SPECIFICATION

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SPEC. NO.: PS-50246-XXXXX-XXX **REVISION:** F

PRODUCT NAME: 1.00 mm pitch SMT Wire to Board Dual Row Connector

PRODUCT NO: 50246 Series；50223Series；50218Series；51384Series；51385Series；51404 Series ;51246 Series

PREPARED:	CHECKED:	APPROVED:
LuTaoTao	XuZhiYong	XuZhiYong
DATE: 2020.11.06	DATE: 2020.11.06	DATE: 2020.11.06

1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	ECN-0812248	NEW SPEC	Jason	2008.10.21
A	ECN-1401156	ADD WORKING VOLTAGE	XUFEI	2014.01.09
B	ECN-1412193	ADD 18PIN Mating / Unmating FORCE	XUBIN	2014.12.16
C	ECN-1809057	ADD 51384&51385 Series	Chai,YunHe	2018.09.05
D	ECN-1901097	ADD 51404 Series	ZHANG HAO	2019.01.07
E	ECN-2007358	ADD Salt Spray	SUNYAJIE	2020.05.27
F	ECN-000291	ADD 51246 Series	LuTaoTao	2020.11.06

2 SCOPE

This specification covers performance, tests and quality requirements for 1.00mm pitch wire to board connector.

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: Pls see Part Number
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0.
4.2.3 Nut or Ear: Copper Alloy.

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 50 Volts AC (per pin)
4.3.3 Current: 1 Amperes (per pin)
4.3.4 Operating Temperature : -25℃ 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	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	500 M Ω Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	300 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:1 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		
Item	**Requirement**	**Standard**
Durability	50 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)
Mating / Unmating Forces	Mating Force: SEE ITEM 8 Unmating Force: SEE ITEM 8	Operation Speed：25.4 ± 3 mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)
Contact Retention Force	300gf Min.	Operation Speed：25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.

Terminal / Housing Retention Force	0.15kgf 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	0.1kgf 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 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

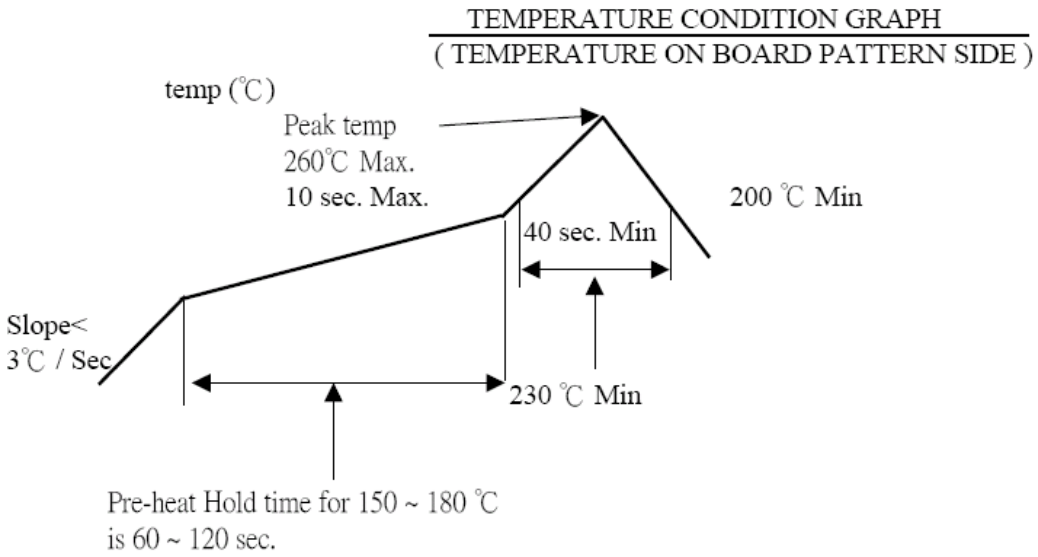
Item	Requirement	Standard
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test Sequence Group 10 **(Lead Free)**	Pre Heat：150℃~180℃, 60~90sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 10 cycles. 1 cycles: -25 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-27, test condition A)

Humidity- Temperature Cycle	See Product Qualification and Test Sequence Group 4	Mated Connector 25~65℃, 90~95% RH, 10 Cycles Reefer to Method IV. (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 (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 5u" and over 5u" for 96 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 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	9	10
	Test Sequence								
Examination of Product				1、7	1、6	1、4			1、3
Low-signal Level Contact Resistance		1、5	1、4	2、10	2、9	2、5			
Insulation Resistance				3、9	3、8				
Dielectric Withstanding Voltage				4、8	4、7				
Temperature rise	1								
Mating / Unmating Forces		2、4							
Durability		3							
Contact Retention Force									4
Vibration(Random) / Vibration			2						
Shock (Mechanical)			3						
Thermal Shock				5					
Humidity				6					
Temperature life					5				
Salt Spray						3			
Solder ability							1		
Terminal / Housing Retention Force								1	
Fitting Nail /Housing Retention Force								2	
Resistance to Soldering Heat									2
Sample Size	2	4	4	4	4	4	2	4	4

8 Mating / Unmating FORCE

Unit: N/kgf

NO. OF Ckt.	INSERTION FORCE (MAX)	EXTRATION FORCE (Min)	
		INITIAL	50 th
10	20 / 2.04	4 / 0.41	3 / 0.31
18~20	40 / 4.10	6 / 0.61	5 / 0.51
24	44 / 4.48	6.4/0.65	5.4/0.55
30	50 / 5.10	7 / 0.71	6 / 0.61
40	60 / 6.12	8 / 0.82	7 / 0.71
50	70 / 7.14	9 / 0.92	8 / 0.82
60	80 / 8.16	10 / 1.02	9 / 0.92