Product Specification
108-115169
1.0mm Pitch Wire to Board Connector with Latch

1. Scope:

1.1 Contents:

This specification covers the requirements for product performance, test methods and quality assurance provisions of 1.0mm Pitch Wire to Board Connector with Latch.
Applicable product description and part numbers are as shown in Fig.1.

2. Applicable Documents

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

2.1 AMP Specifications:

A. 109-5000 Test Specification, General Requirements for Test Methods

B. 501-115186 Test Report

2.2 Commercial Standards and Specifications:

A. EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

The application product descriptions and part numbers are as shown in Fig. 1

Product Part No.	Description
-2367196-	Board side of 1.0P R/A Wire to Board Connector with Latch
-2367197-	Board side of 1.0P Vertical Wire to Board Connector with Latch
-2367198-	Cable end housing of 1.0P Wire to Board Connector with Latch
-2367199-	Cable end contact of 1.0P Wire to Board Connector with Latch

Fig. 1 (End)

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DIST

LTR	REVISION RECORD	DR	DATE
A	REVISED	J.J	20May20

DR J.J
CHK W.H
APP W.H

TE Connectivity

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TITLE
Low profile wire to board connector

3. Requirements:

3.1 Design and Construction:

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

3.1.2 All materials conform to R.o.H.S.

3.2 Materials:

3.2.1 Contact: High performance copper alloy.

Finish: (a) Contact Area: Refer to the drawing.

(b) Under plate: Refer to the drawing.

(c) Solder area: Refer to the drawing.

3.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

3.2.3 Fitting Nail: Copper Alloy,

Finish: Refer to the drawing.

3.3 Ratings:

3.3.1 Working voltage less than 36 volts (per pin)

3.3.2 Voltage: 50 Volts AC (per pin)

3.3.3 Current: AWG#28: 1 Amperes (per pin)

3.3.4 Operating Temperature : -40 to +85℃

The upper limit of the temperature includes the temperature rising resulted by the energized electrical current.

3.4 Applicable Wires

A. Applicable Wire Size: AWG #28,

B. Recommended Applicable Insulation Diameter: UL 3302 and its equivalent stand wire.

3.5 Performance Requirements and Test Descriptions:

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.2. All tests shall be performed in the room temperature unless otherwise specified.

3.6 Test Requirements and Procedures Summary:

Para.	Test Items	Requirements	Procedures
3.5.1	Examination of product	Product shall be confirming to the requirements of applicable product drawing and applicable Specification	Visually, dimensionally and functionally inspected per applicable quality inspection plan
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	10 mΩ Max. (Initial) ΔR 20 mΩ Max. (Final)	Subject mated contacts assembled in housing to 20mV Max. open circuit at 10 mA. (EIA-364-23)
3.5.3	Dielectric withstanding voltage	No creeping discharge or flashover shall occur. Current leakage: 1mA Max.	250AC for 1 minute. Test between adjacent circuits of mated connectors. (EIA-364-20)
3.5.4	Insulation Resistance	100 MΩ Min.	Impressed voltage 500VDC for 1 minute. Test between adjacent circuits of mated connectors. (EIA-364-21
3.5.5	Temperature Rising	30 ℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)

Fig.2. To be continued

Para.	Test items	Requirements	Procedures
Mechanical Requirements			
3.5.6	Connector Mating/Unmating Force	Please see Item 5	Operation Speed： 25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
3.5.7	Durability (Repeated Mate/Unmating)	30 cycles	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3mm/min.
3.5.8	Contact Retention Force (Board Side)	0.40 Kgf Min.	Operation Speed： 25.4 ± 3 mm/minute. Measure the contact retention force with tester
3.5.9	Crimping Terminal / Housing Retention Force (Cable Side)	0.7 Kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing
3.5.10	Crimping Pull Out Force	AWG# 28: 1.0Kgf Min.	Operation Speed： 25.4 ± 3 mm/minute. Fix the crimped terminal, apply axial pull out force on the wire.
3.5.11	Vibration (Low Frequency)	No electrical discontinuity greater than 1 μ sec. Shall occur.	The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions. (EIA-364-28 Condition I)
3.5.12	Physical Shock	No electrical discontinuity greater than 1 μ sec. Shall occur.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)

Fig. 2 (To be continued)

Para	Test Items	Requirements	Procedures
Environmental Requirements			
3.5.13	Resistance to Wave Soldering Heat (Board Side)	See Product Qualification and Test Sequence Group 10 (Lead Free)	Solder Temp.： 265±5, 10 ℃ ±0.5sec.
3.5.14	Resistance to Reflow Soldering Heat (Board Side)	See Product Qualification and Test Sequence Group 10 (Lead Free)	Pre Heat：150℃~180℃, 60~120sec. Heat：230 Min., ℃ 40sec Min. Peak Temp.：260℃Max, 10sec Max.
3.5.15	Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 , 30 minutes ℃ +85 +3/-0 , 30 minutes ℃ (EIA-364-32, test condition I)
3.5.16	Humidity, Steady State	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃,90~95% RH, 96 hours.
3.5.17	Temperature Life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ for 96 hours. (EIA-364-17, Test condition A)
3.5.18	Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ a) Gold flash for 8 hours b) Gold plating 3 u" for 48 hours. c) Gold plating 5 u"(Min) for 96 hours. (EIA-364-26)
3.5.19	Solder ability (Board Side)	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverag	And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)
3.5.20	Hand Soldering Temperature Resistance (Board Side)	Appearance: No damage	T≧350 , 3sec at least.

Fig. 2 (End)

Note. Flowing Mixed Gas shell be conduct by customer request.

4. Product Qualification Test Sequence

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence										
Examination of Product				1、7	1、6	1、4				1	1
Low Level Contact Resistance		1、5	1、4	2、10	2、9	2、5				3	
Insulation Resistance				3、9	3、8						
Dielectric Withstanding Voltage				4、8	4、7						
Temperature Rise	1										
Mating / Unmating Force		2、4									
Durability		3									
Contact Retention Force (Board Side)									2		
Vibration			2								
Shock (Mechanical)			3								
Thermal Shock				5							
Humidity				6							
Temperature Life					5						
Salt Spray (Only For Gold Plating)						3					
Solder ability (Board Side)							1				
Crimping Pull Out Force								1			
Crimping Terminal / Housing Retention Force (Cable Side)									1		
Resistance to Soldering Heat (Board Side)										2	
Hand Soldering Temperature Resistance (Board Side)											2
Sample Size	2	4	4	4	4	4	2	4	4	4	4

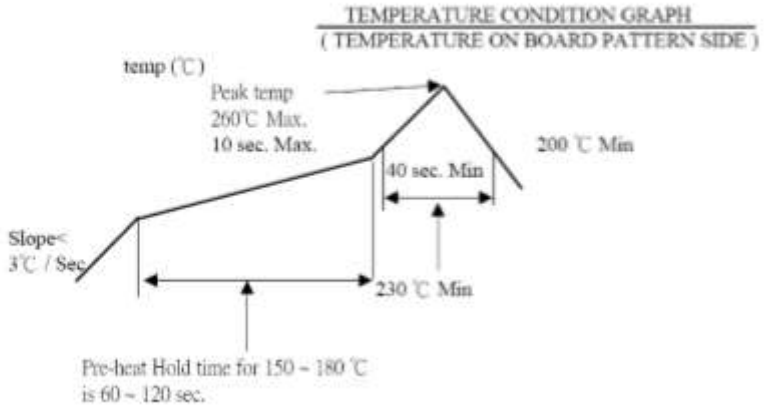
(a) Numbers indicated sequence in which tests are performed.

Fig.3

Unit: N

Number of circuits	At initial		At 30th
	I.F.(MAX.)	W.F.(MIN.)	W.F.(MIN.)
2	25	2	2
3	25	2	2
4	30	2	2
5	30	3	3
6	35	3	3
7	35	3	3
8	40	4	4
9	40	4	4
10	45	4	4
11	50	5	5
12	50	5	5
13	55	5	5
14	60	6	6
15	60	6	6
16	65	6	6
18	70	7	7
20	75	7	7
22	80	7	7
24	85	8	8
26	95	8	8
28	95	8	8

6 INFRARED REFLOW CONDITION



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TE Connectivity:

1393431-1 3631B101LL RH73H2A40MKTN SBCHE64R7K 2005330-1 3-1393225-0 MPT100C18RF 1-794222-0 141991-2 1903112-2 2377783-2 650075-000 936348-1 CPF0402B37K4E1 175977-2 2-292161-3 2834055-1 3430B2F51RTDF TE50BR39J 1743455-2 2380312-2 917696-1 ROX05SJ18R U5254-000005-030PA 1-962915-1 CRGCQ2010J3K3 SBCHE154R7K SMW73R0JT 1969656-1 2310537-1