SPECIFICATION

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SPEC. NO.: PS-50978-XXXXX-XXX **REVISION:** O

PRODUCT NAME: 2.0mm BATTERY CONNECTOR

PRODUCT NO: 50978 seriese; 50979 seriese

PREPARED:	CHECKED:	APPROVED:
ANDREW	**CARL**	**JASON**
DATE: **2009/06/25**	DATE: **2009/06/25**	DATE: **2009/06/25**

1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	ECN-0906156	RELEASE	JASON	2009/06/25

2 SCOPE

This specification covers performance, tests and quality requirements for battery connector.
Refer to ACES P/N: 50979 seriese

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

4.3 Ratings

4.3.1 Voltage: 30 Volts DC
4.3.2 Current: DC 4.5 Amperes (2 pin)
DC 0.5 AMPERES (OTHER 6 pin)
4.3.3 Operating Temperature : -55℃ to +85℃

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.

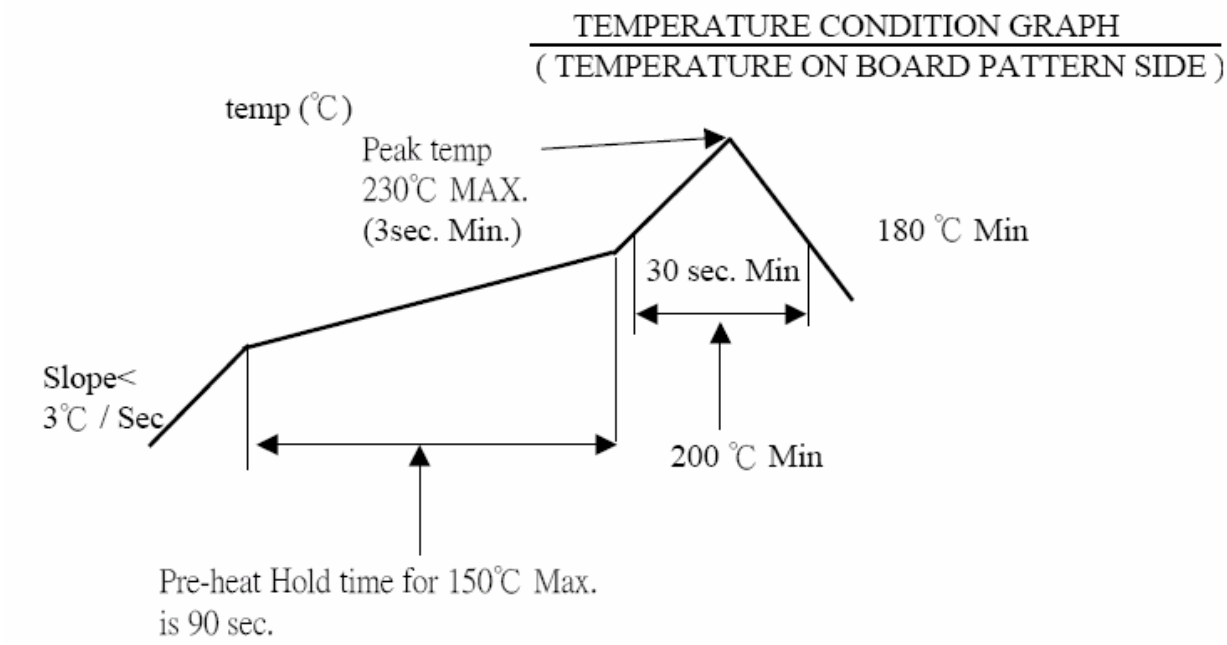
ELECTRICAL		
Item	**Requirement**	**Standard**
Low-signal Level Contact Resistance	20 m Ω Max.(initial)per contact △R 10 m Ω Max.	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	500 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	650V AC 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)
Temperature rise	30℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current after:4.5 A/Power contact. The temperature rise above ambient shall not exceed 30℃ The ambient condition is still air at 25℃ (EIA-364-70 METHOD 2)
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 ± 3 mm/min,Speed 600~1000 cycles/1hour (EIA-364-09)
Mating / Unmating Forces	Mating Force: 15.7N Max. Unmating Force: 1.57N Min.	Operation Speed： 25.4 ± 3 mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)
Terminal / Housing Retention Force	0.30kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Vibration	1 μs 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)

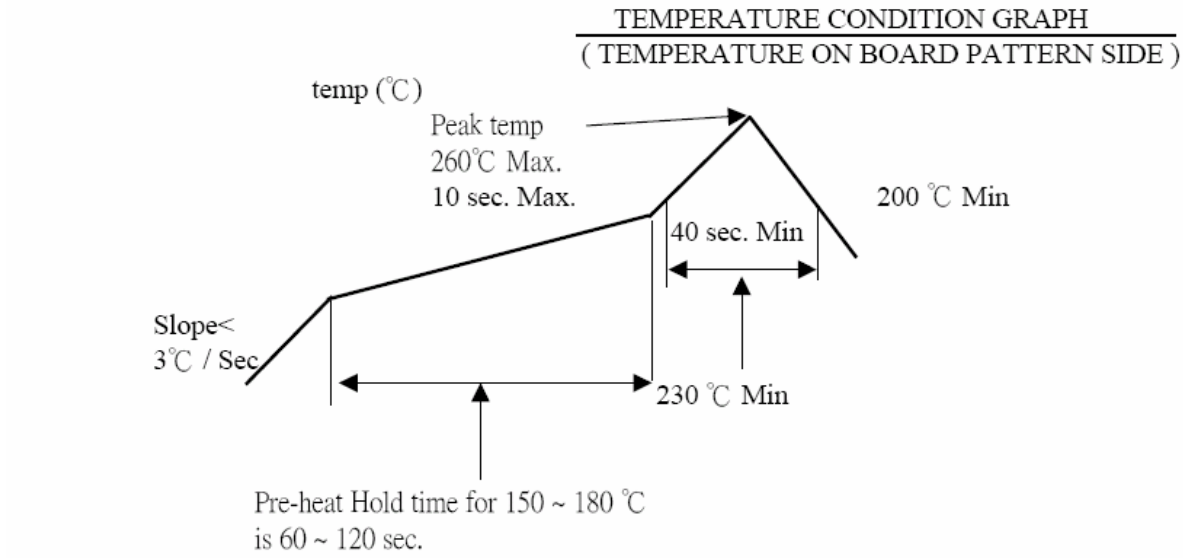
Shock (Mechanical)	1 μs Max.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)
ENVIRONMENTAL		
Hand Solder Ability	See Product Qualification and Test Sequence Group 6	Soldering iron：350℃±10℃ Duration:3~4sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 3	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 3	Mated Connector 40℃, 90~95% RH, 96Hour. 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℃ 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℃ for 48 hours. (EIA-364-26,Test condition B)
Solder ability	Solder able area shall have minimum of 95% solder coverage	And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)

6 INFRARED REFLOW CONDITION

6.1. General Process



6.2. Lead-free Process



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	1,3	
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						
Mating / Unmating Forces	2、4									
Temperature rise									2	
Durability	3									
Contact Retention Force							1			
Vibration(Random) / Vibration		2								
Shock (Mechanical)		3								
Thermal Shock			5							
Humidity			6							
Temperature life				5						
Salt Spray					3					
Solder ability						1				
Resistance to Soldering Heat								2		
Sample Size	4	4	4	4	4	2	4	4	2	