



## SPECIFICATION

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SPEC. NO.: PS-88030-XXXX REVISION: C

PRODUCT NAME: 0.8mm PITCH BOARD TO BOARD CONN.

PRODUCT NO: 88030-XXXX; 50104-XXXXX-XXX; 50164-XXXXX-XXX

PREPARED:  <b>LIZHAO</b>  DATE: <b>2010/7/1</b>	CHECKED:  <b>CARL</b>  DATE: <b>2010/7/1</b>	APPROVED:  <b>JASON</b>  DATE: <b>2010/7/3</b>
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RELEASE DATE: 2010/7/1

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ECN No: 1006197

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Aces P/N: **88030-xxxx series**

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## 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
B	ECN-0907206	Spec revised	JASON	2009/08/19.
C	ECN-1006197	Add 50104 and 50164 series	LIZHAO	2010/7/1

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## 2 SCOPE

This specification covers performance, tests and quality requirements for **0.8mm pitch Board To Board CONN**.

## 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 (**Phosphor Bronze**)

Finish: (a) Finish: Refer to the drawing

(b) Under plate: Refer to the drawing

4.2.2 Housing: **Thermoplastic, high temp. UL94V-0**

4.2.3 Ear: **Copper Alloy, Tin-plated: Refer to the drawing**

### 4.3 Ratings

4.3.1 Voltage: **100 V [ AC(rms)/DC ]**

4.3.2 Current: **0.5 Amperes (per pin)**

4.3.3 Operating Temperature : **-55°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-signal Level Contact Resistance	<b>55m Ω</b> Max.(initial)per contact $\Delta R$ 10 m Ω Max.	Mate connectors, measure by dry circuit, <b>20mV</b> Max., <b>10mA</b> Max. (EIA-364-23)
Insulation Resistance	<b>1000 M Ω</b> Min.	Unmated connectors, apply <b>250 V</b> DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	<b>250 VAC</b> Min. at sea level for <b>1</b> minute.No discharge, flashover or breakdown.Current leakage: <b>0.5 mA</b> max.	Test between adjacent contacts of unmated connectors. (EIA-364-20)

<b>MECHANICAL</b>		
Item	Requirement	Standard
Mating and Un-mating Forces	<b>0.69 N</b> ( 70gf ) Max./CKT. <b>0.118 N</b> ( 12gf ) Min./CKT.	Mate and un-mate connectors at a rate of <b>25± 3 mm/min.</b>
Terminal / Housing Retention Force	<b>1.96 N</b> ( 0.2Kgf ) Min. <b>3.9 N</b> ( 0.4Kgf ) Min.	Apply axial pull out force on the terminal assembled in the housing at a rate of <b>25± 3 mm/min.</b>
Fitting Nail / Housing Retention Force	<b>0.15Kgf</b> Min.	Apply axial pull out force on the terminal assembled in the housing at a rate of <b>25± 3 mm/min.</b>
Temperature Rise	<b>30</b> Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at <b>25</b> (EIA-364-70,METHOD1,CONDITION1)
Vibration	<b>1 μs</b> Max.	The electrical load condition shall be <b>100 mA</b> maximum for all contacts. Subject to a simple harmonic motion having amplitude of <b>0.76mm</b> ( <b>1.52mm</b> 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 <b>1</b> minute. This motion shall be applied for <b>2</b> hours in each of three mutually perpendicular directions. (EIA-364-28 Condition I)
<b>MECHANICAL</b>		

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Shock (Mechanical)	<b>0.1 <math>\mu</math>s Max.</b>	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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**ENVIRONMENTAL**

<b>Item</b>	<b>Requirement</b>	<b>Standard</b>
Resistance to <b>Wave</b> Soldering Heat	See Product Qualification and Test Sequence Group <b>9 (Lead Free)</b>	Solder Temp. : 265 $\pm$ 5 $^{\circ}$ C, 10 $\pm$ 0.5sec.
Resistance to <b>Reflow</b> Soldering Heat	See Product Qualification and Test Sequence Group <b>9 (Lead Free)</b>	Pre Heat : 150 $^{\circ}$ C~180 $^{\circ}$ C, 60~120sec. Heat : 230 $^{\circ}$ C Min., 40sec Min. Peak Temp. : 260 $^{\circ}$ C Max, 10sec Max. <b>Reflow number cycle: 2 times</b>
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 $^{\circ}$ C, 30 minutes +85 +3/-0 $^{\circ}$ C, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group <b>4</b>	Mated Connector 40 $^{\circ}$ 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<math>^{\circ}</math>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 $^{\circ}$ C <b>(I) Gold flash for 8 hours</b> <b>(II) Gold plating 5 <math>\mu</math>" for 96 hours.</b> (EIA-364-26)
Solder ability	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 <math>\pm</math>5<math>^{\circ}</math>C</b> , for <b>4-5 sec</b> . (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T $\geq$ 350 $^{\circ}$ C, 3sec at least.

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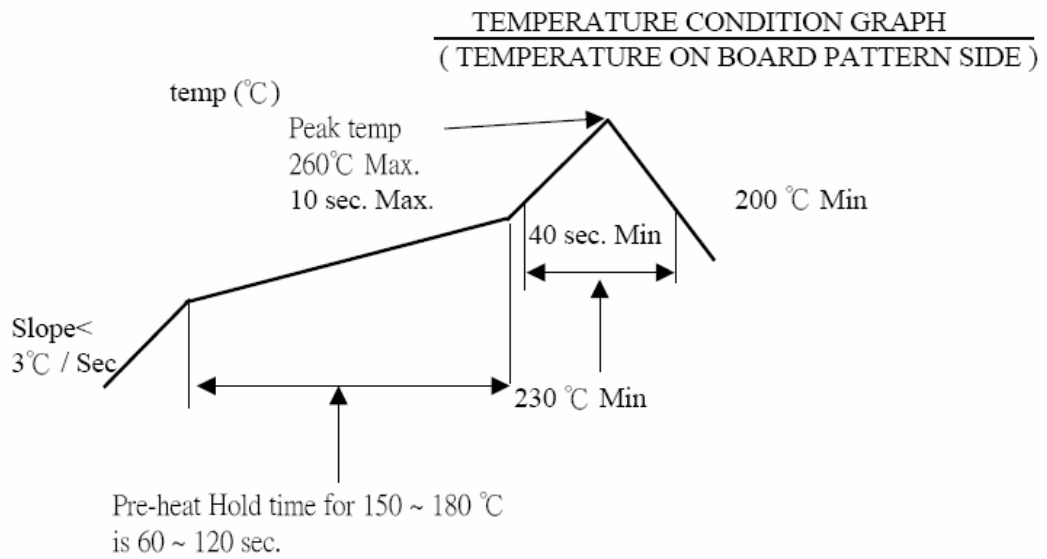
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**Note.** Flowing Mixed Gas shall be conducted by customer request.

## 6 INFRARED REFLOW CONDITION

6.1. Lead-free Process : DURATION = 2 TIMES



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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
	Test Sequence									
Examination of Product				1、7	1、6	1、4			1	1
Low-signal 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										
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	
Hand Soldering Temperature Resistance										2
Sample Size	4	4	4	4	4	2	4	4	4	4