SMT and Through-Hole Poke-In Connector

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity (TE) Surface Mount (SMT) and Through-Hole Poke-In Connectors used with 18 to 22 AWG solid copper wire, 18 to 20 AWG prebond stranded wire, and 18 AWG stranded wire in indoor/outdoor lighting.

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 was completed on 02May08. Additional testing was completed on 17Oct11. The Qualification Test Report number for this testing is 501-679.This documentation is on file at and available from Engineering Practices and Standards (EPS).

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- 114-13194: Application Specification (Surface Mount Technology (SMT) and Through-Hole Poke-In Connectors)
- 501-679: Qualification Test Report (SMT and Through-Hole Poke-In Connector)

2.2. Industry Documents

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- JEDC JESD22-B102: Solderability

2.3. Reference Document

109-197: Test Specification (TE Test Specifications vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

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

3.3. Ratings

- Voltage: 250 volts AC RMS, 250 volts DC
- Current: 4 amperes maximum
- Temperature: -40 to 105°C

3.2. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Test Description	Requirement	Procedure
Initial examination of product.	Meets requirements of product drawing.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Final examination of product	Meets visual requirements	EIA-364-18. Visual inspection
ELECTRICAL		
Low Level Contact Resistance (LLCR)	18 milliohms maximum initial. ΔR 5 milliohms maximum	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage.
Withstanding voltage	One minute hold with no breakdown or flashover	EIA-364-20, Condition I. 1500 volts AC at sea level. Test between adjacent contacts.
MECHANICAL		
Solderability, surface mount	Solderable area shall have a minimum of 95% solder coverage	JEDC JESD22-B102. Subject contacts to solderability
Resistance to reflow soldering heat	Housing shall be free of deformation and fusion. See Note.	TE Spec 109-201, Condition B
Random vibration	No discontinuities of 1 microsecond or longer duration. See Note	EIA-364-28, Test Condition VII, Condition Letter D. Subject mated specimens to 3.10 G's rms between 20 to 500 Hz. Fifteen minutes in each of 3 mutually perpendicular planes. See Figure 3.
Mechanical shock	No discontinuities of 1 microsecond or longer duration. See Note	EIA-364-27, Condition H. Subject mated specimens to 30 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 3.
Wire insertion force.	15.6 N [3.5 lbf] maximum for solid wire. 29.9 N [6.5 lbf] maximum for prebond and stranded wire.	EIA-364-13. Measure force necessary to insert wires at a maximum rate of 12.7 mm [.5 in] per minute.
Wire retention force.	53.4 N [12 lbf] minimum for solid wire. 22.2 N [5 lbf] minimum for prebond and stranded wire.	EIA-364-13. Measure force necessary to extract wire at a maximum rate of 12.7 mm [.5 in] per minute.
ENVIRONMENTAL		
Thermal shock.	See Note.	EIA-364-32, Test Condition VIII. Subject specimens to 25 cycles between -40 and 105°C.
Humidity/temperature cycling.	See Note.	EIA-364-31, Method III. Subject specimens to 10 cycles (10 days) between 25 and 65°C at 80 to 100% RH.
Temperature life.	See Note.	EIA-364-17, Method A, Test Condition 4. Subject specimens to 105°C for 648 hours.

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)

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Initial examination of product	1	1	1	1	1	1
LLCR	3,6	2,4	2,4			
Withstanding voltage				2,5		
Surface mount solderability					2	
Resistance to reflow soldering heat						2
Random vibration	4					
Mechanical shock	5					
Wire insertion force	2					
Wire retention force	7					
Thermal shock				3		
Humidity/temperature cycling			3	4		
Temperature life		3				
Final examination of product	8	5	5	6	3	3

NOTE

a) Test groups 1, 2 and 3 shall each consist of 15, two-position or 30, one-position board mounted specimens terminated to 18 AWG solid copper wire, 18 AWG prebond wire, 18 AWG 16 strand wire, 20 AWG solid copper wire, 20 AWG prebond wire, and 22 AWG solid copper wire. Test groups 4, 5 and 6 shall each consist of 15 unmounted and unterminated specimens.

b) Numbers indicate sequence in which tests are performed.

Figure 2

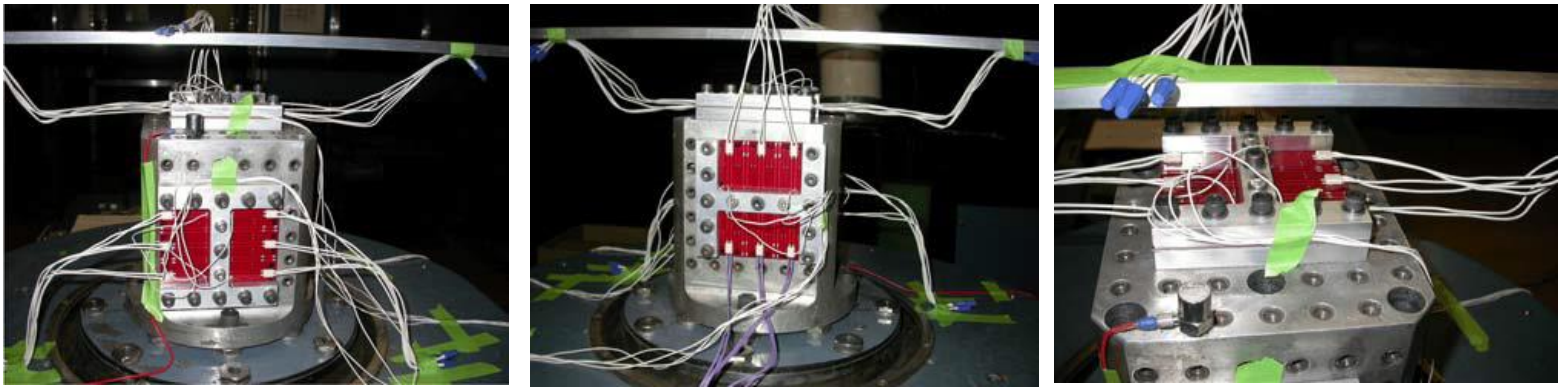

Figure 3
Vibration & Mechanical Shock Mounting Fixture