



## 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-51327-XXXXX-XXX REVISION: 0

PRODUCT NAME: 1.5 mm PITCH WIRE TO BOARD WAFER

PRODUCT NO: 51327 SERIES

PREPARED:  <b>TANGENHUI</b> DATE: <b>2016/08/24</b>	CHECKED:  <b>ANDREW</b> DATE: <b>2016/08/24</b>	APPROVED:  <b>CHARLESLEE</b> DATE: <b>2016/08/24</b>
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### 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1504083	NEW SPEC	TANGENHUI	2016/03/24
0	ECN-1508381	REVISION	TANGENHUI	2016/08/24

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## 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: 3.0 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.
<b>ELECTRICAL</b>		
Item	Requirement	Standard
Low Level Contact Resistance	40 m $\Omega$ Max.(initial)per contact 20 m $\Omega$ Max. Change allowed	Mate connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)
Insulation Resistance	500 M $\Omega$ 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)
<b>MECHANICAL</b>		
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	See item 8	Operation Speed : 25.4 $\pm$ 3 mm/minute.. Measure the force required to mate/unmated connector. Unmated connector angle $\theta$ is +/- 20 degree max. See figure 1 (EIA-364-13)



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Contact Retention Force(Board Side)	300gf Min.	Operation Speed : 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
Fitting Nail /Housing Retention Force	0.15 Kgf 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 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)

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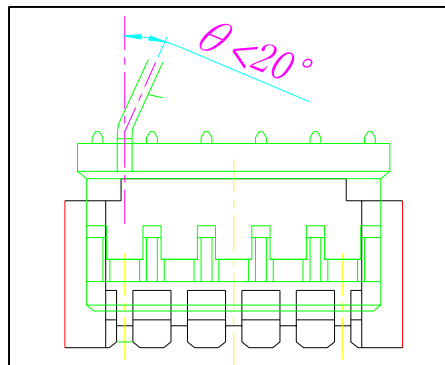
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Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40 , 90~95% RH, 96 hours. (EIA-364-31, Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature 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 shall be conduct by customer request.



**Figure 1**(Unmated connector angle)

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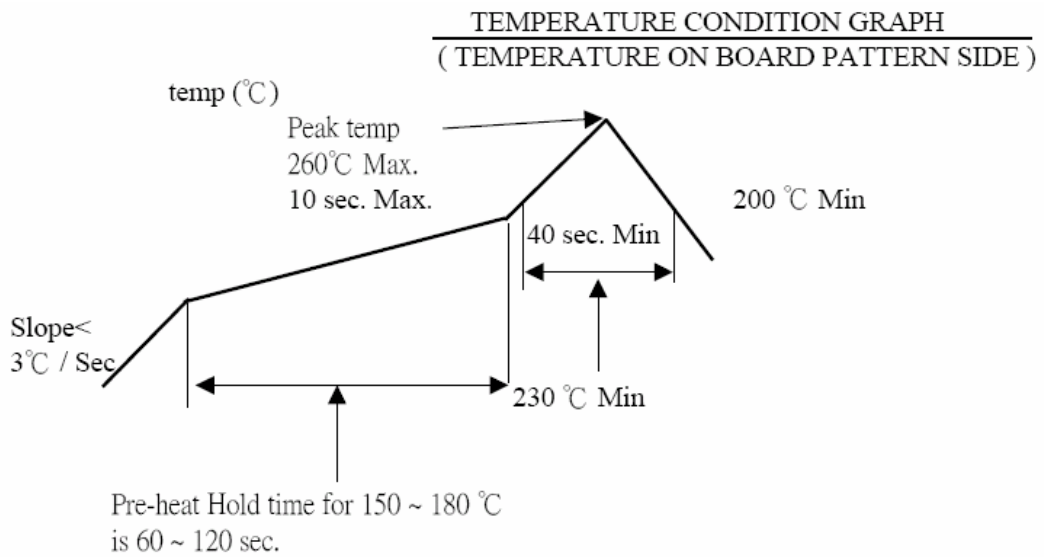
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## 6 INFRARED REFLOW CONDITION

### 6.1. Lead-free Process





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## 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		
Fitting Nail /Housing Retention Force								2	
Resistance to Soldering Heat									2
Sample Size	2	4	4	4	4	4	2	4	4

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**8 Mating / Unmating Force:**

Unit: kgf

NO. OF CKT.	At initial		At 30th
	Mating Force. ( Max )	Unmating Force ( Min )	Unmating Force ( Min )
2	2	0.2	0.2
3	2	0.2	0.2
4	2	0.2	0.2
5	3	0.3	0.3
6	3	0.3	0.3
7	3	0.3	0.3
8	4	0.4	0.4
9	4	0.4	0.4
10	4	0.4	0.4
11	5	0.5	0.5
12	5	0.5	0.5
13	5	0.5	0.5
14	6	0.6	0.6
15	6	0.6	0.6