SPECIFICATION

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SPEC. NO.: PS-50652-XXXX **REVISION:** O

PRODUCT NAME: 1.0mm NON-ZIF FPC CONN. T/H R/A TYPE

PRODUCT NO: 50652series: 50657 series

PREPARED:	CHECKED:	APPROVED:
WEILIANG	WGCH	Jason
DATE: 2008.11.18	DATE: 2008.11.18	DATE: 2008.11.18

1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
1	ECN-0812063	新規範	Jason	2008.11.18

2 SCOPE

This specification covers performance, tests and quality requirements for 1.0mm NON-ZIF FPC CONN. T/H R/A TYPE .These connectors are used to hold graphic card in computer.

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 (Phosphor Bronze)
Finish:PLS SEE P/N

4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.3 Ratings

4.3.1 Voltage: 50 Volts AC (rma)/DC
4.3.2 Current: 0.5 Amperes AC (rma)/DC
4.3.3 Operating Temperature : -25℃ to +80℃

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.

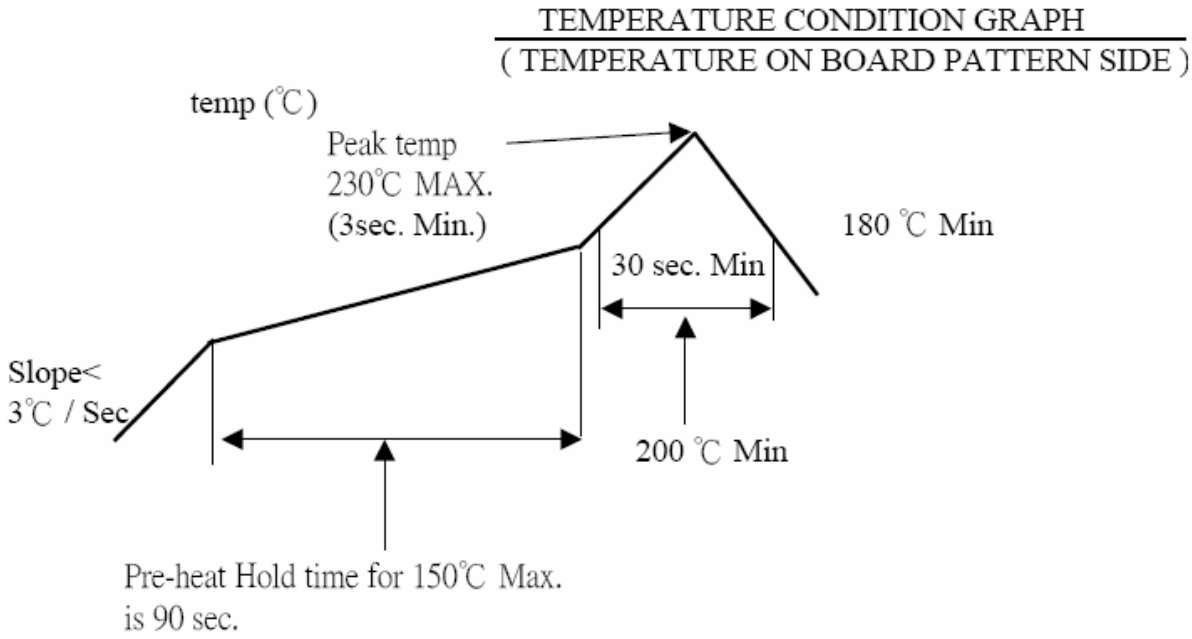
ELECTRICAL		
Item	**Requirement**	**Standard**
Low-signal Level Contact Resistance	55 m Ω Max.(initial)per contact 20 m Ω Max. Change allowed	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	100 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	500 VAC 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:0.5 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	10 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 Retention Force	Refer to FPC withdrawal force	Insert the actuator, pull the FPC at the speed rate of 25.4 ± 3 mm/min.
Terminal / Housing Retention Force	0.45kgf 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)

Item	Requirement	Standard
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 **Wave** Soldering Heat	See Product Qualification and Test Sequence Group 4 **(Lead Free)**	Solder Temp.：265±5℃, 10±0.5sec.
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test Sequence Group 4 **(Lead Free)**	Pre Heat：150℃~180℃, 60~90sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃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 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, Reefer to Method II. (EIA-364-31, Test condition A)
Temperature life	See Product Qualification and Test Sequence Group 5	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 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ for 8 hours. (EIA-364-26,Test condition B)
Solder ability	Solder able area shall have minimum of 95% solder coverage.	Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)

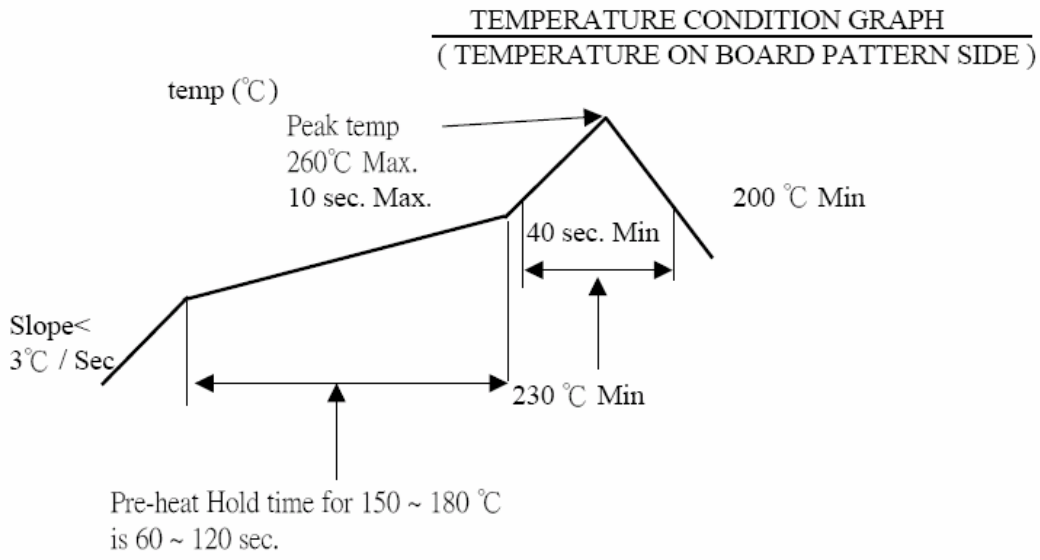
Note. Flowing Mixed Gas shell be conduct by customer request.

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		1、7	1、6	1、4				
Low-signal Level Contact Resistance		2、8	1、4	2、10	2、9	2、5				
Insulation Resistance		3、7		3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Temperature rise	1									
Durability		5								
Vibration			2							
Shock (Mechanical)			3							
Thermal Shock				5						
Humidity				6						
Temperature life					5					
Salt Spray						3				
Solder ability							1			
FPC Retention Force		4、6								
Terminal / Housing Retention Force								1		
Sample Size	2	4	4	4	4	4	2	4		

FPC INSERTION FORCE OF WITHDRAWAL FORCE

NO. of Ckt.	UNIT	Insertion Force (MAX)			Withdrawal Force (Min)		
		1Cycle	6Cycles	10Cycles	1Cycle	6Cycles	10Cycles
4	kgf	1.15	1.45	1.45	0.24	0.23	0.23
5	kgf	1.30	1.60	1.60	0.25	0.24	0.24
6	kgf	1.45	1.75	1.75	0.26	0.25	0.25
7	kgf	1.60	1.90	1.90	0.27	0.26	0.26
8	kgf	1.75	2.05	2.05	0.28	0.27	0.27
9	kgf	1.90	2.20	2.20	0.29	0.28	0.28
10	kgf	2.05	2.35	2.35	0.34	0.33	0.33
11	kgf	2.20	2.50	2.50	0.35	0.34	0.34
12	kgf	2.35	2.65	2.65	0.36	0.35	0.35
13	kgf	2.50	2.80	2.80	0.37	0.36	0.36
14	kgf	2.65	2.95	2.95	0.38	0.37	0.37
15	kgf	2.80	3.10	3.10	0.39	0.38	0.38
16	kgf	2.95	3.25	3.25	0.40	0.39	0.39
17	kgf	3.10	3.40	3.40	0.41	0.40	0.40
18	kgf	3.25	3.55	3.55	0.42	0.41	0.41
19	kgf	3.40	3.70	3.70	0.43	0.42	0.42
20	kgf	3.55	3.85	3.85	0.44	0.43	0.43
21	kgf	3.70	4.00	4.00	0.45	0.44	0.44
22	kgf	3.85	4.15	4.15	0.46	0.45	0.45
23	kgf	4.00	4.30	4.30	0.47	0.46	0.46
24	kgf	4.15	4.45	4.45	0.48	0.47	0.47
25	kgf	4.30	4.60	4.60	0.49	0.48	0.48
26	kgf	4.45	4.75	4.75	0.50	0.49	0.49
27	kgf	4.60	4.90	4.90	0.51	0.50	0.50
28	kgf	4.75	5.05	5.05	0.52	0.51	0.51
29	kgf	4.90	5.20	5.20	0.53	0.52	0.52
30	kgf	5.05	5.35	5.35	0.54	0.53	0.53