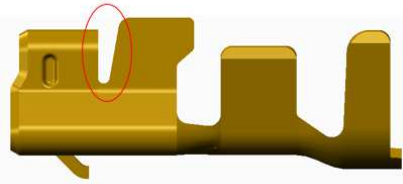

Qualification Test Report Of EP2.5 LIF Contact

1. INTRODUCTION

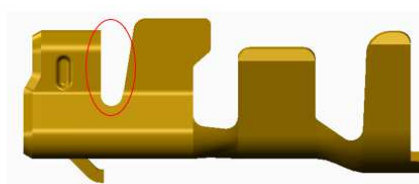
1.1 Purpose

Testing was performed on the EP 2.5 low insertion force contact for qualification.

Standard version



LIF version



1.2 Scope

This specification covers the electrical, mechanical, environmental performance of the EP2.5 LIF contact Product Specification 108-2418. Testing was performed at TE Connectivity Shanghai Electrical Test Laboratory between 08Apr, 2015 and 29May, 2015. The associated test number is TP-15-00684.

1.3 Conclusion

Refer to Section 3- Summary of Testing for the result.

1.4 Test Specimens

The test specimens were identified with the following part numbers and types:

Description	PN	Part Revision
EP2.5 LIF contact	2232905-1	1
EP2.5 header assembly	2132230-4	E
EP2.5 plug housing	1969442-4	B

1.5 Test Sequence

Test Item	Test Group ^{a)}	
	1	2
	Test Sequence ^{b)}	
Initial Examination of Product	1	1
Low Level Contact Resistance	2,7	2,6
Temperature Rise vs Current		3
Mating Force	3	
Durability	4	
Vibration	5	
Mechanical shock	6	
Un-mating Force	8	
Humidity and temperature cycling		4
Temperature life		5
Final Examination of Product	9	7

Note: a). Test group defined per requirement.

b). Numbers indicate sequence in which tests are performed

1.6 Environmental Conditions

Unless otherwise specified, all the test shall be performed in any combination of the following test conditions.

Temperature: 15°C to 35°C

Relative Humidity: 25% to 75%

2. TEST PROCEDUES

2.1 Examination of Product

Visual Inspection: appearance, and function of specimens pursuant to the applicable inspection plan.

Requirements: Meets requirements of product drawing and no physical damage.

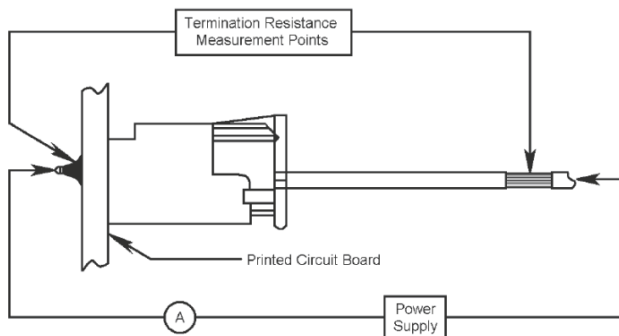
Test Method: EIA-364-18B.

2.2 Low Level Contact Resistance

Subject mated contacts assembled in housing to 20 millivolt maximum open circuit at 100 milliamperes maximum.

Requirements: 10 milliohms maximum initial, 20 milliohms maximum final.

Test Method: EIA 364-23C



2.3 Temperature rise vs current

Wired all terminal poles and connected to DC power supply, each contact was energized at several current levels with the temperatures being recorded. Thermocouples were attached to the crimp area of each of the contacts to measure their temperatures. The ambient temperature was then subtracted from the contact temperatures to find the contact temperature rise. When three readings at five minute intervals were less than 1°C different the readings were considered stable and recorded. The current was then moved to the next current level until the contacts had reach a 30°C Temperature rise.

Requirements: Measure the current when ΔT 30°C.

Test Method: EIA-364-70C

2.4 Mating force & un-mating force

Measure force necessary to mate & un-mate connector assembly with locking latches disengaged. Mount connector in fixtures and perform test at 12.7 mm per minute.

Requirements: Mating force: 3.5N maximum per contact,

Un-mating force: 0.9 minimum per contact.

Test Method: EIA 364-13B

2.5 Durability

Mate & un-mate connectors for 15 cycles at maximum rate of 500 cycles per hour.

2.6 Vibration

Test mated connector to 10 to 55 to 10 Hz traversed in 1 minute with 1.5mm maximum total excursion.

Requirements: No physical damage, no electrical discontinuity greater than 1 μ s.

Test Method: EIA-364-28 F

2.7 Mechanical shock

Test mated connector to 30G' s half-sine shock pulses of 11milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.

Requirements: No physical damage, no electrical discontinuity greater than 1 μ s.

Test Method: EIA-364-27 F

2.8 Humidity and temperature cycling

Test specimens to 10 cycles (10 days) between 25 and 65°C at 80 to 100% RH.

Requirements: No visual change

Test Method: EIA-364-31

2.9 Temperature life

Test mated specimens to 105°C for 500 hours.

Requirements: No visual change

Test Method: EIA-364-17 C

3. SUMMARY OF TESTING

Group	Test Item	N	Condition	Test Result				Requirement	Conclusion	
				Max	Min	Ave	Unit			
1	Examination of Product	4	initial	No physical damage occurred.				/	No abnormalities	Meet Spec
	LLCR	4	initial	8.63	6.93	7.74	mΩ	10mΩ Max.	Meet Spec	
	Mating force	4	initial	2.92	2.11	2.51	N	3.5N Max./per contact.	Meet Spec	
	Durability	4	initial	No physical damage occurred.				/	No abnormalities	Meet Spec
	Vibration	4	initial	No physical damage and no electrical discontinuity occurred.					No physical damage and no electrical discontinuity occurred.	Meet Spec
	Mechanical shock	4	initial	No physical damage and no electrical discontinuity occurred.					No physical damage and no electrical discontinuity occurred.	Meet Spec
	LLCR	4	final	8.79	4.44	6.38	mΩ	20mΩ Max.		
	Un-mating force	4	initial	1.34	0.9	1.1	N	0.9N Min/per contact.	Meet Spec	
	Examination of Product	4	final	No physical damage occurred.				/	No abnormalities	Meet Spec

Group	Test Item	N	Condition	Test Result				Requirement	Conclusion	
				Max	Min	Ave	Unit			
2	Examination of Product	4	initial	No physical damage occurred.				/	No abnormalities	Meet Spec
	LLCR	4	initial	5.98	3.56	4.74	mΩ	10mΩ Max.	Meet Spec	
	Temperature rise vs current	4	initial	3.5A Δ T 30°C				/	Measure the current when Δ T at and 30°C	Meet Spec (24AWG wire)
	Humidity and temperature cycling	4	final	No physical damage occurred.				/	No abnormalities	Meet Spec
	Temperature life	4	initial	No physical damage occurred.				/	No abnormalities	Meet Spec
	LLCR	4	final	15.49	6.3	10.14	mΩ	20mΩ Max.	Meet Spec	
	Examination of Product	4	final	No physical damage occurred.				/	No abnormalities	Meet Spec