Ultraminiature Bare Poke-in Contact

1. Purpose:

This is qualification test. The purpose of this test is to evaluate the performance of ultraminiature bare poke-in contact. Testing was performed on below products to determine it compliance with the requirements of product specification.

2. Scope:

This is test report for ultraminiature bare poke-in Connector. Testing was performed at TE Connectivity Shanghai Electrical Components Test Laboratory .

3. Conclusion:

The product met the electrical, mechanical, and environmental performance requirements of TE product specification

4. Test samples:

Samples were taken randomly from current production. The following part numbers were used for test:

Description	Product Part No.
Bare Releasable Poke-in Contact	2834171-3

5. Test Method

5.1 Examination of Product

Visual, dimensional and functional per applicable inspection plan.

Requirements: Meets requirements of product drawing

Test Method: In accordance with EIA-364-18

5.2 Contact Resistance

Subject the specimen to maximum allowed rating current and measure the contact resistance.

Requirements: 20mΩ Max.

Test Method: EIA-364-06

5.3 Temperature Rise

Measured at maximum rated current with series all contacts.

Current: 7A with 20AWG /5A with 24AWG

Requirement: Temperature rise should be 30℃ Max.

Test method: EIA-364-70

5.4 Vibration, Random

Subject mated specimens to 3.10G's rms between 20~500HZ. Fifteen minutes in each of 3 mutually perpendicular planes.

Requirements: Discontinuity max 1 μs

Test method: EIA-364-28, Test Condition VII, Condition D

5.5 Mechanical shock

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.

Requirements: Discontinuity max 1 μs

Test method: EIA-364-27, Condition H

5.6 Insertion force

Wire size: 20AWG solid

Requirements: 20N max

Test method: EIA-364-13.

Measure force necessary to insert wires at a maximum rate of 12.7 mm [.5 in.] per minute.

5.7 Extraction Force

Wire size: 2834171-3: 18AWG solid

20AWG solid & stranded (26 strands)

22AWG solid & stranded (7 strands)

24AWG solid

Requirements: Extraction force: 22.24N min

Test method: EIA-364-13.

Measure force necessary to extract wire at a maximum rate of 12.7 mm [.5 in.] per minute.

5.8 Thermal Shock

Subject specimens to 25 cycles between -40 and 105°C with 30 minute dwells at temperature extremes and 1 minute transition between temperatures.

Requirements: Contact resistance 20mΩ Max.

Test method: EIA-364-32, Test Condition VII

5.9 Humidity (cycling Temperature)

Subject specimens to 10 cycles (10 days) between 25 ºC and 65 ºC at 80 to 100% RH.

Requirements: Contact resistance 25mΩ Max.

Test method: EIA-364-31, Method III

5.10 Temperature life

Subject mated specimens to 105 ºC for 648 hours.

Requirements: LLCR 20mΩ Max.

Test method: EIA-364-17, Method A

6. Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature:5℃ to 35℃ Relative Humidity: 45 % to 80%

7. Test Sequence

Test group	A	B	C	D	E	F
Examination of product	1,6	1,7	1,5	1,3		1,3
Contact resistance	2, 5	2, 4, 6	2,4			
Temperature Rise						2
Random vibration	3					
Mechanical shock	4					
Durability						
Thermal shock			3			
Insertion force.					1	
Extraction Force				2		
Humidity -temperature cycling		3				
Temperature life		5				
Sample size	**5**	**5**	**5**	**5PCS/Per Wire**	**5PCS/Per Wire**	**5PCS/Per Wire**

8. Test Result

Group	Test Item	N	Condition	Test Result			Requirement	Judgment
				Max	Min	Ave		
A	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Initial	0.73	0.63	0.68	<20mΩ	Pass
	Random Vibration	5	Final	No discontinuities of 1 microsecond or longer duration occurred			No abnormalities	Pass
	Mechanical Shock	5	Final	No discontinuities of 1 microsecond or longer duration occurred			No abnormalities	Pass
	Contact resistance	5	Final	1.98	1.57	1.80	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
B	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Initial	1.00	0.90	0.95	<20mΩ	Pass
	Humidity (cycling Temperature)	5	Final	No physical damage occurred			No physical damage occurred	Pass
	Contact resistance	5	Second	1.53	0.95	1.31	<20mΩ	Pass

	Temperature life	5	Final	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Final	1.51	1.31	1.41	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
C	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Initial	1.18	0.92	1.03	<20mΩ	Pass
	Thermal shock	5	Final	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Final	0.95	0.73	0.86	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
D	Examination of Product	25	Initial	No physical damage occurred			No abnormalities	Pass
	Extraction force: 18AWG solid	5	Final	100	65.50	89.27	>22.24N	Pass
	Extraction force: 20AWG solid	5	Final	108.20	106.46	107.43	>22.24N	Pass
	Extraction force: 20AWG stranded	5	Final	101.01	83.24	92.51	>22.24N	Pass
	Extraction force: 22AWG solid	5	Final	71.56	70.41	71.10	>22.24N	Pass
	Extraction force: 22AWG stranded	5	Final	35.84	31.78	34.35	>22.24N	Pass
	Extraction force: 24AWG solid	5	Final	43.79	43.01	43.43	>22.24N	Pass
	Examination of Product	25	Final	No physical damage occurred			No abnormalities	Pass
E	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Insertion Force	5	Finial	12.95	10.03	11.38	20N max	Pass
	Examination of Product	5	Finial	No physical damage occurred			No abnormalities	Pass
F	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Temperature Rise (7A)	5	Final	25.02	14.44	16.85	<30℃	Pass
	Temperature Rise (5A)	5	Final	25.75	18.20	22.64	<30℃	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass

---

END