SPECIFICATION

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SPEC. NO.: PS-50698-XXXXX-XXX **REVISION:** C

PRODUCT NAME: 1.0mm PITCH EASYON FPC/FFC CONN.

SMT R/A D/C TYPE.

PRODUCT NO: 50698-XXXXX-XXX

PREPARED:	CHECKED:	APPROVED:
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DATE: 2016/09/27	DATE: 2016/09/27	DATE: 2016/09/27

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1101022	NEW SPEC	HUANTY	2011/01/15
2	ECN-1103002	MODIFY TERMINAL RETENTION FORCE	HUANTY	2011/03/01
O	ECN-1104183	RELEASE	HUANTY	2011/04/25
A	ECN-1311200	RELEASE	XIAOXIONG	2013/11/07
B	ECN-1401110	ADD Working voltage	YANGYANG	2014/01/09
C	ECN-1706220	APD1050246 CHANGE Durability and RETENTION FORCE	XIAOXIONG	2016/09/27

2 SCOPE

This specification covers performance, tests and quality requirements for FPC 1.0mm pitch SMT R/A Easy on H=2.45 connector.

Aces' P/N: 50698-XXXXX-XXX

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 Terminal: 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 Actuator: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.4 Fitting Nail: Copper Alloy.
Finish: (a) Under plate : Refer to the drawing.
(b) Solder area : Refer to the drawing.

4.3 Ratings

4.3.1 Working voltage less than 36 volts AC (per pin)
4.3.2 Voltage: 50 Volts AC (per pin)
4.3.3 Current: 1.0 Amperes (per pin)
4.3.4 Operating Temperature : -40℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

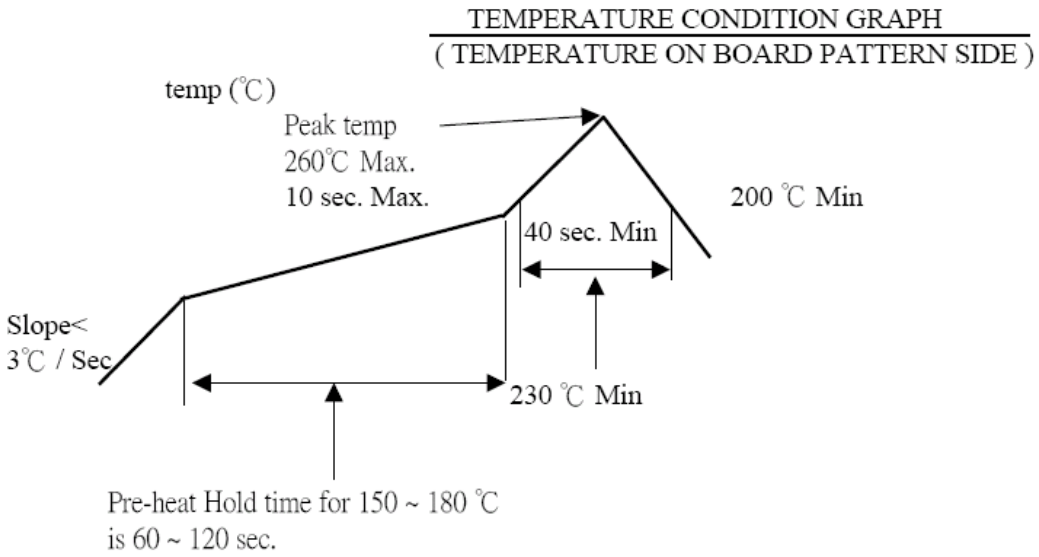
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	55 m Ω Max.(initial)per contact 20 m Ω Max(after test)	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	No discharge, flashover or breakdown. Current leakage: 1 mA max.	300 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 until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)

MECHANICAL		
Item	**Requirement**	**Standard**
Durability	20 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 ± 3mm/min. (EIA-364-09)
FPC/FFC Retention Force	Refer to item 8 FPC/FFC retention force	Insert the actuator, pull the FPC at the speed rate of 25.4± 3 mm/min for 20 cycles.
Terminal / Housing Retention Force	0.08 kgf 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	0.15 kgf MIN.	Operation Speed : 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
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		
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. Cycles：2 times
Thermal Shock	See Product Qualification and Test Sequence Group 4	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 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
	Test Sequence									
Examination of Product				1、7	1、6	1、4			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									
FPC Retention Force		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			
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

8 FPC/FFC RETENTION FORCE

UNIT:kgf

No. of CKT	Retention Force (MIN.)	
	1 st	20 th
04	0.1	0.1
30	0.5	0.5
32	0.5	0.5

Note:FPC without hook