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-51475-XXXXX-XXX **REVISION:** A

PRODUCT NAME: 1.25mm Pitch WTB CONNECTOR

PRODUCT NO: 51475 Series

PREPARED:	CHECKED:	APPROVED:
ZHANGHAO	**BRAVE**	**BRAVE**
DATE: **2019/12/21**	DATE: **2019/12/21**	DATE: **2019/12/21**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
A	ECN-001558	NEW SPEC	ZHANGHAO	2019/12/21

2 SCOPE

This specification covers performance, tests and quality requirements for 1.25mm pitch SMT Wire to Board connector. Aces's P/N: 51475 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 RoHS and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

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

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 200 Volts AC (per pin)
4.3.3 Current:
(a) AWG # 26: 1.5 Amperes (per pin)
(b) AWG # 28: 1.5 Amperes (per pin)
(c) AWG # 32: 1.5 Amperes (per pin)

4.3.4 Operating Temperature : -25℃ to +130℃

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)per contact 40 m Ω Max. (after tests)	Mate connectors, measure by dry circuit, 20mV Max., 100mA (DC) Max. (EIA-364-23)
Insulation Resistance	1000 M Ω Min.	Unmated connectors, apply 500 V DC for 2 minutes between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 5 mA max.	1000 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,METHOD1,CONDITION1)
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 ± 3mm/min. (EIA-364-09)
Mating / Unmating Forces	Mating Force: See item 8 Unmating Force: See item 8	Operation Speed：25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
Terminal / Housing Retention Force	0.3kg.f MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.

Item	Requirement	Standard
Fitting Nail /Housing Retention Force	0.3kg.f MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.
Crimping Terminal / Housing Retention Force (Cable Side)	1.0 kg.f Min. per pin	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 (3 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 25 cycles. 1 cycles: -55 +/-3 ℃, 30 minutes +25+10/-5 ℃, 5 minutes +85 +/-2 ℃, 30 minutes (EIA-364-32, test condition A)

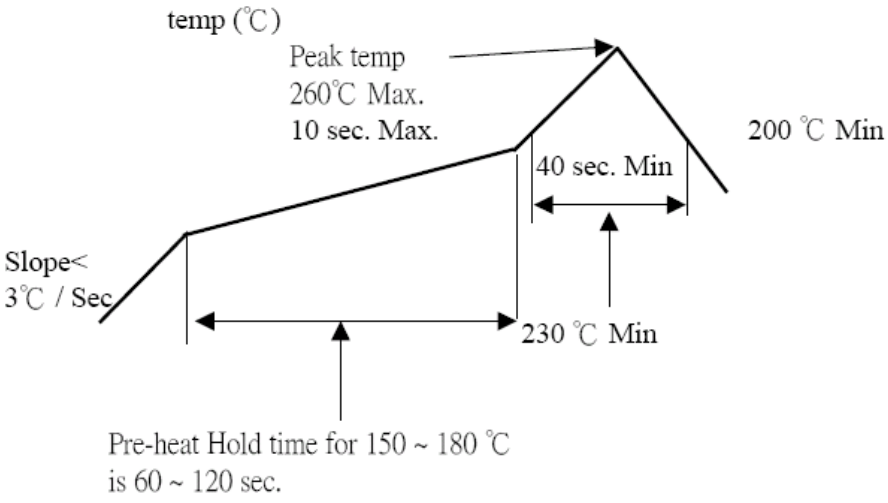
Humidity	See Product Qualification and Test Sequence Group 5	Mated Connector 60+/-2℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 6	Mated connectors to temperature life at 105+/-2℃ for 96 hours. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 7	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ MATTE TIN for 48 hours
Solder ability	Solder able area shall have minimum of 90% 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	Appearance: No damage	T≧350℃, 3sec at least.

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

6 INFRARED REFLOW CONDITION

6.1. Lead-free Process (2 cycles max)

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
	Test Sequence									
Examination of Product		1、6	1、5	1、6	1、6	1、6		1、3	1、3	
Low Level Contact Resistance		2、7	2、6	2、9	2、9	2、9	1、3		4	
Insulation Resistance				3、8	3、8	3、8				
Dielectric Withstanding Voltage				4、7	4、7	4、7				
Temperature rise	1									
Mating / Unmating Forces		3、5								
Durability		4								
Vibration			3							
Shock (Mechanical)			4							
Thermal Shock				5						
Humidity					5					
Temperature life						5				
Salt Spray							2			
Solder ability								2		
Resistance to Soldering Heat									2	
Terminal / Housing Retention Force										1
Fitting Nail /Housing Retention Force										2
Sample Size	2	4	4	4	4	4	4	4	4	4

8 Insertion / Extraction Force

Units: kgf

Number of circuits	At initial		At 30th
	I.F.(MAX.)	W.F.(MIN.)	W.F.(MIN.)
5	1.5	0.3	0.3
10	3.0	0.4	0.4
15	4.0	0.5	0.5
20	5.0	0.7	0.7
25	6.0	1.0	1.0