ITB Releasable WtoB Poke-in Connector

1. Purpose:

This is qualification test. The purpose of this test is to evaluate the performance of ITB 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 ITB releasable wire to board 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.
Releasable wire to board poke-in Connector	*-2834313-* (4.0Pitch ITB without cap) *-2834334-* (4.0Pitch ITB with cap) *-2834331-* (6.5Pitch ITB)

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 18AWG

5A for 20~22AWG

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: 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: 18AWG solid & stranded

20AWG solid & stranded

22AWG solid & stranded

Requirements: Extraction force: 5.0lbs (22.22N)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 -55 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 20mΩ Max.

Test method: EIA-364-31, Method III

5.10 Temperature life

Subject mated specimens to 125 ºC for 250 hours.

Requirements: LLCR 20mΩ Max.

Test method: EIA-364-17, Method A

5.11 Withstanding voltage

Unmated connector with 1640 V AC between adjacent contacts for 1 min for 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	5	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	4.02	3.81	3.93	<20mΩ	Pass
	Random Vibration	5	Final	No discontinuities of 1 microsecond or longer duration			No abnormalities	Pass

				occurred				
	Mechanical Shock	5	Final	No discontinuities of 1 microsecond or longer duration occurred			No abnormalities	Pass
	Contact resistance	5	Final	5.06	3.83	4.38	<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	4.05	3.85	3.93	<20mΩ	Pass
	Humidity (cycling Temperature)	5	Final	No physical damage occurred			No abnormalities	Pass
	Contact resistance	5	Second	4.58	3.95	4.17	<20mΩ	Pass
	Temperature life	5	Final	No visual change found			No abnormalities	Pass
	Contact resistance	5	Final	5.99	4.10	5.15	<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:$10^{11}\Omega$)	10	Final	2.43	1.22	1.82	1000MΩ Min	Pass
	Thermal shock	10	Final	No visual change found			No abnormalities	Pass
	Contact resistance	10	Final	4.06	3.85	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	81.45	61	69.51	>22.22N	Pass
	Extraction Force: 18AWG stranded	5	Final	>100	90.01	>98.41	>22.22N	Pass
	Extraction Force: 20AWG solid	5	Final	>100	65.32	>86.42	>22.22N	Pass
	Extraction Force: 20AWG stranded	5	Final	>100	93.17	>98.9	>22.22N	Pass
	Extraction Force: 22AWG solid	5	Final	84.47	65.45	74.72	>22.22N	Pass
	Extraction Force: 22AWG stranded	5	Final	75.25	44.52	57.56	>22.22N	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	59.53	45.35	50.64	>22.22N	Pass
	Extraction Force: 18AWG stranded	5	Final	80.55	55.25	70.63	>22.22N	Pass
	Extraction Force: 20AWG solid	5	Final	56.24	40	45.68	>22.22N	Pass
	Extraction Force: 20AWG stranded	5	Final	79.58	47.84	65.60	>22.22N	Pass

	Extraction Force: 22AWG solid	5	Final	55.37	36.29	40.37	>22.22N	Pass
	Extraction Force: 22AWG stranded	5	Final	58.30	45.34	52.52	>22.22N	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(18AWG Solid)	5	Final	8.87	6.97	7.86	20N 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(6A / 18AWG)	6	Final	25.18	18.53	22.50	△30℃ Max	Pass
	Temperature Rise(5A/ 22AWG)	6	Final	27.05	20.07	24.53	△30℃ Max	Pass
	Examination of Product	6	Final	No physical damage occurred			No abnormalities	Pass

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END