SPECIFICATION

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SPEC. NO.: PS-50289-XXXXX-XXX **REVISION:** K

PRODUCT NAME: 1.5 mm PITCH WIRE TO BOARD WAFER

PRODUCT NO: 50289 /50290 / 50291/50292 /50481 SERIES ;

50493 /50293/50495/51481 SERIES

PREPARED:	CHECKED:	APPROVED:
SHI,YANAN	**BRAVE**	**BRAVE**
DATE: **2019/12/25**	DATE: **2019/12/25**	DATE: **2019/12/25**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812248	NEW SPEC	JASON	2008/12/5
A	ECN-0902180	ADD 50386 SERIES	JASON	2009/02/16
B	ECN-0910310	ADD 50413 SERIES	JASON	2009/11/02
B1	ECN-1002146	ADD UNMATE CONNECTOR ANGLE AND UPDATED CONTACT RETENTION FORCE	JASON	2010/02/08
C	ECN-1004017	ADD UNMATE CONNECTOR ANGLE AND UPDATED CONTACT RETENTION FORCE	JASON	2010/04/02
D	ECN-1107033	FOR ADW1106050 MODIFY CURRENT	CHUNBO	2011/06/22
E	ECN-1112306	ADD 50493 SERIES	CHUNBO	2012/01/10
F	ECN-1204517	ADD 50293 SERIES	CHUNBO	2012/04/25
G	ECN-1401254	ADD WORKING VOLTAGE/50495 SERIES	XUBIN	2014/01/18
H	ECN-1312146	ADD WORKING VOLTAGE/51481 SERIES	SKY	2014/03/17
J	ECN-1711408	ADD 16/17/18PIN Mating / Unmating Force	WuXiaoGuang	2017/11/10
K	ECN-2001058	Update AWG#24 Current	SHI,YANAN	2019/12/25

2 SCOPE

This specification covers performance, tests and quality requirements for 1.5mm pitch WTB wafer.

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

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage : 50 Volts AC (per pin)
4.3.3 Current : AWG # 24: 4.0 A (per pin)
AWG # 26: 3.0 A (per pin)
AWG # 28: 2.5 A (per pin)
AWG # 30: 1.5 A (per pin)
4.3.4 Operating Temperature : -25℃ to +85℃

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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℃ 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 2)
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	See item 8	Operation Speed：25.4 ± 3 mm/minute.. Measure the force required to mate/unmated connector. Unmated connector angle θ is +/- 20 degree max. See figure 1 (EIA-364-13)

Contact Retention Force(Board Side)	300gf Min.	Operation Speed： 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
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
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 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, 96 hours. (EIA-364-31,Condition A, Method II)

Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ for 96 hours. (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℃ for 8 hours. (EIA-364-26,Test condition B)
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.

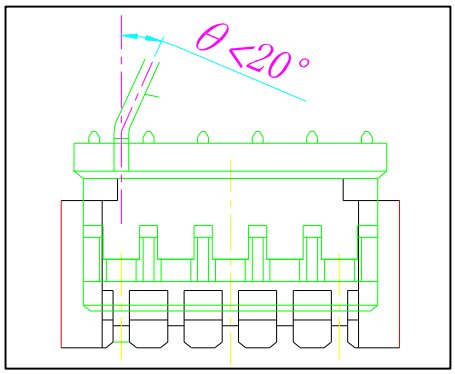
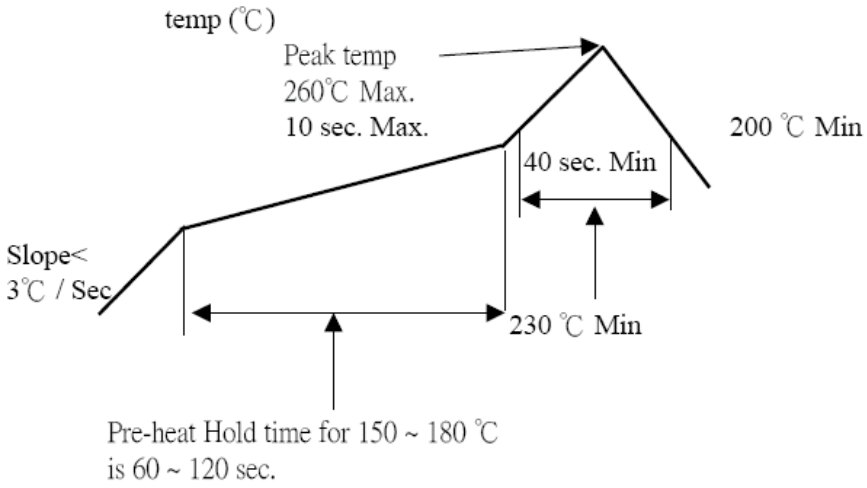


Figure 1(Unmated connector angle)

6 INFRARED REFLOW CONDITION

6.1. Lead-free Process

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
	Test Sequence								
Examination of Product				1、7	1、6	1、4			1
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				
Temperature rise	1								
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		
Resistance to Soldering Heat									2
Sample Size	2	4	4	4	4	4	2	4	4

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
16	60	6	6
17	70	7	7
18	70	7	7