



## SPECIFICATION

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SPEC. NO.: PS-50441-XXXXX-XXX REVISION: 0

PRODUCT NAME: 1.0mm PITCH WIRE TO BOARD WAFER

PRODUCT NO: 50441 SERIES

PREPARED:  <b>GAVIN</b>  DATE: <b>2010/11/24</b>	CHECKED:  <b>SAM</b>  DATE: <b>2010/11/24</b>	APPROVED:  <b>JASON</b>  DATE: <b>2010/11/24</b>
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RELEASE DATE: 2010/11/27

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ECN No: ECN-1011184

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### 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1008030	PROPOSAL	GAVIN	2010/08/07
0	ECN-1011184	RELEASE	GAVIN	2010/11/24

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## 2 SCOPE

This specification covers performance, tests and quality requirements for **1.00mm wire to board wafer SMT R/A**. These connectors are **this product spec. refer to Aces's P/N:50441 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 R.o.H.S. and the standard depends on TQ-WI-140101.

### 4.2 Materials and Finish

- 4.2.1 Contact: High performance copper alloy (**Phosphor Bronze**)  
Finish: (a) Contact Area: **Refer to the drawing.**  
(b) Under plate: **Refer to the drawing.**  
(c) Solder area: **Refer to the drawing.**
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.3 Latch: **Stainless steel**
- 4.2.4 Nut or Ear: **Copper Alloy, Finish: Refer to the drawing.**

### 4.3 Ratings

- 4.3.1 Voltage: **30 Volts AC (per pin)**
- 4.3.2 Current: **AWG#28-1.0A (per pin)**  
**AWG#30-1.0A (per pin)**  
**AWG#32-0.8A (per pin)**
- 4.3.3 Operating Temperature : **-40°C to +85°C**

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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	<b>10 m Ω</b> Max.(initial)per contact <b>20 m Ω</b> Max.Change allowed	Mate connectors, measure by dry circuit, <b>20mV</b> Max., <b>100mA</b> Max. (EIA-364-23)
Insulation Resistance	<b>100 M Ω</b> Min.	Unmated connectors, apply <b>500 V</b> DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: <b>1 mA</b> max.	<b>300 VAC</b> Min. at sea level for <b>1</b> minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	<b>30°C</b> Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25°C (EIA-364-70,METHOD1,CONDITION1)
<b>MECHANICAL</b>		
Item	Requirement	Standard
Durability	<b>30</b> cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of <b>25.4 ± 3mm/min.</b> (EIA-364-09)
Mating /Unmating Forces	Mating Force: <b>3N*(CKT)+15N</b> Max Unmating Force: <b>0.4 Kg</b> Min.	Operation Speed : <b>25.4 ± 3</b> mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)

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<b>MECHANICAL</b>		
<b>Item</b>	<b>Requirement</b>	<b>Standard</b>
Terminal / Housing Retention Force (Board Side)	0.4 kgf MIN.	Operation Speed : <b>25.4 ± 3</b> mm/minute. Measure the contact retention force with Tensile strength tester.
Fitting Nail /Housing Retention Force	0.25kgf MIN.	Operation Speed : <b>25.4 ± 3</b> mm/minute. Measure the contact retention force with Tensile strength tester.
Vibration	1 $\mu$ s 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 <b>10 and 55 Hz</b> . The entire frequency range, from <b>10 to 55 Hz</b> and return to <b>10 Hz</b> , 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 $\mu$ s Max.	Subject mated connectors to <b>50 G's</b> (peak value) <b>half-sine</b> shock pulses of <b>11</b> 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)

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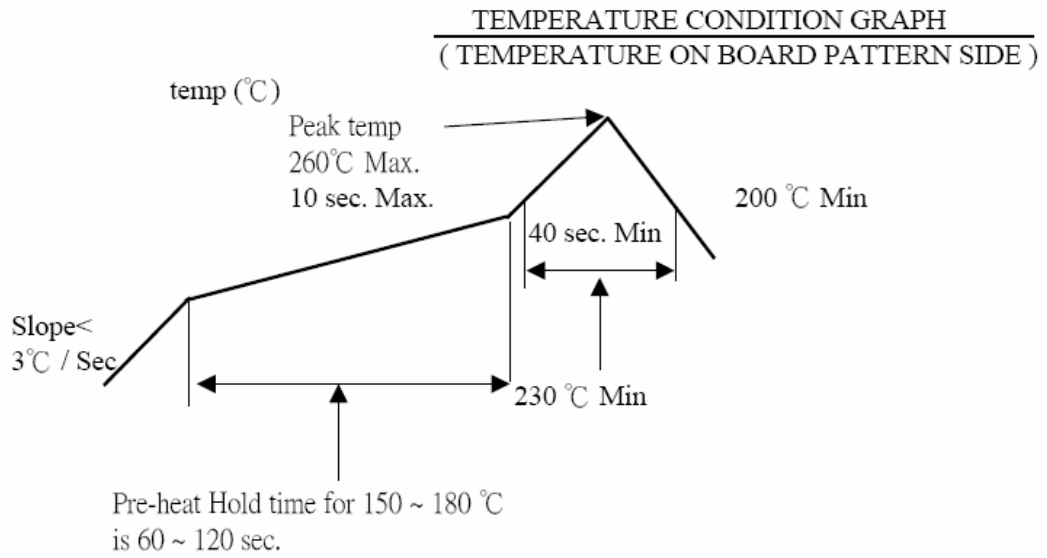
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### ENVIRONMENTAL

Item	Requirement	Standard
Resistance to <b>Wave</b> Soldering Heat(Board Side)	See Product Qualification and Test Sequence Group <b>9(Lead Free)</b>	Solder Temp. : 265±5°C, 10±0.5sec.
Resistance to <b>Reflow</b> Soldering Heat (Board Side)	See Product Qualification and Test Sequence Group <b>9 (Lead Free)</b>	Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group <b>4</b>	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 °C, 30 minutes +85 +3/-0 °C, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group <b>4</b>	Mated Connector 40°C, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group <b>5</b>	Subject mated connectors to temperature life at <b>85°C</b> for <b>96 hours</b> . (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group <b>6</b>	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C <b>(I) Gold flash for 8 hours</b> <b>(II) Gold plating 5 u" for 96 hours.</b> (EIA-364-26)
Solder ability (Board Side)	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	And then into solder bath, Temperature at <b>245 ±5°C</b> , for <b>4-5</b> sec. (EIA-364-52)
Hand Soldering Temperature Resistance (Board Side)	Appearance: No damage	T ≥ 350°C, 3sec at least.

**Note.** Flowing Mixed Gas shall be conduct by customer request.

## 6 INFRARED REFLOW CONDITION







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**7 PRODUCT QUALIFICATION AND TEST SEQUENCE**

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence										
Examination of Product				1、7	1、6	1、4			1	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									
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 (Board Side)								1			
Fitting Nail /Housing Retention Force								2			
Resistance to Soldering Heat (Board Side)									2		
Hand Soldering Temperature Resistance(Board Side)										2	
Sample Size	2	4	4	4	4	4	2	4	4	4	4