Releasable WtoB Poke-in Connnector

1. Purpose:

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

2. Scope:

This is test report for releasable wire to board poke-in connector. Testing was performed at TE Connectivity Shanghai Electrical Components Test Laboratory between Jun.04th, 2015 and Jul.07th, 2015.

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.
Releasable wire to board poke-in Connector	2834006-* /2834385-*

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: 6A for 2834006-2 or 2834385-2

9A for 1-2834006-2

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: 18AWG solid

Requirements: 15N 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: 18AWG solid & stranded

20AWG solid & stranded

22AWG solid & stranded

Requirements: Extraction force: 5.0lbs 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

5.11 Withstanding voltage

Unmated connector with 1800 V AC between adjacent contacts for 1 min for 2834006-2

Unmated connector with 2200 V AC between adjacent contacts for 1 min for 1-2834006-2

Requirements: No breakdown or flashover

Test method: EIA-364-20, Condition I

5.12 Insulation resistance

Unmated connector with 500 V DC between adjacent contacts for 1 min.

Requirements: 1000 MΩ Min

Test method: EIA-364-21

5.13 Durability

Subject connector assembly to 5 cycles

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

Temperature:5°C to 35°C Relative Humidity: 45% to 80%

7. Test Sequence

Test group	A	B	C	D	E	F	G
Examination of product	1,6	1,7	1,6	1,3	1,4	1,3	1,3
Contact resistance	2, 5	2, 4, 6	5				
Insulation resistance			3				
Withstanding Voltage			2				
Temperature Rise							2
Random vibration	3						
Mechanical shock	4						
Durability					2		
Thermal shock			4				
Insertion force.						2	
Extraction Force				2	3		
Humidity -temperature cycling		3					
Temperature life		5					
Sample size	5	5	10	30	30	5	6

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	5.49	4.56	4.96	<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	4.52	3.21	3.62	<20mΩ	Pass
	Exam ination 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	12.97	6.94	9.96	<20mΩ	Pass
	Humidity (cycling Temperature)	5	Final	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Second	6.62	2.64	4.36	<20mΩ	Pass
	Temperature life	5	Final	No visual change found			No abnormalities	Pass
	Contact resistance	5	Final	6.56	5.02	5.90	<20mΩ	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
C	Examination of Product	10	Initial	No physical damage occurred			No abnormalities	Pass
	Withstanding Voltage(2834006-2)	5	Final	No Breakdown			No abnormalities	Pass
	Withstanding Voltage(1-2834006-2	5	Final	No Breakdown			No abnormalities	Pass
	Insulation resistance (unit:$10^{10}\Omega$)	10	Final	4.77	2.14	3.80	1000MΩ Min	Pass
	Thermal shock	10	Final	No visual change found			No abnormalities	Pass
	Contact resistance	10	Final	4.48	3.31	3.94	<20mΩ	Pass
	Examination of Product	10	Final	No physical damage occurred			No abnormalities	Pass
D	Examination of Product	30	Initial	No physical damage occurred			No abnormalities	Pass
	Extraction Force: 18AWG solid	5	Final	62.06	46.31	52.55	>22.24N	Pass
	Extraction Force: 18AWG stranded	5	Final	102.22	83.66	88.83	>22.24N	Pass
	Extraction Force: 20AWG solid	5	Final	62.13	46.53	54.40	>22.24N	Pass
	Extraction Force: 20AWG stranded	5	Final	92.47	62.84	75.04	>22.24N	Pass
	Extraction Force: 22AWG solid	5	Final	39.84	23.44	30.62	>22.24N	Pass
	Extraction Force: 22AWG stranded	5	Final	47.03	34.88	40.68	>22.24N	Pass
	Examination of Product	30	Final	No physical damage occurred			No abnormalities	Pass
E	Examination of Product	30	Initial	No physical damage occurred			No abnormalities	Pass
	Durability	30	Final	No physical damage occurred			No abnormalities	Pass
	Extraction Force: 18AWG solid	5	Final	53.53	46.03	48.65	>22.24N	Pass
	Extraction Force: 18AWG stranded	5	Final	97.59	61.25	80.34	>22.24N	Pass
	Extraction Force: 20AWG solid	5	Final	43.94	36	40.33	>22.24N	Pass
	Extraction Force: 20AWG stranded	5	Final	80.53	46.34	72.47	>22.24N	Pass
	Extraction Force: 22AWG solid	5	Final	28.75	26.19	27.25	>22.24N	Pass

	Extraction Force: 22AWG stranded	5	Final	56.25	42.34	49.25	>22.24N	Pass
	Examination of Product	30	Final	No physical damage occurred			No abnormalities	Pass
F	Examination of Product	5	Initial	No physical damage occurred			No abnormalities	Pass
	Insertion force	5	Final	13.22	10.70	11.85	15N Max	Pass
	Examination of Product	5	Final	No physical damage occurred			No abnormalities	Pass
G	Examination of Product	6	Initial	No physical damage occurred			No abnormalities	Pass
	Temperature Rise(2834006-2)	3	Final	28.40	24.90	26.46	△30℃ Max	Pass
	Temperature Rise(1-2834006-2)	3	Final	19.35	18.40	18.95	△30℃ Max	Pass
	Examination of Product	6	Final	No physical damage occurred			No abnormalities	Pass

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END