



SPECIFICATION

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SPEC. NO.: PS-50661-XXXXX-XXX REVISION: B

PRODUCT NAME: 1.0 mm PITCH NON-ZIF FPC CONN. SMT TYPE

PRODUCT NO: 50661 SERIES

PREPARED: YANGYANG DATE: 2014/01/09	CHECKED: JERRY DATE: 2014/01/09	APPROVED: JASON DATE: 2014/01/09
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TITLE: 1.0 mm PITCH NON-ZIF FPC CONN. SMT TYPE

RELEASE DATE: 2014/01/09

REVISION: B

ECN No: ECN-1401107

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812063	RELEASE	WEILIANG	2008.11.13
A	ECN-1105215	ADD FPC RETENTION FORCE	TYX	2011.05.12
B	ECN-1401107	ADD Working voltage	YANGYANG	2014/01/09

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2 SCOPE

This specification covers performance, tests and quality requirements for 0.5mm Pitch NON-ZIF FPC Connector. These connectors are used to hold graphic card in DSC.

Aces's P/N : 50661-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 Contact: High performance copper alloy.
Finish: Plating pls. See the product drawing.
- 4.2.2 Housing: Thermoplastic High Temp., UL94V-0

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: 0.5 Amperes (per pin)
- 4.3.4 Operating Temperature : -20°C to +85°C

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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	40m Ω Max.(initial)per contact 20 m Ω Max. Change allowed(After test)	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	100 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.	250 VAC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30°C Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25°C (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 \pm 3mm/min. (EIA-364-09)
Contact Retention Force	0.5 kgf Min.	Operation Speed : 25.4 \pm 3 mm/minute. Measure the contact retention force with Tensile strength tester.



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FPC Retention Force	Refer to page.9 FPC retention force	Insert the FPC. Pull the FPC at the speed rate of 25.4 ± 3 mm/min.
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

Item	Requirement	Standard
Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 9 (Lead Free)	Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 4	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 4	Mated Connector 40°C, 90~95% RH, 96 hours. (EIA-364-31, Condition A, Method II)

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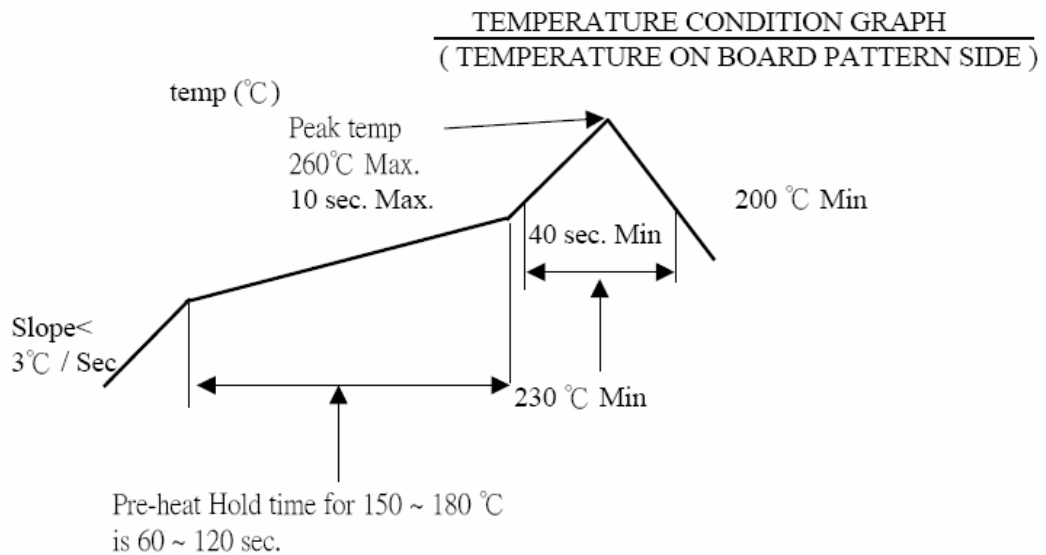
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Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85°C for 96 hours. (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (EIA-364-26)
Solder ability	Solder able area shall have minimum of 95% solder coverage.	And then into solder bath, Temperature at 245 ±5°C, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T ≥ 350°C, 3sec at least.

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

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、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									
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			
FPC Retention Force		2、4								
Terminal / Housing Retention Force								1		
Resistance to Soldering Heat									2	
Hand Soldering Temperature Resistance										2
Sample Size	2	4	4	4	4	4	2	4	4	4

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8 FPC RETENTION FORCE

NO. OF Ckt.	FPC Retention Force (Min)
3	0.060Kgf
4	0.080Kgf
5	0.100Kgf
6	0.120Kgf
7	0.140Kgf
8	0.160Kgf
9	0.180Kgf
10	0.200Kgf
11	0.220Kgf
12	0.240Kgf
13	0.260Kgf
14	0.280Kgf
15	0.300Kgf
16	0.320Kgf
17	0.340Kgf
18	0.360Kgf
19	0.380Kgf
20	0.400Kgf
21	0.420Kgf
22	0.440Kgf
23	0.460Kgf
24	0.480Kgf
25	0.500Kgf
26	0.520Kgf
27	0.540Kgf
28	0.560Kgf