SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Jhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808
FAX: +886-3-463-1800

SPEC. NO.: PS-50911-XXXXX-XXX **REVISION:** A

PRODUCT NAME: SAS CONNECTOR RCPT S/T HYBRID TYPE

PRODUCT NO: 50911 ; 51890 SERIES

PREPARED:	CHECKED:	APPROVED:
XIAOXIONG	**CARL**	**JASON**
DATE: **2010/7/30**	DATE: **2010/7/30**	DATE: **2010/7/30**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-1003132	RELEASE	JASON	2010/3/30
A	ECN-1207217	ADD 51890 SERIES	XIAOXIONG	2012/7/30

2 SCOPE

This specification covers performance, tests and quality requirements for SAS connector.
Refer to ACES P/N: 50911 ; 51890 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
Plated: (a) Finish: See Order Information.
(b) Under plate: Nickel-plated all over.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.3 Fitting nail: High performance copper alloy
Plated: (a) Finish: See Order Information.
(b) Under plate: Nickel-plated all over.

4.3 Ratings

4.3.1 Voltage: 30 Volts DC
4.3.2 Current: 1.5 Amperes per pin
4.3.3 Operating Temperature : 0℃ to +55℃
Non-Operating Temperature : -40℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

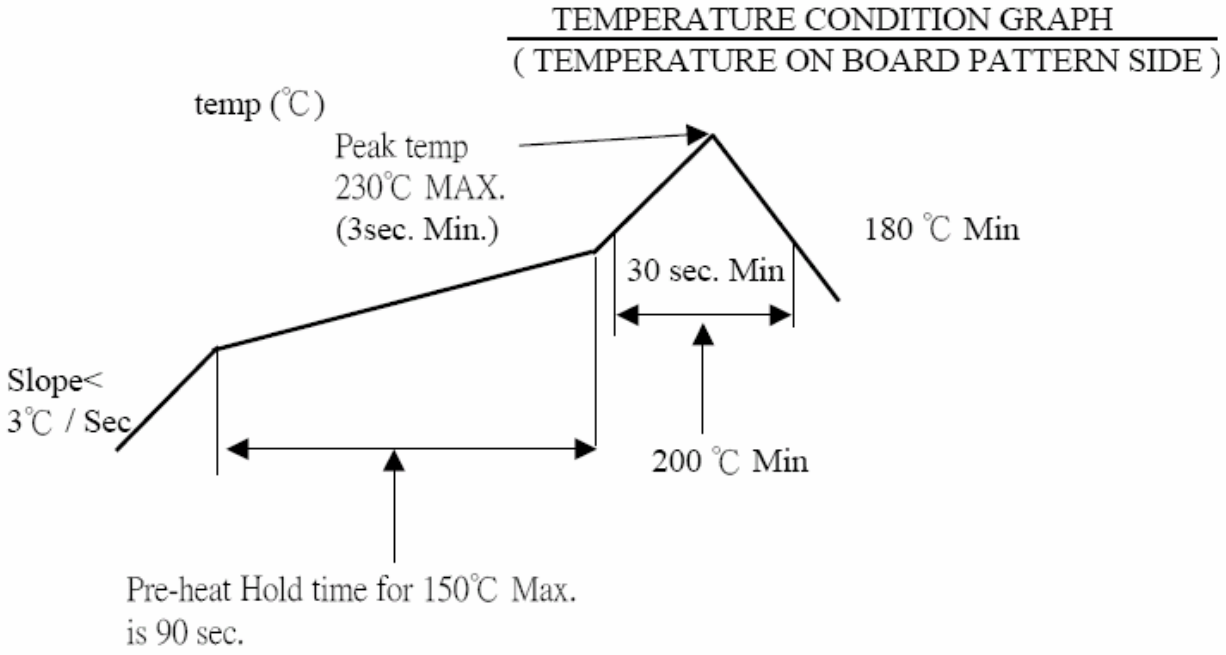
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low-signal Level Contact Resistance	30 m Ω Max.(initial)per contact 15 m Ω Max. Change allowed	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	1000 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 0.5 m A max.	500 VAC Min. at sea level for 1 minute.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:1.5 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	500 cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 10 ± 3 mm/min, (200 cycles per hour max.) (EIA-364-09)
Mating / Un-mating Forces	Mating Force: 25N (2.55kgf) Max. Un-mating Force: 5N (0.5kgf) Min.	Operation Speed: 25.4 ± 3 mm/minute.. Measure the force required to mate/Un-mate connector. (EIA-364-13)
Terminal / Housing Retention Force	1.96N(0.2kgf) Min.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Fitting nail / Housing Retention Force	1.96N(0.2kgf) Min.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.
Vibration	1 μ s Max.	The electrical load condition shall

		be 100 m A 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)

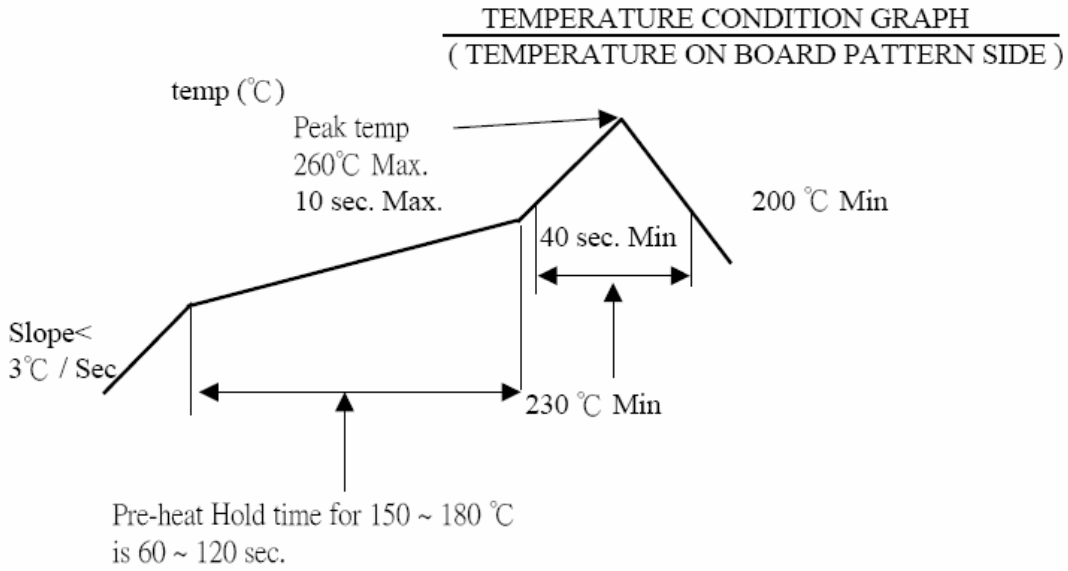
Shock (Mechanical)	1 μs Max.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks).The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition H)
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 10 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 500 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 48hours. (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 4-5sec. (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、7	1、6	1、4			1、3	1、3	
Low-signal Level Contact Resistance	2、6	2、5	2、10	2、9	2、5					
Insulation Resistance			3、9	3、8						
Dielectric Withstanding Voltage			4、8	4、7						
Mating / Unmating Forces	3、5									
Temperature rise									2	
Durability	4									
Contact Retention Force							1			
Vibration(Random) / Vibration		3								
Shock (Mechanical)		4								
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	