SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Jhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808
FAX: +886-3-463-1800

SPEC. NO.: PS-51646-XXXXX-XXX **REVISION:** O

PRODUCT NAME: 0.8 mm PITCH ZIF FPC CONN. SMT R/A T/C TYPE

PRODUCT NO: 51646 SERIES

PREPARED	CHECKED:	APPROVED:
LI JIN	BRAVE	FRANK
DATE: 2015/03/17	DATE: 2015/03/17	DATE: 2015/03/17

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1409137	NEW SPEC	LI JIN	2014/09/10
2	ECN-1410399	Modify the Actuator output pull (1.0->0.5)	LI JIN	2015/01/05
O	ECN-1503228	結案發行	LI JIN	2015/03/17

2 SCOPE

This specification covers performance, tests and quality requirements for 0.8 mm pitch FPC Connector SMT R/A TYPE.

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 Actuator: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.4 Fitting Nail: Copper Alloy, Finish: Refer to the drawing.

4.3 Ratings

4.3.1 Voltage: 50 Volts AC(per pin)
4.3.2 Working voltage less than 36 volts (per pin)
4.3.3 Current: 0.5 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		
Low Level Contact Resistance	20 m Ω Max. (initial) per contact △R 10 m Ω Max.	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	30 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)
Actuator Insertion / Withdrawing Force	Refer to page.9 Actuator insertion/withdrawing force	A connector shall be soldered on a board and inserted and withdrawing at the speed rate of 25.4 ± 3 mm/min.
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	0.15kgf 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 μ s 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 μ s 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 DC 100mA maximum for all contacts. (EIA-364-27, test condition A)

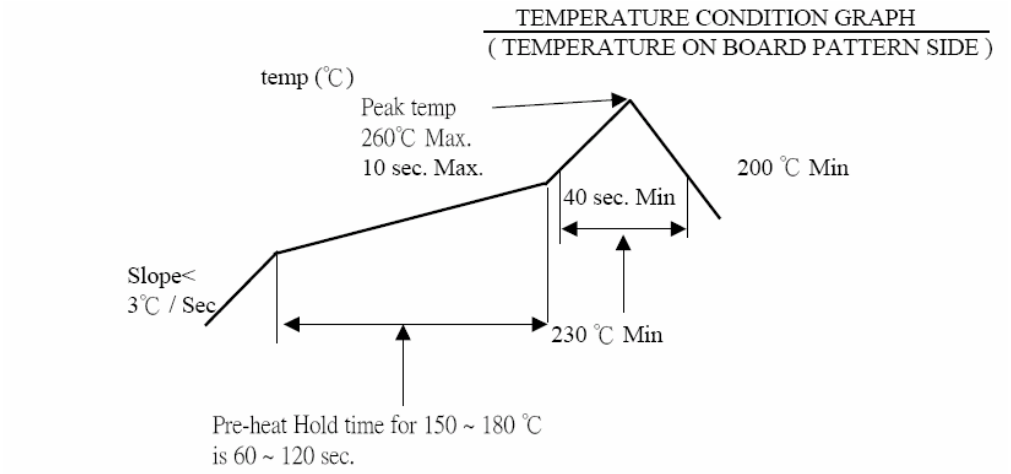
ENVIRONMENTAL

Item	Requirement	Standard
Hand Soldering Temperature Resistance	Appearance: No damage and Test Sequence Group 10 **(Lead Free)**	≧350℃, 3sec at least.
Resistance to Reflow Soldering Heat	Second Reflow process must be taken after the product temperature has down to room condition. 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. Reflow number cycle：2 times (EIA-364-56)

Thermal Shock	See Product Qualification and Test Sequence Group 3	Mate module and subject to follow condition for 5 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 3	Mated Connector 40℃,90~95% RH, 96 hours (EIA-364-31,condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group 4	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 5	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	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 1. 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、6		1、3	1
Low Level Contact Resistance		1、4	2、10	2、9	2、5		2、7		4	
Insulation Resistance			3、9	3、8						
Dielectric Withstanding Voltage			4、8	4、7						
Temperature Rise	1									
Durability							4			
Vibration		2								
Shock (Mechanical)		3								
Thermal Shock			5							
Humidity			6							
Temperature Life				5						
Salt Spray(Only For Gold Plating)					3					
Solder ability						1				
Actuator Insertion / Withdrawing Force							3、5			
Terminal / Housing Retention Force								1		
Fitting Nail /Housing Retention Force								2		
Resistance to Reflow Soldering Heat									2	
Hand Soldering Temperature Resistance										2
Sample Size	2	4	4	4	4	2	4	4	4	4

8 ACTUATOR INSERTION/WITHDRAWAL FORCE

UNIT: Kgf

NO. OF Ckt.	Insertion Force (Max)	Withdrawal Force (Min)
30	1.6	0.5