SPECIFICATION

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SPEC. NO.: PS-50912-XXXXX-XXX **REVISION:** B

PRODUCT NAME: SAS CONN. RCPT. S/T. SMT TYPE

PRODUCT NO: 50912 SERIES ; 51898 SERIES ;

PREPARED:	CHECKED:	APPROVED:
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DATE: **2018/07/11**	DATE: **2018/07/11**	DATE: **2018/07/11**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1103018	NEW SPEC	HUANTY	2011/03/12
O	ECN-1107001	MODIFY TERMINAL & FITTING NAIL RETENTION FORCE	HUANTY	2011/07/01
O1	ECN-1108100	ADD MATED CONNECTOR DIFFERENTIAL IMPEDANCE TEST	HUANTY	2011/08/03
A	ECN-1109263	FOR ECR-1108004 RELEASE	HUANTY	2011/9/24
B	ECN-1807154	ADD 51898 SERIES	Tang,En Hui	2018/07/11

2 SCOPE

This specification covers performance, tests and quality requirements for SAS connector.
Refer to ACES P/N: 50912 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 (Phosphor Bronze)
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.
(c) Solder area: Refer to the drawing.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.3 Fitting nail: High performance copper alloy
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.

4.3 Ratings

4.3.1 Voltage: 30 Volts DC (per pin)
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

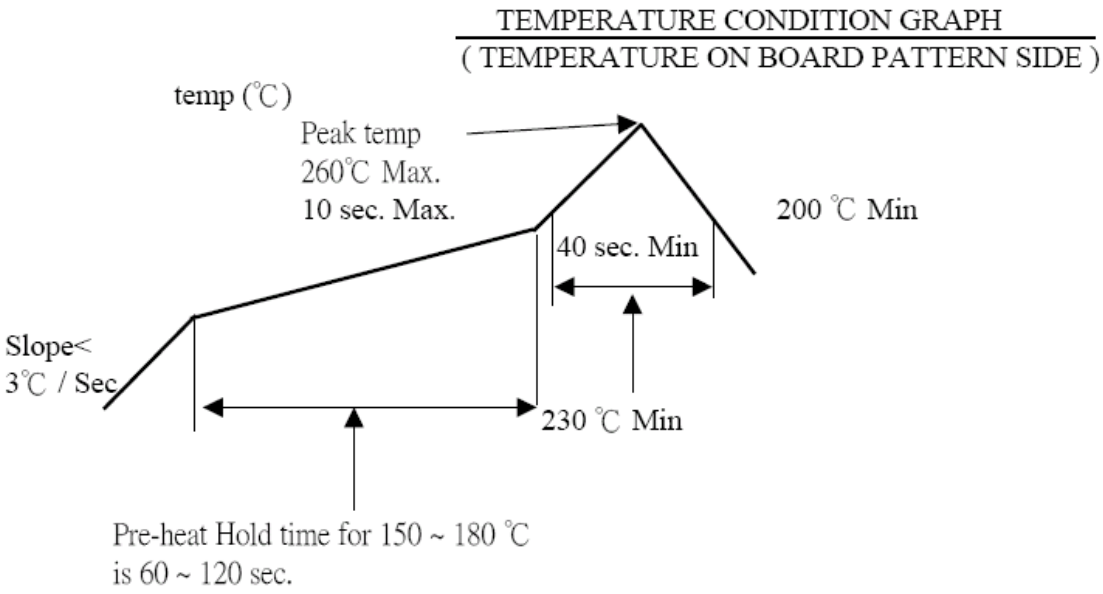
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	30 m Ω Max.(initial)per contact 15 m Ω Max.(after test) 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)
Mated connector Differential Impedance	100 Ω ±15%	1. Set the Time Domain Reflectometer (TDR) pulse in differential mode with a positive going (V+) and a negative going pulse (V-). Define a reflected differential trace: Vdiff=V+ - V- 2. With the TDR connected to the rise time reference trace, verify an input rise time to 70ps (20%-80%) as practical. 3. Measure and record the maximum and minimum values of the near end connector differential impedance.
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 0.5 m A max.	500V AC 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 until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)
MECHANICAL		
Item	**Requirement**	**Standard**
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 25.4 ± 3 mm/min, (200 cycles per hour max.) (EIA-364-09)

Item	Requirement	Standard
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	3.43N(0.35kgf) 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	3.1N(0.3kgf) MIN.	Operation Speed： 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
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 A)
ENVIRONMENTAL		
Item	**Requirement**	**Standard**
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test Sequence Group 9 **(Lead Free)**	Pre Heat：150℃~180℃, 60~120sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃Max, 10sec Max.

Item	Requirement	Standard
Thermal Shock	See Product Qualification and Test Sequence Group 4	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 I)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ for 96 hours. (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (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 245 ±5℃, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T≧350℃, 3sec at least.

Note. Flowing Mixed Gas shell be conduct by customer request.

6 INFRARED REFLOW CONDITION



7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence										
Examination of Product				1、7	1、6	1、4			1	1	1
Low 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									
Vibration			2								
Shock (Mechanical)			3								
Thermal Shock				5							
Humidity				6							
Temperature life					5						
Salt Spray(Only For Gold Plating)						3					
Solder ability							1				
Mated connector Differential Impedance											2
Terminal / Housing Retention Force							1				
Fitting Nail /Housing Retention Force								2			
Resistance to Soldering Heat									2		
Hand Soldering Temperature Resistance										2	
Sample Size	2	4	4	4	4	4	2	4	4	4	4