



SPECIFICATION

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SPEC. NO.: PS-50287-XXXXX-XXX REVISION: D

PRODUCT NAME: 1.5mm PITCH WIRE TO BOARD CONNECTOR

PRODUCT NO: 50287 SERIES ; 50288 SERIES ; 51346 SERIES

PREPARED: LLJ DATE: 2017.06.12	CHECKED: ANDREW DATE: 2017.06.12	APPROVED: CHARLESLEE DATE: 2017.06.12
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Aces P/N: **50287 series**

TITLE: 1.5MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2017/06/12

REVISION: D

ECN No: ECN-1706184

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812248	NEW SPEC	JASON	2008.11.25
A	ECN-1005167	REVISE SPEC	VIOLET	2010.05.06
B	ECN-1107500	FOR ADW1107041 MODIFY CURRENT	CHUNBO	2011.07.29
C	ECN-1401172	ADD WORKING VOLTAGE	XUFEI	2014.01.09
D	ECN-1703417	ADD 51346 SERIES	LLJ	2017.06.12

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2 SCOPE

This specification covers performance, tests and quality requirements for 1.5mm pitch Wire to Board connector.

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: Pls see P/N LEGEND
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.3 Ratings

- 4.3.1 Working voltage less than 36 volts (per pin)
- 4.3.2 Voltage: 50 Volts AC
- 4.3.3 Current : AWG # 26: **3A** (per pin)
AWG # 28: 1A (per pin)
AWG # 30: 1A (per pin)
- 4.3.4 Operating Temperature : -25°C to +85°C

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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 Level Contact Resistance	40 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 M Ω 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.	500 VAC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30°C Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25°C (EIA-364-70 METHOD 1,CONDITION 1)
MECHANICAL		
Item	Requirement	Standard
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 \pm 3mm/min. (EIA-364-09)
Mating / Unmating Forces	Mating /Unmating Force: See item 8	Operation Speed : 25.4 \pm 3 mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)

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Contact Retention Force (Board Side)	0.5kgf Min.	Operation Speed : 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
Terminal / Housing Retention Force(Cable Side)	0.7kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Vibration	1 us Max.	The electrical load condition shall be 100mA 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 us 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 3	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 °C, 30 minutes +85 +3/-0 °C, 30 minutes (EIA-364-32, test condition I)

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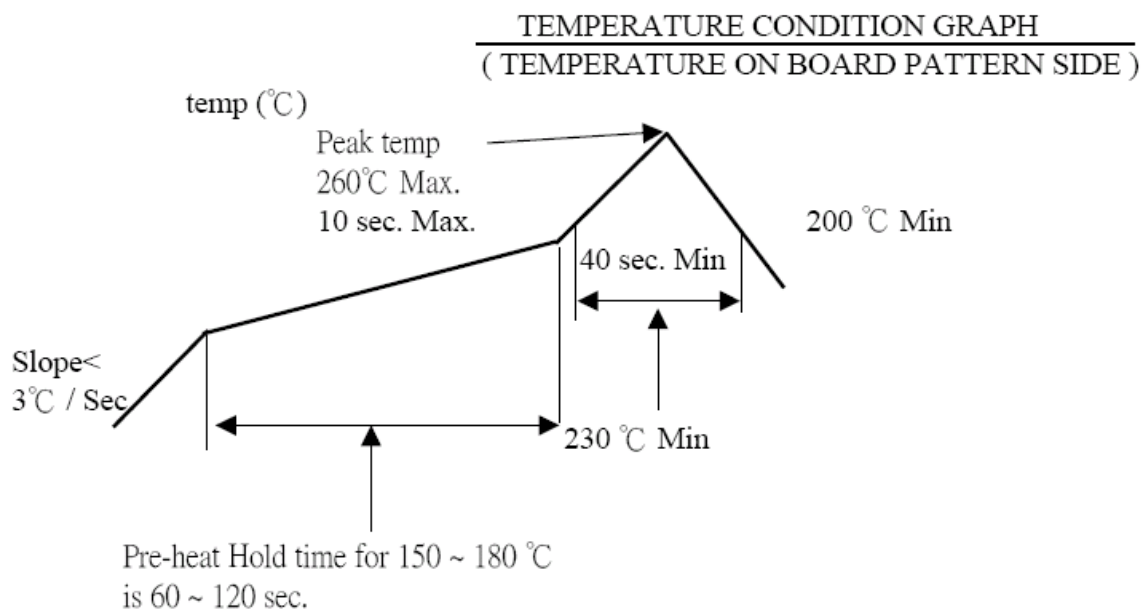
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Humidity	See Product Qualification and Test Sequence Group 3	Mated Connector 40°C, 90~95% RH, 96 hours. (EIA-364-31, Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 4	Subject mated connectors to temperature life at 85°C for 96 hours . (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C for 8 hours . (EIA-364-26, Test condition B)
Solder Ability	Solder able area shall have minimum of 95% solder coverage.	And then into solder bath, Temperature at 245 ±5°C , for 4-5 sec. (EIA-364-52)

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

6 INFRARED REFLOW CONDITION

6.1. Lead-free Process



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7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence									
Examination of Product			1、7	1、6	1、4				1	1、3
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						
Mating / Unmating Forces	2、4									
Durability	3									
Contact Retention Force(Board Side)							1			
Vibration		2								
Shock (Mechanical)		3								
Thermal Shock			5							
Humidity			6							
Temperature life				5						
Salt Spray					3					
Solder ability						1				
Terminal / Housing Retention Force(Cable Side)								1		
Resistance to Soldering Heat									2	
Temperature rise										2
Sample Size	4	4	4	4	4	2	4	4	4	4

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8 Mating / Unmating Force:

Unit: N

NO. OF Ckt.	At initial		At 30th
	Mating Force. (Max)	Unmating Force (Min)	Unmating Force (Min)
2	20	2	2
3	20	2	2
4	20	2	2
5	30	3	3
6	30	3	3
7	30	3	3
8	40	4	4
9	40	4	4
10	40	4	4
11	50	5	5
12	50	5	5
13	50	5	5
14	60	6	6
15	60	6	6