SPECIFICATION

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SPEC. NO.: PS-50286-XXXXX-XXX **REVISION:** D

PRODUCT NAME: 1.25mm Pitch Wire to Board Connector

PRODUCT NO: 50286 Series, 51294 Series, 51498 Series,

PREPARED:	CHECKED:	APPROVED:
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DATE: 2022.01.18	DATE: 2022.01.18	DATE: 2022.01.18

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812248	NEW SPEC	Jason	2008.11.22
A	ECN-1005167	REVISE SPEC	Violet	2010/05/06
B	ECN-1401188	ADD WORKING VOLTAGE	Xufei	2014/01/13
C	ECN-1505077	ADD 51294 SERIES	TANGENHUI	2015/06/05
D	ECN-006783	ADD 51498 SERIES	Huang,Shun Sen	2022/01/18

2 SCOPE

This specification covers requirements for 1.25mm Wire to board LPF connector, which consists of Pin header mated with the crimped contacts assembled in the housing, unless otherwise specified. This product spec. Refer to Aces' P/N: 50286 Series;

3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

4.2.1 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.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.3 Fitting Nail: Copper Alloy,
Finish: Refer to the drawing.

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 150 Volts AC
4.3.3 Current: 1.0A
4.3.4 Operating Temperature : -40℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

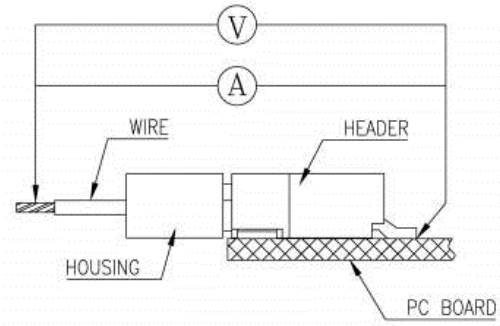
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low-signal Level Contact Resistance	10 m Ω Max.(initial)per contact 20 m Ω Max. Change allowed	Mate connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)
Insulation Resistance	500 MΩ Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 1 mA max.	300V AC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	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)
MECHANICAL		
Durability	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.
Mating / Un-mating Force	Mating Force:0.5Kgf/pin Max. Umating Force:0.05Kgf/pin Min.	Operation Speed： 25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
Contact Retention Force (Board Side)	0.5Kgf [4.9N] Min.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Fitting Nail /Housing Retention Force	0.20 Kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.

MECHANICAL		
Item	**Requirement**	**Standard**
Vibration	1 μs Max.	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)
Shock (Mechanical)	1 μs Max.	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)

ENVIRONMENTAL		
Item	**Requirement**	**Standard**
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test Sequence Group 9 **(Lead Free)**	Pre Heat：150℃~180℃, 60~120sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃Max, 10sec Max.
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)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
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)

Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (EIA-364-26)
Solder ability	Solder able area shall have minimum of 95% solder coverage.	Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance (Board Side)	Appearance: No damage	T≧350℃, 3sec at least.

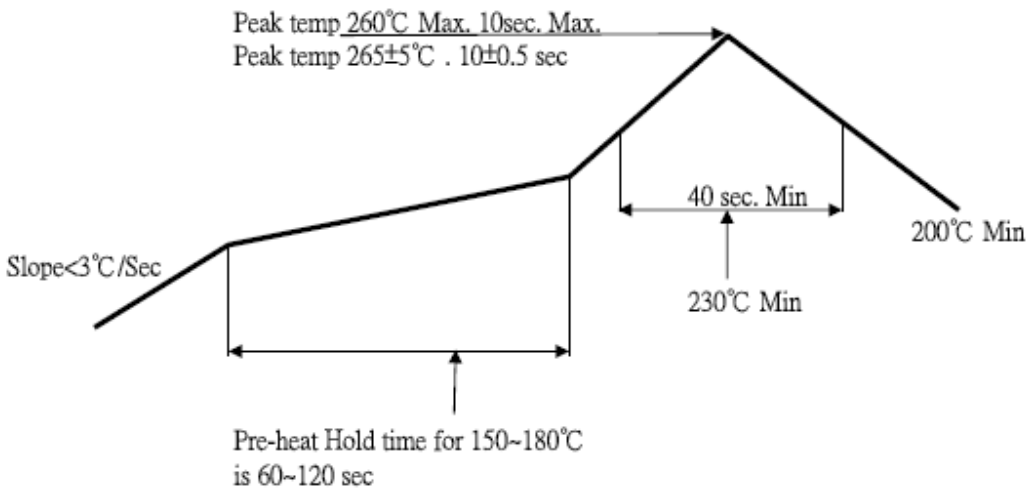
Note. Flowing Mixed Gas shell be conduct by customer request.



Contact Resistance Measurement

6 INFRARED REFLOW CONDITION

Temperature condition graph
(Temperature on board pattern side)



7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence										
Examination of Product	1、3	1、7	1、6	1、7	1、6	1、4			1	1	
Low-signal Level Contact Resistance		2、6	2、5	2、10	2、9	2、5			3		
Insulation Resistance				3、9	3、8						
Dielectric Withstanding Voltage				4、8	4、7						
Temperature rise	2										
Mating / Un-mating Forces		3、5									
Durability		4									
Contact Retention Force								1			
Vibration			3								
Shock (Mechanical)			4								
Thermal Shock				5							
Humidity				6							
Temperature life					5						
Salt Spray						3					
Solder ability							1				
Fitting Nail /Housing Retention Force								2			
Resistance to Soldering Heat									2		
Hand Soldering Temperature Resistance (Board Side)										2	
Sample Size	2	4	4	4	4	4	2	4	4	4	