1.0 SCOPE

1.1. Content:

This specification covers performance, tests and quality requirements for 2.54mm Pitch Locker type T/H WTB AMPMODU Connector. Applicable product descriptions and part numbers are as shown on product drawing.

1.2. Qualification:

When tests are performed on the subject product line, procedures specified shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2.0 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 TE Connectivity Documents:

501-137371: Qualification Test Report
C-2271037: Customer drawing for Vertical Pin Header
C-2271038: Customer drawing for R/A Pin Header
C-2271035: Customer drawing for IDC REC
C-2271875: Customer drawing for wire crimping type REC housing
C-2271876: Customer drawing for wire crimping type REC contact

3.0 REQUIREMENTS

3.1 Design and Construction

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

3.2 Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.4 Ratings

A. Current: 3A (Connector Matched)

B. Operating Temperature: -40 to 105℃

C. Storage Environment:

Temperature: - 40℃ to 65℃ Relative humidity: 15%-70%

3.5 Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements. Unless otherwise specified, all tests shall be performed in the room temperature (5～35℃), relative humidity (45～85％), air pressure (86～106kPa), and special case temperature (18～22℃), relative humidity (60～70％), unless otherwise specified.

3.6 Test Requirements and Procedures Summary

3.6.1 Examination:

Test Description	Requirement	Procedure
Examination of the product	Meets visual requirements.	Visual inspection per product drawing. Per EIA-364-18

3.6.2 ELECTRICAL

Test Description	Requirement	Procedure
Contact Resistance	20mΩ Max initial 30mΩ Max final	Subject the specimen to maximum allowed rating current and measure the contact resistance. Per EIA-364-23
Insulation resistance.	10000 MΩ Min	Unmated connector with 500 V DC between adjacent contacts for 1 min. Per EIA-364-21
Dielectric strength	No breakdown or flashover.	**For crimping type** Mated connector with 1000 V AC between adjacent contacts for 1 min. Per EIA-364-20 **For IDC type** Mated connector with 500 V AC between adjacent contacts for 1 min. Per EIA-364-20

3.6.3 MECHANICAL

Test Description	Requirement	Procedure
Contact Retention Force	1kgf Min/per pin for pin header 0.2kgf min/per pin for receptacle	EIA-364-29. Measure force necessary to extract wire at a maximum rate of 100 mm per minute.
Random Vibration	No discontinuities of 1 microsecond or longer duration.	Subject mated specimens to 3.13G's rms between 50~2000HZ 15min in each of 3 mutually perpendicular planes. Wave shape: Random
Mechanical shock	No discontinuities of 1 microsecond or longer duration.	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.
Durability	No mechanical damage No change to performance Contact resistance: 40mΩ Max.	Mating and unmating specimens for 100 cycles at a max rate of 25.4mm/minute . Per EIA-364-09.

Test Description	Requirement	Procedure
Pin retention force	4.0kgf min/per pin.for REC crimping type 1.0kgf min/per pin.for HDR type 0.5kgf min/per pin.for IDC type	Measure force necessary to mate specimens at a max rate of 100mm per minute. Per EIA-364-13
Mating force	260gf Max	Measure force necessary to mate specimens at a max rate of 100mm per minute. Per EIA-364-13
Unmating force	21gf Min	Measure force necessary to mate specimens at a max rate of 100mm per minute. Per EIA-364-13
Solderability test	95% Min soldering area.	Tin dipped temperature: 245 ºC+/-5 ºC 4-5 sec Test method: EIA-364-52.

3.6.4 Environmental

Test Description	Requirement	Procedure
Thermal shock	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence	Subject specimens to 5 cycles between -40 and 105º C with 30 minutes dwells at temperature extremes and 1 minute transition between temperatures. Per EIA-364-32
Humidity test	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence	Subject specimens to 96H between 25~65 ºC at 90 to 95% RH Per EIA-364-31
Salt spray test	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence	Subject mated and unmated connectors should be tested according to the condition listed below : Temperature: 35+/-2 ºC Humidity: 95~98%(R.H) PH Value: 6.5~72 Duration:24H Per EIA-364-26,Test Condition A
Temperature life	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence	EIA 364-17 Test Condition 3 Method A Subject mated connectors should be tested according to the condition listed below : Temperature : 105□2□C Duration : 96 hours

*Remark: The text "**No mechanical damage**" means No structure is damaged/No connection becomes loose/The specimen still is fully functional in electricity after testing.*

3.6.5 Product Qualification and Requalification Test Sequence

Test group	A	B	C	D	E	F	G	H	I
Examination of product	1,6	1,5	1,9	1,5	1	1	1	1,6	1,7
Contact resistance	2,5	2,4	2,6	2,4				2,4	2,4
Insulation resistance			3,7						6
Withstanding Voltage			4,8					5	5
Contact retention force							2		
Random vibration	3								
Mechanical shock	4								
Durability			5						
Mating force						2			
Unmating force						3			

Test group	A	B	C	D	E	F	G	H	I
Thermal shock		3							
Salt spray test				3					
Humidity test									3
Solderability test					2				
Temperature life								3	
Sample size	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**

4.0 Quality Assurance Provisions

4.1 Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified.

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmitted.

4.4. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification

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