SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Jhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808
FAX: +886-3-463-1800

SPEC. NO.: PS-50274-XXXXX-XXX **REVISION:** D

PRODUCT NAME: 1.25mm PITCH WIRE TO BOARD CONNECTOR

PRODUCT NO: 50274/51254/52211 Series.

PREPARED:	CHECKED:	APPROVED:
Ding,shuqin	Lu,jingquan	hsieh,fu yu Hsieh,fu yu
DATE: 2022.03.11	DATE: 2022.03.11	DATE: 2022.03.11

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812248	NEW SPEC	JASON	2008.11.22
A	ECN-1005167	REVISE SPEC	VIOLET	2010.05.05
B	ECN-1309277	ADD 51254 SERIES	DAVID	2013.09.25
C	ECN-1401188	ADD WORKING VOLTAGE	XUFEI	2014.01.13
D	ECN-007322	ADD 52211 SERIES	Ding,shuqin	2022.03.11

2 SCOPE

This specification covers requirements for 1.25mm Wire to board 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: 50274/51254/52211 Series;

3 APPLICABLE DOCUMENTS

EIA-364 ELECTRONICS INDUSTRIES ASSOCIATION

4 REQUIREMENTS

4.1 Design and Construction

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

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Refer to the drawing)
Finish: Refer to the drawing
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0(Refer to the drawing)
4.2.3 Fitting Nail: Copper Alloy, (Refer to the drawing)

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 125 Volts AC
4.3.3 Current: AWG#26: 1.0A
AWG#28: 1.0 A,
AWG#30: 1.0 A,
AWG#32: 0.8 A
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	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	100 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.	500 VAC 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 METHOD 1,CONDITION 1)
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. (EIA-364-09)
Mating / Un-mating Force	Refer to item 8 Mating and un-mating force	Solder the Header connector to the test board, then place the board and housing initial and mating/un-mating 30th cycles. Operation speed：2.54±3 mm/minute Measure the force required to mate/Un-mate connector. (EIA-364-13)
MECHANICAL		
Item	**Requirement**	**Standard**
Contact Retention Force	0.5Kgf [4.9N] Min.	Operation Speed： 25.4 ± 3 mm/minute. Measure the contact retention force

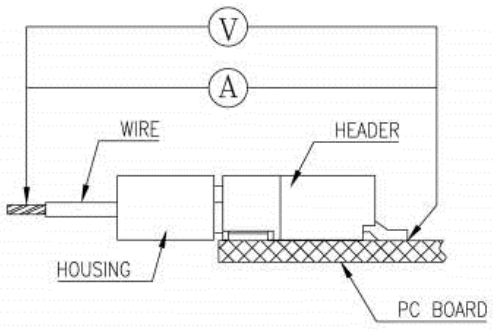
		with Tensile strength tester.
Crimping Pull Out Force	AWG# 26: 1.0Kgf [9.8N] Min. AWG# 28: 1.0Kgf [9.8N] Min. AWG# 30: 0.5Kgf [4.9N] Min. AWG# 32: 0.3Kgf [2.9N] Min.	Operation Speed： 25.4 ± 3 mm/minute. Fix the crimped terminal, apply axial pull out force on the wire.
Terminal Insertion Force	0.5Kgf [4.9N] Max.	Insert the crimped terminal into the housing, speed rate of 25.4 ± 3 mm/minute.
Terminal / Housing Retention Force	0.5kgf [2.94N] 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 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 10 **(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: -40 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, Reefer to Method II.

		(EIA-364-31, Test condition A)
Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ for 96 hours. Measure Signal. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ (a) Tin-Lead & Matt Tin for 24 hrs. (b) Gold Flash for 8 hrs. (c) Gold (3u) for 12 hrs.
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)

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

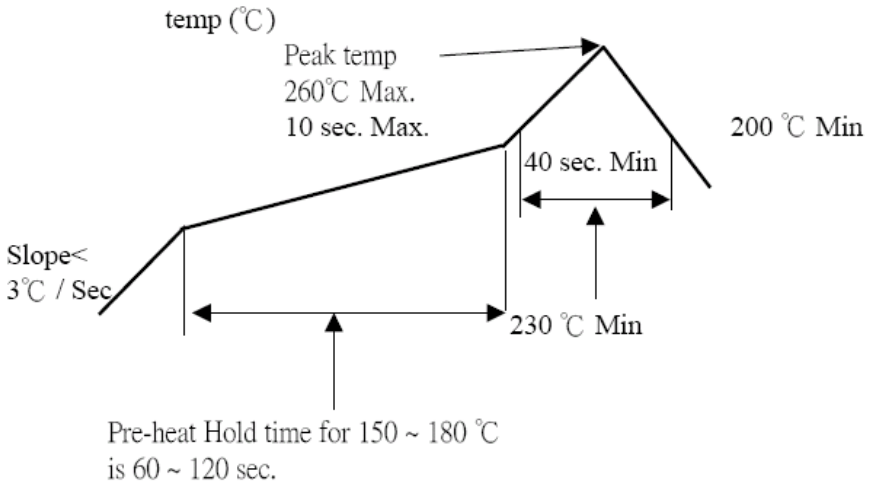


Contact Resistance Measurement

6 INFRARED REFLOW CONDITION

6.1. Lead-free Process

TEMPERATURE CONDITION GRAPH
(TEMPERATURE ON BOARD PATTERN SIDE)



(2 cycles max.)

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		2		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								3			
Vibration			3								
Shock (Mechanical)			4								
Thermal Shock				5							
Humidity				6							
Temperature life					5						
Salt Spray						3					
Solder ability							1				
Terminal Insertion Force									1		
Terminal / Housing Retention Force									2		
Resistance to Soldering Heat								1		2	
Crimping Pull Out Force											1
Sample Size	2	4	4	4	4	4	2	4	4	4	4

8 MATING AND UNMATING FORCE

No of CKT	Insertion Force (Kgf, Max)			Extration Force (Kgf, Min)		
	1st	6th	30th	1st	6th	30th
2	2.00	1.80	1.60	0.28	0.23	0.18
3	2.50	2.30	2.10	0.30	0.25	0.20
4	3.00	2.80	2.60	0.33	0.28	0.23
5	3.50	3.30	3.10	0.38	0.33	0.28
6	4.00	3.80	3.60	0.43	0.38	0.33
7	4.50	4.30	4.10	0.48	0.43	0.38
8	5.00	4.80	4.60	0.53	0.48	0.43
9	5.50	5.30	5.10	0.56	0.51	0.46
10	6.00	5.80	5.60	0.59	0.54	0.49
11	6.50	6.30	6.10	0.62	0.57	0.52
12	7.00	6.80	6.60	0.65	0.60	0.55
13	7.50	7.30	7.10	0.68	0.63	0.58
14	8.00	7.80	7.60	0.71	0.66	0.61
15	8.50	8.30	8.10	0.74	0.69	0.64