

SPEC. NO.: PS-50981-XXXXXX-XXX

REVISION: 0

PRODUCT NAME: 2.5 mm PITCH BATTERY CONN

PRODUCT NO: 50981-XXXXXX-XXX

PREPARED: CARL DATE: 2008/10/17	CHECKED: WARLES DATE: 2008/10/17	APPROVED: JASON DATE: 2008/10/20
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TITLE: **2.5 MM BATTERY CONN.**

RELEASE DATE: 2009/03/04

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Aces P/N: **50981 series**

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1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	ECN-0903028	產品 RELEASE	JASON	2009/03/06

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2 SCOPE

This specification covers performance, tests and quality requirements for [battery connector](#).

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: [Gold plated based on order information](#)
(b) Under plate: [Nickel-plated all over](#)
(c) Solder area: [Gold plated based on order information](#)
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.3 Ear: [Copper Alloy, Gold plated](#).

4.3 Ratings

- 4.3.1 Voltage: [50 Volts AC \(per pin\)](#)
- 4.3.2 Current: [1.5 Amperes \(per pin\)](#)
- 4.3.3 Operating Temperature : [-40°C to +80°C](#)

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.

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Item	Requirement	Standard
Low-signal Level Contact Resistance	50 m Ω Max.(initial)per contact ΔR 10 m Ω Max.	Mate connectors, measure by dry circuit, 20mV Max., 100mA 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	300 VAC Min. at sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: 1 mA max.	Test between adjacent contacts of unmated connectors. (EIA-364-20)

MECHANICAL

Durability	5000 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)
Normal Forces	90 Gram minimum.(Traveling of battery contact point =1.5mm)	Mate connector with a suitable gauge for each pin at rate of 25 mm/min. Measure force when gauge reaches surface of connector. MIL-STD-1344A, Method 2012.1
Terminal / Housing Retention Force	0.2kgf MIN.	Apply axial pull out force at the speed rate of 25.4 \pm 3 mm/minute. On the terminal assembled in the housing.
Fitting Nail /Housing Retention Force	0.3kgf MIN.	Apply axial pull out force at the speed rate of 25.4 \pm 3 mm/minute. On the fitting nail assembled in the housing.
Vibration	1 μ 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 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)

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MECHANICAL

Item	Requirement	Standard
Shock (Mechanical)	1 μ s 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

Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 9 (Lead Free)	Pre Heat : 150°C~180°C, 60~90sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 3	Mate module and subject to follow condition for 5 cycles. 1 cycles: -40 +0/-3 °C, 30 minutes +85 +3/-0 °C, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 3	Mated Connector 40°C, 90~95% RH, Reefer to Method II. (EIA-364-31, Test condition A)
Temperature life	See Product Qualification and Test Sequence Group 4	Subject mated connectors to temperature life at 85°C for 96 hours . Measure Signal. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C for 48 hours . (EIA-364-26, Test condition B)

ENVIRONMENTAL

Item	Requirement	Standard
Solder ability	Solder able area shall have minimum of 95% solder coverage.	And then into solder bath, Temperature at 255 ±5°C , for 4-5 sec. (EIA-364-52)

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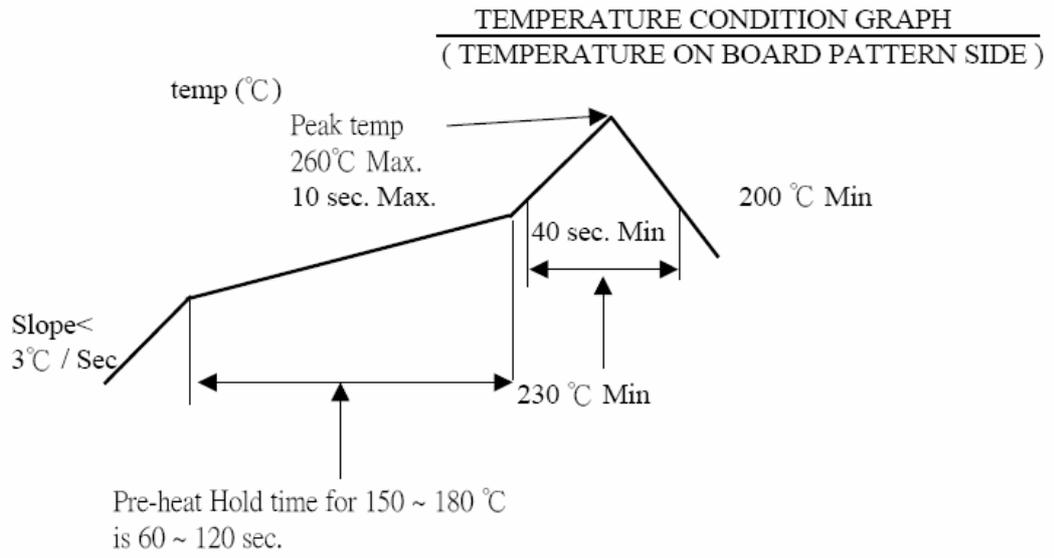
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6 INFRARED REFLOW CONDITION

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	10
	Test Sequence									
Examination of Product	1、7	1、6	1、7	1、4	1、3				1、3	
Low-signal Level Contact Resistance	2、6	2、5	2、10	2、5						
Insulation Resistance			3、9							
Dielectric Withstanding Voltage			4、8							
Normal Forces	3、5									
Durability	4									
Terminal / Housing Retention Force							1			
Fitting Nail /Housing Retention Force								1		
Vibration		3								
Shock (Mechanical)		4								
Thermal Shock			5							
Humidity			6							
Temperature life				3						
Salt Spray					2					
Solder ability						1				
Resistance to Soldering Heat									2	
Sample Size	4	4	4	4	4	2	4	4	4	

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NOTES:

AS SHOWN BELOW EXCESS FORCE DURING INSERTION MAY RESULT IN DAMAGE TO THE CONNECTOR PLEASE BE CAREFUL. ALSO, TO PREVENT CONNECTOR DAMAGE PLEASE CONFIRM THE CORRECT POSITION BEFORE MATING CONNECTORS.

