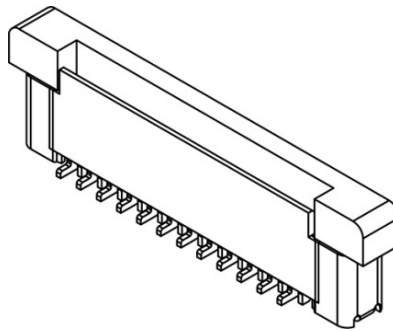


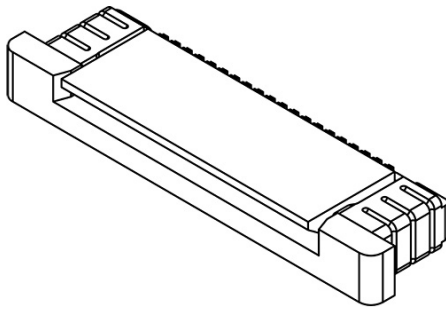
# PRODUCT SPECIFICATION

<b>Part Number</b>	FFC2XXX	<b>Rev</b>	B	<b>Date</b>	16/06/10		
<b>Product Description</b>	0.5mm Pitch ZIF FPC				<b>Page</b>	1	
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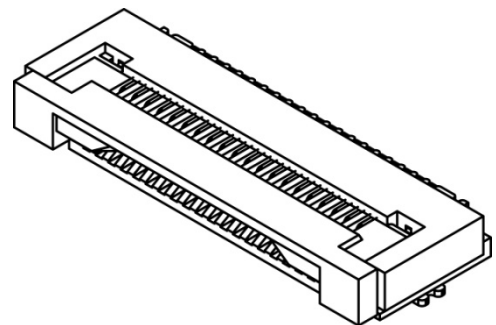
Top Entry



Side Entry  
(Slide Actuator)



Side Entry  
(Flip Type Actuator)



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## 1.0 SCOPE.

This specification covers performance, tests and quality requirements for 0.5mm Pitch ZIF FPC Connector

## 2.0 APPLICABLE DOCUMENTS.

EIA-364 Electronics Industries Association

## 3.0 REQUIREMENTS.

### 3.1 Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable product drawing.

### 3.2 Materials and Finish

- 3.2.1 Housing: High-Temp Plastic LCP (UL94V-0), White
- 3.2.2 Actuator: LCP (UL94V-0), Black
- 3.2.3 Contact: High performance copper alloy (phosphor bronze)
  - Finish: (a) Finish: see ordering information
  - (b) Under-plate: Nickel-plated all over
- 3.2.4 Fitting Nail: Brass, Tin-plated overall

### 3.3 Ratings

- 3.3.1 Voltage rating: 50V AC
- 3.3.2 Current rating: 0.4A
- 3.3.3 Operating Temperature Range: -25°C to +85°C

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## 4.0 PERFORMANCE.

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional per applicable quality inspection plan.	Product shall meet requirements of applicable product drawing and specification.

## 4.1 Electrical Performance.

Item	Test Condition	Requirement
Low-signal Level Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max, in accordance with EIA-364-23.	20 m $\Omega$ Max.(initial)per contact 40 m $\Omega$ Max. Change allowed.
Insulation Resistance	Unmated connectors, apply 500 V DC between adjacent terminals, in accordance with EIA-364-21.	50 M $\Omega$ Min.
Dielectric Withstanding Voltage	Test between adjacent contacts of unmated connectors, in accordance with EIA-364-20.	250 VAC Min. at sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: 0.5 mA max.
Temperature Rise	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 In accordance with EIA-364-70, METHOD 2.	30°C Max. Change allowed

## 4.2 Mechanical Performance.

Item	Test Condition	Requirement
Durability	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 10 $\pm$ 3mm/min. In accordance with EIA-364-09.	20 cycles
FPC Retention Force	Insert the actuator, pull the FPC at the speed rate of 10 $\pm$ 3 mm/min.	Refer to FPC withdrawal force Refer to GROUP 8

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Item	Test Condition	Requirement
Repeated Actuator Insertion/Withdrawal	Insert and withdraw actuator up to 20 cycles at the speed rate of less than 10 cycles/minute.	60 mΩ Max.
Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 10±3 mm/minute. On the terminal assembled in the housing.	0.15kgf MIN.
Fitting Nail/Housing Retention Force	Apply axial pull out force at the speed rate of 10± 3 mm/minute. On the fitting nail assembled in the housing.	0.01kgf MIN.
Vibration	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. In accordance with EIA-364-28, Condition I.	No Damage 60mΩ MAX 1 u sec Max.
Shock (Mechanical)	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. In accordance with EIA-364-27, test condition A.	No Damage 60mΩ MAX 1 u sec Max.

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## 4.3 Environmental Performance.

Item	Test Condition	Requirement
Resistance to Reflow Soldering Heat	Pre Heat: 150°C ~180°C, 60~90sec. Heat: 230°C Min., 40sec Min. Peak Temp.: 260°C Max, 10sec Max.	See Product Qualification and Test Sequence Group 9
Resistance to Hand Soldering Heat	Soldering iron : 350±10°C Duration : 3~4 sec.	Excessive pressure shall not be applied to the terminals. See Product Qualification and Test Sequence Group 10
Thermal Shock	Mate module and subject to follow condition for 5 cycles. 1 cycles: -40 +0/-3 °C, 30 minutes +85 +3/-0 °C, 30 minutes In accordance with EIA-364-32, test condition A.	No Damage 60mΩ MAX 1 u sec Max
Humidity	Mated Connector 40°C, 90~95% RH, Refer to Method II. In accordance with EIA-364-31, test condition A.	No Damage 60mΩ MAX 20MΩ Min.
Temperature Life	Subject mated connectors to temperature life at 85°C for 96 hours. Measure Signal. In accordance with EIA-364-17, test condition A.	No Damage 60mΩ MAX
SO2 Gas	Mate applicable FPC and expose them to the following SO2 gas atmosphere. Temperature: 40±2°C Gas Density: 50±5 ppm Duration: 24 hours	No Damage 60mΩ MAX
Salt Spray	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C for 48 hours. In accordance with EIA-364-26, test condition B.	No Damage 60mΩ MAX
Solderability	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. In accordance with EIA-364-52.	Solder able area shall have minimum of 95% solder coverage.
<div style="display: inline-block; border: 1px solid black; padding: 2px;">Halogen Free</div> 	Test report available on request	-

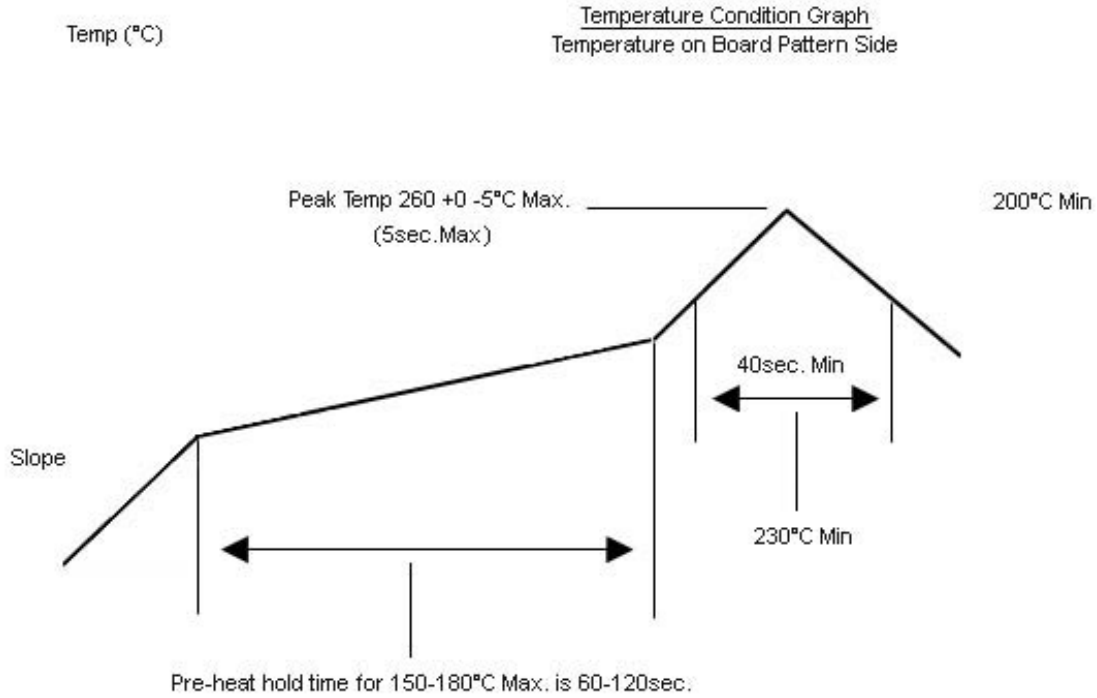
Note. Flowing Mixed Gas shall be conducted by customer request.

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## 5.0 INFRA RED REFLOW CONDITION.

### 5.1 Lead-Free Process: Duration = 2 times



## 6.0 PRODUCT QUALIFICATION AND TEST SEQUENCE.

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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									
Mating / Unmating Forces		2,4								
Durability		3								
Vibration			2							
Shock (Mechanical)			3							
Thermal Shock				5						
Humidity				6						
Temperature Life					5					
Salt Spray						3				
Solderability							1			
Repeated Actuator Insertion/Withdrawal								1		
FPC Retention Force								2		
Terminal / Housing Retention Force								3		
Fitting Nail / Housing Retention Force								4		
Resistance to Soldering Heat									2	
Resistance to Hand Soldering Heat										1
Sample Size	2	4	4	4	4	4	2	4	4	4

7.0 FPC WITHDRAWAL FORCE.

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No. Of Ckt.	Withdrawal Force (Min)	No. Of Ckt.	Withdrawal Force (Min)
4	0.3Kgf	29	1.0Kgf
5		30	
6		31	
7		32	
8		33	
9		34	
10	0.5Kgf	35	1.5Kgf
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20	1.0Kgf	45	
21		46	
22		47	
23		48	
24		49	
25		50	
26		51	
27		52	
28		53	

Revision Details:

<b>Revision</b>	<b>Information</b>	<b>Page</b>	<b>Release Date</b>
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A	Specification Released	-	16/06/2010
B	Leaded temperature profile removed	6	26/11/2015