SPECIFICATION

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SPEC. NO.: PS-50251-XXXXX-XXX **REVISION:** F

PRODUCT NAME: 1.0mm WTB WAFER SMT TYPE

PRODUCT NO: 50251 Series；50252 Series；50253 Series；50254 Series

50255 Series；50256 Series；50257 Series；50258Series

50260 Series；50263 Series；50266 Series；50418 Series；

52233 Series；52301 Series; 52376 Series

PREPARED:	CHECKED:	APPROVED:
Gao.Li	XuZhiYong	XuZhiYong
DATE: 2024.01.07	DATE: 2024.01.07	DATE: 2024.01.07

1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	ECN-0812248	NEW SPEC	Jason	2008.11.27
A	ECN-0909017	For ADW0909001 Add Hand Soldering	Jason	2009.09.02
B	ECN-1001174	Add 50418 Series &LLCR Initial Data And Modify Salt Spray	Jason	2010.02.26
C	ECN-1401156	ADD WORKING VOLTAGE	Xufei	2014.01.09
D	ECN-000844	FOR APD1090465 ADD 52233Series	LuTaoTao	2021/6/17
E	ECN-008934	FOR APD1110269 ADD 52301Series	Wan.Bo	2022/11/11
F	ECN-014777	FOR APD1120461 ADD 52376Series	Gao.Li	2024/01/07

2 SCOPE

This specification covers performance, tests and quality requirements for 1.0mm pitch SMT WTB connector. ACES P/N: 50251 Series；50252 Series；50253 Series；50254 Series；50255 Series；50256 Series；50257 Series；50258Series；50260 Series；50263 Series；50266 Series；50266 Series；50418 Series；52233 Series；52301 Series; 52376 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
Finish: Pls see P/N LEGEND
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.3 Ratings and Applicable Wire

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 50 Volts AC (per pin)
4.3.3 Current(Max) and Applicable wires: 28AWG: 1 Amperes (per pin)
30AWG: 1 Amperes (per pin)
32AWG: 1 Amperes (per pin)
4.3.4 Operating Temperature : -25℃ to +65℃

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	55 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 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	250 VAC Min. at sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: 1 mA max.	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 after:1 A/Power contact. The temperature rise above ambient shall not exceed 30℃ The ambient condition is still air at 25℃ (EIA-364-70 METHOD 2)
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 / Unmating Forces	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(Cable Side)	7N MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the Crimping terminal assembled in the housing.

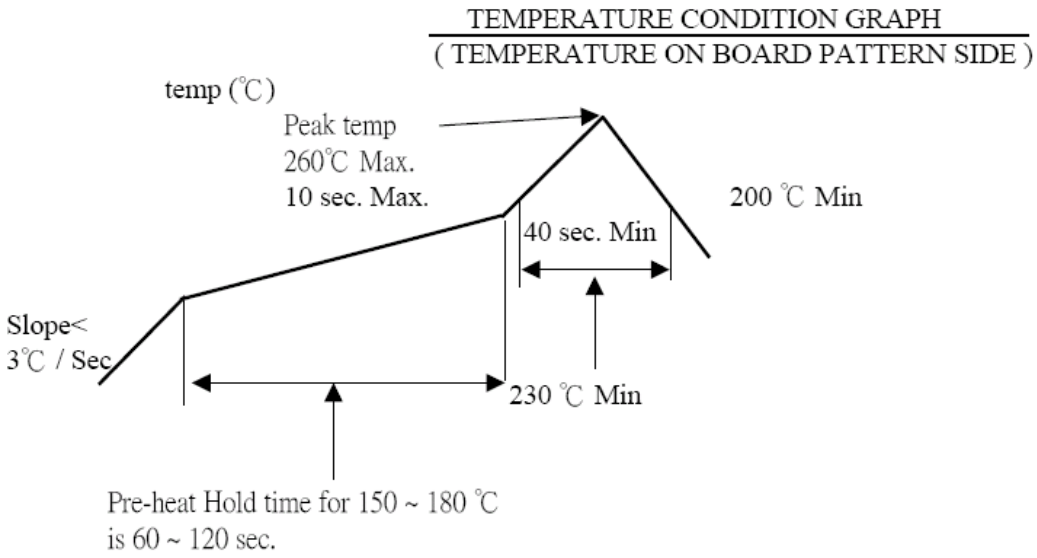
MECHANICAL		
Item	**Item**	**Item**
Terminal / Housing Retention Force(Wafer)	3.5N MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Fitting Nail /Housing Retention Force	5N MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail 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		
Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 4 **(Lead Free)**	See 6.1
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 10 cycles. 1 cycles: -25 +0/-3 ℃, 30minutes+65 +3/-0 ℃, 30 minutes (EIA-364-27, test condition A)
Humidity-Temperature Cycle	See Product Qualification and Test Sequence Group 4	Mated Connector 25~65℃,90~95% RH, 10 Cycles Reefer to Method IV. (EIA-364-31, Test condition A)

Temperature life	See Product Qualification and Test Sequence Group 8	Subject mated connectors to temperature life at 85℃ for 96 hours. Measure Signal. (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration at 35℃ 1). Gold plated 5u" for 96 hours. 2). G/F for 8 hours. (EIA-364-26,Test condition B)
Hand Soldering	Hand Soldering temperature: 250±5℃,3~4sec at least.	Appearance:No Damage
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.

6 INFRARED REFLOW CONDITION

6.1. Lead-free Process



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、3
Low-signal Level Contact Resistance		1、5	1、4	2、10	2、9	2、5				
Insulation Resistance				3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Temperature rise	1									
Mating / Unmating Forces		2、4								
Durability		3								
Contact Retention Force										4
Vibration(Random) / Vibration			2							
Shock (Mechanical)			3							
Thermal Shock				5						
Humidity				6						
Temperature life					5					
Salt Spray(Only For Gold Plating)						3				
Solder ability							1			
Terminal / Housing Retention Force									1	
Fitting Nail /Housing Retention Force									2	
Resistance to Soldering Heat										2
Sample Size	2	4	4	4	4	4	2	4	4	4

8.INSERTION/WITHDRAWAL FORCE(Unit:N)

Number of circuit	At initial		At 30th
	I.F.(MAX)	W.F.(MIN)	W.F.(MIN)
2	20	2	2
4	20	2	2
6	20	2	2
8	20	2	2
10	20	2	2
12	25	3	3
14	25	3	3
16	25	3	3
18	25	3	3
20	25	3	3
22	30	4	4
24	30	4	4
26	30	4	4
28	30	4	4
30	30	4	4
32	35	5	5
34	35	5	5
36	35	5	5
38	35	5	5
40	35	5	5
42	40	6	6
44	40	6	6
46	40	6	6
48	40	6	6
50	40	6	6