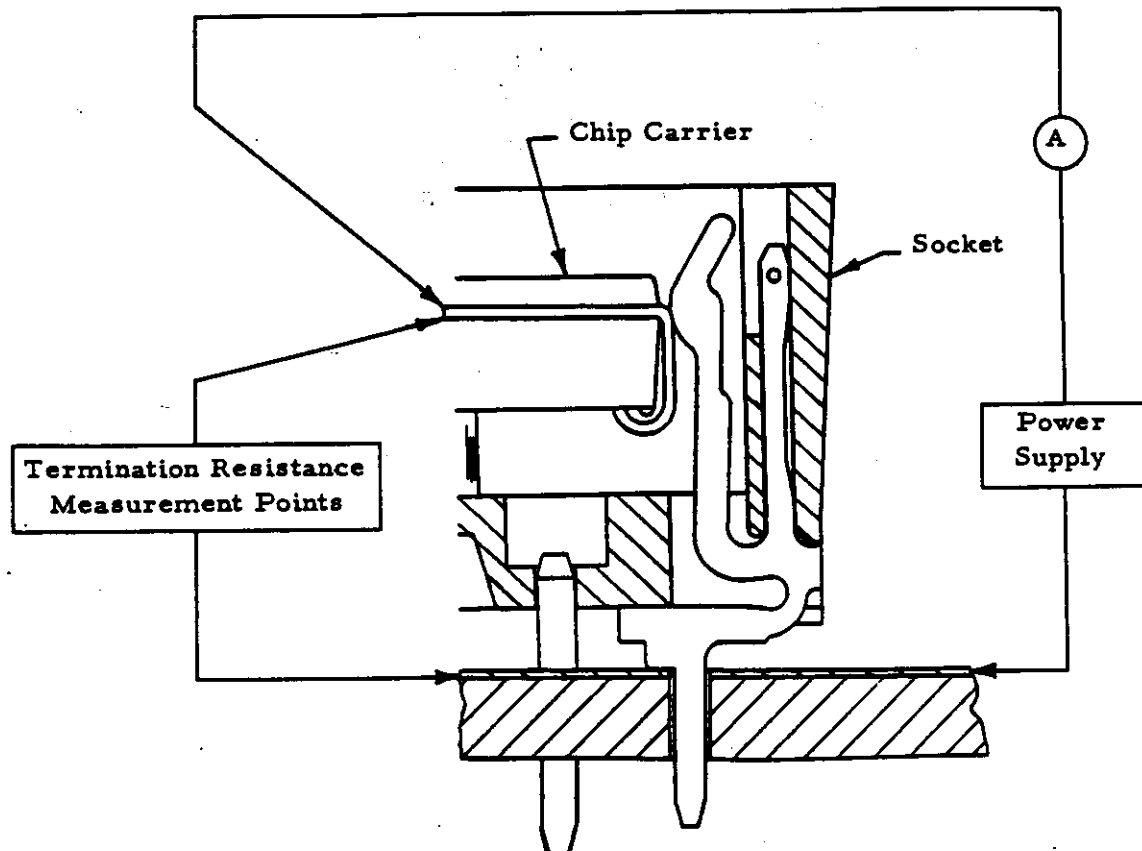


Figure 3
Termination Resistance Measurement Points

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