



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., Zhongli City,

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

TEL: +886-3-463-2808

FAX: +886-3-463-1800

SPEC. NO.: PS-50517-XXXXX **REVISION:** 0

PRODUCT NAME: 0.4 mm PITCH ZIF FPC CONN.

SMT R/A EASY ON CONTACT

PRODUCT NO: 50517-XXXXX SERIES

PREPARED: Xufei DATE: 2014/01/14	CHECKED: Jerry DATE: 2014/01/14	APPROVED: Jason.Chen DATE: 2014/01/14
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TITLE: FPC 0.4 PITCH EASY ON H1.2 TYPE

RELEASE DATE: 2014/01/14

REVISION: 0

ECN No: ECN-1401251

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Aces P/N: **50517-XXXXX series**

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-0810050	NEW PRODUCT	Stanley	2008.10.08
0	ECN-1401251	ADD WORKING VOLTAGE	XUFEI	2014.01.14

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2 SCOPE

This specification covers performance, tests and quality requirements for FPC 0.4 pitch SMT R/A Easy on H1.2 connector.

ACES Part/Number :
50517-XXXXX

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) Gold flash plated overall
(b) Under plate: Nickel plated overall

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 Hook: Copper Alloy.

Finish: Nickel plated all over

4.2.5 Fitting Nail: Copper Alloy.

Finish: (a) Solder Area: Tin-Lead plated.
(b) Under plate: Nickel plated overall

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)

4.3.2 Voltage: 40 Volts AC (per pin)

4.3.3 Current: DC 0.4 Amperes (per pin)

4.3.4 Operating Temperature : -40°C to +80°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
Contact Resistance	100 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	120 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°C 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°C The ambient condition is still air at 25°C (EIA-364-70 METHOD 2)

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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)
Terminal / Housing Retention Force	100 gf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Hook/Housing Retention Force	100 gf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.
Fitting Nail /Housing Retention Force	100 gf 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)

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ENVIRONMENTAL

Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 10 (Lead Free)	Pre Heat : 150°C~180°C, 60~90sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max. Cycles : 2
Resistance to Manual Soldering Heat	No deformation of components affecting performance.	350c±5c for 5 seconds
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, 240HR Refer 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°C 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°C for 48 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°C, for 4-5 sec. (EIA-364-52)

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

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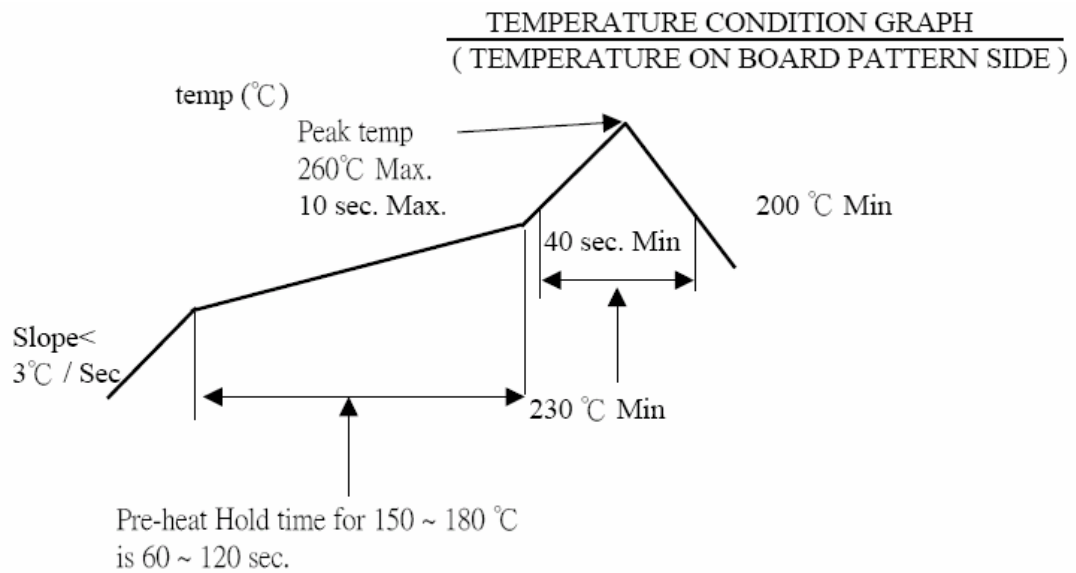
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6 INFRARED REFLOW CONDITION

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	
Low-signal 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						3				
Solder ability							1			
Terminal / Housing Retention Force								1		
Hook /Housing Retention Force								2		
Fitting Nail /Housing Retention Force								3		
Resistance to Soldering Heat									2	
Sample Size	2	4	4	4	4	4	2	4	4	4

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This connector is small and thin and requires delicate and careful handling.

Be very careful not to apply any force to the FPC after inserting it. Otherwise, the connector may become unlocked or the FPC may break. Fix the FPC, in particular, when loads are applied to it continuously. Design the FPC layout with care not to bend it sharply near the insertion opening.

