

Aces P/N: **50910 series**

TITLE: **1.27/0.8 MM PITCH SAS CONN.**

RELEASE DATE: 2010.3.3

REVISION: O

ECN No: 1003027

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## 1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	ECN-1003027	Release	JASON	2010/3/3

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## 2 SCOPE

This specification covers performance, tests and quality requirements for **1.27/0.8 mm PITCH SAS 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: **30u"Min Glod plating on Contact Area, Matt Tin plating over all**  
(b) Under plate: **50u" Min Nickel-plated all over**

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

### 4.3 Ratings

- 4.3.1 Voltage: **30 Volts AC**  
4.3.2 Current: **1.5 Amperes**  
4.3.3 Operating Temperature: **0°C to +55°C**  
Non-Operating: **-40°C to +85°C**

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## 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>30 m Ω</b> Max.initial <b>15 m Ω</b> Max.change allowed.	Mate connectors, measure by dry circuit, <b>20mV</b> Max., <b>100mA</b> Max.(When manually operated,mating speed should be below 200 cycles per hour) (EIA-364-23)
Insulation Resistance	<b>1000 MΩ</b> Min.	Unmated connectors, apply <b>500 V</b> DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	<b>500 VAC</b> Min. at sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: <b>0.5 mA</b> max.	Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature Rise	<b>30°C</b> Max.Change allowed	1. Mate connector,measure the temperature rise at rated current after.1.5A minimum Power contact. 2. The temperature rise above ambient shall not exceed 85 °C . The ambient condition is still air at 25°C 3. Wire power pins P1,P2, P8 and P9 in parallel for power 4. Wire ground pins P4,P5, P6,P10 and P12 in parallel for return 5. Supply 6A total DC current to the power pins in parallel,returning from the parallel ground pins(P4,P5,P6,P10 and P12)
<b>MECHANICAL</b>		
Item	Requirement	Standard
Connector Insertion Force	<b>35N</b> Max.( <b>3.57</b> kg/f)	Operation speed: <b>25</b> mm/min. EIA-364-13)

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Connector Extraction Force	<b>5N</b> Min. ( <b>0.5</b> kg/f) [At Initial and after Durability]	Operation speed: <b>25</b> mm/min. (EIA-364-13)
Contact Retention Force	<b>2.5N</b> Min. ( <b>0.26</b> kg/f)	Operation speed: <b>5</b> mm/min. EIA-364-13)
Compliant Pin Insertion Force onto PCB(Per Pin)	<b>50N</b> Max. ( <b>5.1</b> kg/f)	Insert pin into application PCB hole at a maximum rate of <b>5</b> mm per minute.
Compliant Pin Retention Force onto PCB(Per Pin)	<b>5N</b> Min. ( <b>0.5</b> kg/f)	Apply axial pull out force on pin in PCB at a rate of <b>5</b> mm per minute.
Durability	<b>500</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>200 cycles per hour</b> . (EIA-364-09)
Vibration	<b>1 μs</b> 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)	<b>1 μs</b> Max.	Subject mated connectors to <b>30 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)

**ENVIRONMENTAL**

Item	Requirement	Standard
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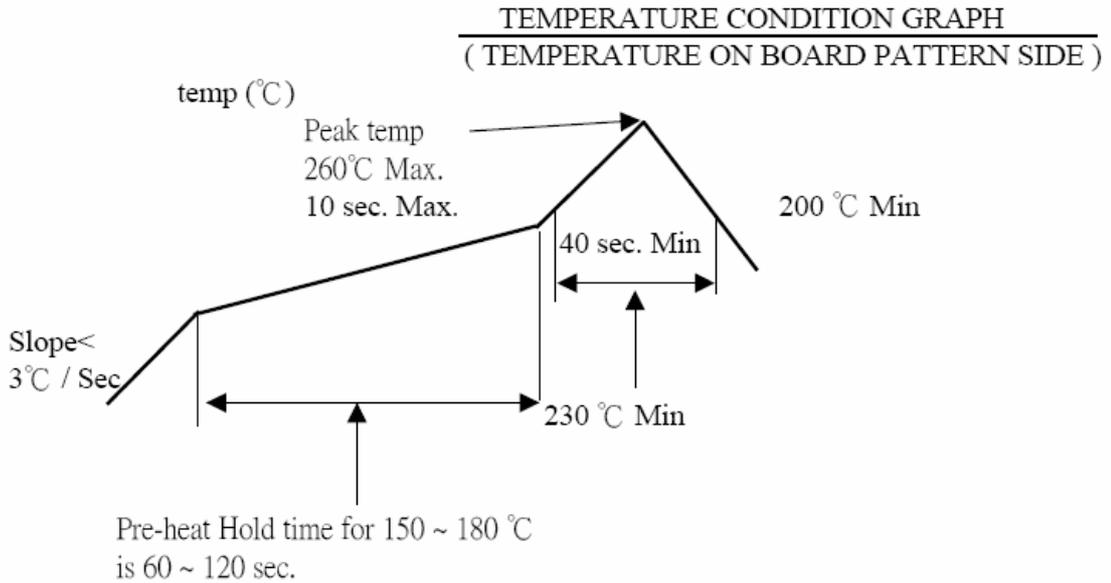
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Thermal Shock	See Product Qualification and Test Sequence Group 1	Mate module and subject to follow condition for <b>10</b> cycles. 1 cycles: <b>-55°C</b> , 30 minutes <b>+85°C</b> , 30 minutes (EIA-364-32, test condition A)
Temperature life	See Product Qualification and Test Sequence Group 2	Subject mated connectors to temperature life at <b>85°C</b> for <b>500 hours</b> . Measure Signal. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 3	Subject mated/unmated connectors to 5% salt-solution concentration, 35 °C for <b>48 hours</b> . (EIA-364-26, Test condition B)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector . <b>40°C</b> , <b>90~95%RH</b> , for <b>96 hours</b> Reefer to Method II. (EIA-364-31, Test condition A)
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 <b>230 ±5 °C</b> , for <b>10±1</b> sec using Type <b>R</b> flux. (EIA-364-52)
Resistance to <b>Reflow</b> Soldering Heat	See Product Qualification and Test Sequence Group <b>8 (Lead Free)</b>	Pre Heat : <b>150°C~180°C</b> , 60~90sec. Heat : <b>230°C</b> Min., 40sec Min. Peak Temp. : <b>260°C</b> Max, 10sec Max.

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

## 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	10
	Test Sequence									
Examination of Product	1、3	1、9	1、6	1、7	1、6	1、4	1、4	1、3		
Low-signal Level Contact Resistance		3、8	2、5	2、10	2、9		2、5			
Insulation Resistance				3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Temperature Rise	2									
Connector Insertion Forces		2、7								
Connector Extraction Forces		4、6								
Contact Retention Force										1
Compliant Pin Insertion Force onto PCB						2				
Compliant Pin Retention Force onto PCB						3				
Durability		5								
Vibration			3							
Shock (Mechanical)			4							
Thermal Shock				5						
Temperature life					5					
Salt Spray							3			
Humidity				6						
Solder ability									1	
Resistance to Hand Soldering Heat								2		
Sample Size	2	4	4	4	4	4	4	4	2	4

### 8 PRINTED CIRCUIT BOARD SPECIFICATION

Recommended Backplane PCB Thickness: 2.67~3.175mm minimum

