



SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Don Yuan Rd., Zhongli City,

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

TEL: +886-3-463-2808

FAX: +886-3-463-1800

SPEC. NO.: PS-51433-XXXXX-XXX REVISION: A

PRODUCT NAME: 2.00mm PITCH WIRE TO BOARD CONNECTOR

PRODUCT NO: 51433-XXXXX-XXX

PREPARED: Zhang,hongjun DATE: 2020.05.01	CHECKED: Lu,JingQuan DATE: 2020.05.01	APPROVED: Hsieh, fu yu DATE: 2020.05.01
-------------------------------------------------------------------------	----------------------------------------------------------------------	------------------------------------------------------------------------



Aces P/N: **51433 series**

TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: **2** OF **9**

1.	REVISION HISTORY	3
2.	SCOPE	4
3.	APPLICABLE DOCUMENTS	4
4.	REQUIREMENTS	4
5.	PERFORMANCE	5
6.	PRODUCT QUALIFICATION AND TEST SEQUENCE.....	8
7.	MATING / UNMATING FORCES	9



Aces P/N: **51433 series**

TITLE: **1.5 MM PITCH WIRE TO BOARD CONNECTOR**

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: **3** OF **9**

1. Revision History

Rev.	ECN #	Revision Description	Prepared	Date
A	ECN-2005087	NEW DRAWING	Zhanghongjun	2020/05/01

TITLE: **1.5 MM PITCH WIRE TO BOARD CONNECTOR**

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: 4 OF 9

2. SCOPE

This specification covers performance, tests and quality requirements for **2.0mm pitch wire-to-board connector**. These connectors are **used to computer or other application**. (Lead free product)
ACES : P/N : **51433-XXXHXXX-XXX** Wire Housing
P/N : **51433-TXXX-XXX** Crimping Terminal

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 Crimping Terminal: High performance copper alloy (**Phosphor Bronze**)

Finish: (a) Area: **Tin plated all over based on order information**

(b) Under plate: **Nickel-plated all over**

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

4.3 Ratings

4.3.1 Working voltage less than 36 volts AC (per pin)

4.3.2 Voltage Rating: **125 Volts AC** (per pin)

4.3.3 Current Rating: AWG#24: **2.0 A** (per pin)

AWG#26: **1.5 A** (per pin)

AWG#28: **1.0 A** (per pin)

AWG#30: **0.5 A** (per pin)

4.3.4 Operating Temperature : **-40°C to +105°C**

TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: 5 OF 9

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	20 m Ω Max.(initial) 40 m Ω Max. (After 30 times durability, mechanical and/ or environmental test)	Mate connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)
Insulation Resistance	1000 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)

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	Please see item7	Operation Speed : 25.4 \pm 3 mm/minute.. Measure the force required to mate/unmated connector. (EIA-364-13)
Crimping Terminal Pull Strength of the housing(Receptacle)	1.5kgf Min. Per Pin	Operation Speed : 25.4 \pm 3 mm/minute. Measure the Terminal retention force with Tensile strength tester.



TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: 6 OF 9

Vibration	1 us 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 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
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 °C, 30 minutes +105 +3/-0 °C, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 60°C, 90-95% RH, 96 hours. (EIA-364-31, Condition A, Method II)

TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

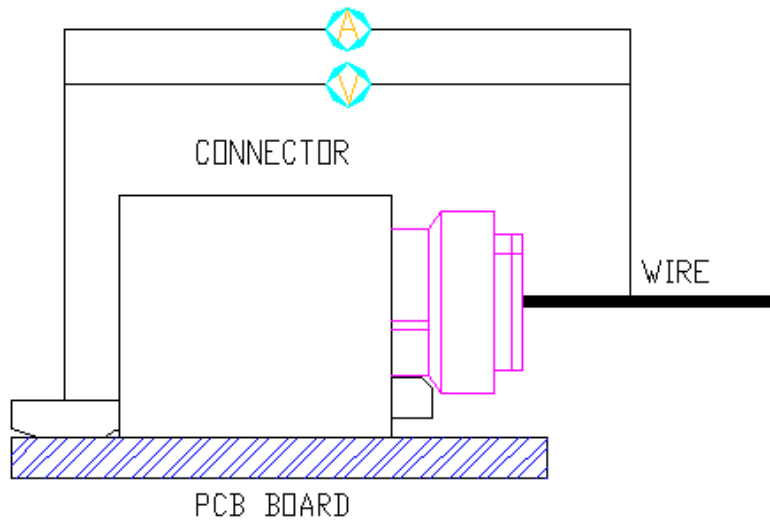
REVISION: A

ECN No: ECN-2005087

PAGE: 7 OF 9

Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 105°C for 96 hours. (EIA-364-17, Test condition A)
Cold Resistance	See Product Qualification and Test Sequence Group 4	Mated Connector -40°C, 96 hours. (EIA-364-59, Condition A)

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



Contact Resistance Measuring Point

TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: 8 OF 9

6. PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group									
	1	2	3	4	5	6				
	Test Sequence									
Examination of Product	1			1、7	1、6	1、5				
Low Level Contact Resistance		1、5	1、4	2、10	2、9	2、4				
Insulation Resistance				3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Mating / Unmating Forces		2、4								
Durability		3								
Vibration			2							
Shock (Mechanical)			3							
Thermal Shock				5						
Humidity				6						
Temperature life					5					
Crimping Terminal Pull Strength of the housing (Receptacle)	2									
Cold Resistance						3				
Sample Size	2	4	4	4	4	4				

TITLE: 1.5 MM PITCH WIRE TO BOARD CONNECTOR

RELEASE DATE: 2020/05/01

REVISION: A

ECN No: ECN-2005087

PAGE: 9 OF 9

7. Mating / Unmating Forces

Unit: Kgf

NO. OF Ckt.	At initial		At 30th	
	Mating Force. (Max)	Unmating Force (Min)	Mating Force. (Max)	Unmating Force (Min)
2	3.6	1.0	3.4	0.35
3	4.4	1.2	4.1	0.45
4	5.2	1.4	4.8	0.50
5	6.0	1.5	5.5	0.55
6	6.6	1.6	6.0	0.60
7	7.2	1.7	6.5	0.65
8	7.8	1.8	7.0	0.70
9	8.4	1.9	7.5	0.75
10	9.0	2.0	8.0	0.80
11	9.6	2.1	8.5	0.85
12	10.2	2.2	9.0	0.90
13	10.8	2.3	9.5	0.95
14	11.4	2.4	10.0	1.00
15	12.0	2.5	10.5	1.05