HOLTITE Sockets

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity (TE) AUGAT* HOLTITE* Sockets. These sockets are designed to be press-fit into a plated through hole of a printed circuit board. This unique design allows the plated through hole to become a component socket. The sockets are designed to accept a .016 to .021 inch round lead (5P), .011 X .018 inch rectangular lead (5P), .024 to .030 inch round lead (6P), .028 to .035 inch round lead (8P) and .036 to .045 inch round lead (12P).

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has been completed. The Qualification Test Report number for this testing is 501-500. This documentation is on file at and available from Engineering Practices and Standards (EPS).

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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 Documents

- 109-197: TE Test Specifications vs EIA and IEC Test Methods
- 501-500: Qualification Test Report

2.2. Commercial Standard

EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications

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. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

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3.3. Ratings

- Current: 5 amperes using an .062 inch thick glass epoxy, Type FR4, with 2 ounce copper, plated, with electroplated (.001 inch minimum) copper and electroplated tin/lead (.0003 inch minimum) plated through holes.
- Temperature:
  - Gold contacts: -55 to 125℃
  - Tin/lead contacts: -55 to 105℃

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical, and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets visual requirements.	EIA-364-18. Visual inspection.
	ELECTRICAL	
Low level contact resistance.	10 milliohms maximum initial for recessed contacts 11 milliohms maximum initial for flush contacts. 15 milliohms maximum final.	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage. See Figure 3.
Insulation resistance.	1,000 megohms minimum.	EIA-364-21. Test between adjacent contacts on .100 inch centerlines.
Temperature rise vs current.	30°C maximum temperature rise at specified current.	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C.
	MECHANICAL	
Vibration, sinusoidal.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28, Test Condition IV. Subject mated specimens to 10-2000-10 Hz traversed in 20 minutes with 1.5 mm [.06 in] maximum total excursion or 20 G's, whichever is less. 4 hours in each of 3 mutually perpendicular planes.
Durability.	See Note.	EIA-364-9. Insert and withdraw a .020 inch diameter polished steel test pin 50 times at a maximum rate of 500 cycles per hour.

Figure 1 (continued)

Test Description	Requirement	Procedure
Insertion force.	330 grams maximum.	EIA-364-13. Measure the force necessary to insert a .020 inch diameter polished steel test pin at a maximum rate of 12.7 mm [.5 in] per minute.
Withdrawal force.	16 grams minimum.	EIA-364-13. Measure force necessary to withdraw a .016 inch diameter polished steel test pin at a maximum rate of 12.7 mm [.5 in] per minute.
Contact retention.	2,267 grams minimum.	EIA-364-13. Measure force necessary to push a contact out of an .039 inch diameter plated through hole.
ENVIRONMENTAL		
Thermal shock.	See Note.	EIA-364-32, Test Condition IV. Subject specimens to 5 cycles between -65 and 150℃.
Humidity-temperature cycling.	See Note.	EIA-364-31, Method III. Subject specimens to 10 cycles (10 days) between 25 and 65℃ at 80 to 100% RH.
Salt spray.	See Note.	EIA-364-26, Test Condition B. Subject specimens to a 5% salt fog mist for 48 hours.
Temperature cycling.	See Note.	EIA-364-32, Test Condition VII. Except: Subject specimens to 100 cycles between -40 and 120℃, dwell time and transition time shall be 30 minutes (120 minute cycle).

NOTE *Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown 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
	Test Sequence (b)				
Examination of product	3			4	
Low level contact resistance	4,6		4	1,3	
Insulation resistance			1,3		
Temperature rise vs current					1
Vibration	5				
Durability		2			
Insertion force		1			
Withdrawal force		3			
Contact retention	7				
Thermal shock	1				
Humidity-temperature cycling			2		
Salt spray	2				
Temperature cycling				2	

NOTE *(a) See paragraph 4.1.A.*
(b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of a minimum of 32 specimens.

B. Test Sequence

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

4.2. Requalification Testing

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

4.3. Acceptance

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

4.4. Quality Conformance Inspection

The applicable quality inspection plan shall 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.

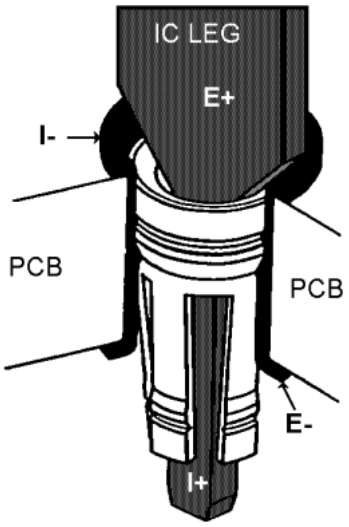


Figure 3
Low level Contact Resistance Measurement Points