



Product

108-51107

Specification

PRE: YM Lee

06 JUL 11 Rev.A

APP: SF Leong

DCR No. Initial Release

0.5mm Pitch, FPC Connector, SMT Type

1.0 SCOPE

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 0.5mm Pitch, FPC Connector, SMT Type.

The applicable product descriptions and part numbers are as follow:

Part Number	Part Description
X-1735842-X	0.5mm Pitch, FPC Connector, SMT Type

Country of origin: Singapore

Production location: 26 Ang Mo Kio Industrial Park 2, Singapore 569507

UL File No.: E28476

2.0 Applicable Documents

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence.

2.1 Specifications

A. 501-51096 Qualification Test Report

3.0 Requirements

3.1 Design And Construction

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

3.2 Materials

- A. Contact: Copper Alloy, Nickel underplate, Selective Gold Flash over underplate at mating and soldertail area.
- B. Solderpeg: Copper Alloy, Matte Tin over Nickel underplate
- C. Housing: High Heat Resistant Thermoplastic, UL 94V-0, Natural colour.
- D. Actuator: High Heat Resistant Thermoplastic, UL 94V-0, Black colour.

3.3 Ratings

- A. Voltage Rating: 50V
- B. Current Rating: 0.5A each contact
- C. Operating & Storage Temperature Rating: -20°C to +85°C (in cl. Temperature rise)

3.4 Performance And Test Descriptions

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig 1.

3.5 Test Requirements and Procedures Summary

Figure 1:

Para	Test Items	Requirements	Procedures
3.5.1	Confirmation of product	Product shall meet the requirements of the applicable product drawing.	Visual inspection, No physical damage.
<i>Electrical</i>			
3.5.2	Contact / Termination Resistance (TR)	35 mΩ Max.	Subject mated contacts assembled in housing with applicable cables to 20 mV maximum open circuit at 100 mA. EIA-364-23.
3.5.3	Insulation Resistance	100 MΩ Min Initial, 50 MΩ Min Final.	Apply voltage 500V DC for 1 minute between adjacent contacts of mated connector. EIA-364-21.
3.5.4	Dielectric Withstanding Voltage	No creeping discharge, arching nor flashover shall occur. Leakage current: 0.5mA Max.	250VAC for 1 minute. Test between adjacent contacts of mated connector. EIA-364-20, Method A.
<i>Mechanical</i>			
3.5.5	Durability (Repeated Mating / Unmating)	TR: 35mΩ max Final.	Mate and unmate FPC for 15 cycles. Operation Speed : 10 cycles/min

Para	Test Items	Requirements	Procedures
3.5.6	Vibration (Low Frequency)	No electrical discontinuity greater than 1μsec. shall occur. TR: 35mΩ Max. (Final)	Subject mated connectors for 2 hours in each of 3 mutually perpendicular planes, with 100mA max. applied current. Amplitude: 1.52 mm Peak to Peak. Frequency: 10-55-10Hz shall be traversed in 1 minute. EIA-364-28, Cond. I.
3.5.7	Physical Shock	No electrical discontinuity greater than 1μsec. shall occur. TR: 35 mΩ Max. (Final)	Subject mated connectors to following condition. 3 shocks shall be applied along 3 mutually perpendicular planes, with 1mA DC applied current. Test Pulse: Halfsine shock Peak Value: 490m/s ² (50G) Duration: 11 millisecond, Total: 18 shocks EIA-364-27, Cond. A.
3.5.8	Solderability	Wet solder coverage 95% Min.	JESD22-B102D, Precondition E, Method 2 – Surface Mount Process Simulation Test, Pb-free solder Reflow profile as per figure 3 (see pg 4)
<i>Environmental</i>			
3.5.9	Resistance to Soldering Heat	No physical damage allowed.	<u>Reflow Soldering:</u> Temperature profile as shown in Fig. 3. The specified temperature is measured at surface of PCB. <u>Manual Soldering:</u> Solder iron temperature: 350 ±10°C. Duration: 3 – 4 secs
3.5.10	Temperature Life	TR: 35 mΩ Max. (Final)	Subject mated connector to 105 ±2°C, for 96 hrs. EIA-364-17, Method A, Cond. 3.
3.5.11	Temperature – Humidity Cycling	TR: 35 mΩ Max. (Final)	Subject mated connector to 25-65°C, 90-95% RH, 5 cycles. Each cycle 24 hrs. EIA-364-31, Method IV.
3.5.12	Thermal Shock	TR: 35 mΩ Max. (Final)	Subject mated connector to -55°C for 30 mins & +85°C for 30 mins. This being 1 cycle, repeat for 5 cycles. EIA-364-32, Cond. I.
3.5.13	Salt Spray	By visual inspection only, no noticeable rust build up.	Subject mated connector to salt spray concentration of 5±1% salt, at 35±2°C, for 48 hrs. EIA-364-26, Cond. B.
3.5.14	Temperature Rise	ΔT: 30°C max.	Wire all circuits in series, apply the rated current, and measure temperature rise by probing at soldered areas of contacts, after temperature becomes stabilized. Deduct ambient temperature from measured value.

Fig 1 (End)

4.0 PRODUCT QUALIFICATION TEST SEQUENCE

Test	Test Group								
	1	2	3	4	5	6	7	8	9
	<i>Test Sequence</i>								
Confirmation of Product	1,7	1,5	1,7	1,3	1,3	1,5	1,5	1,3	1,3
Termination Resistance		2,4	2,4,6			2,4	2,4		
Insulation Resistance	2,6								
Dielectric Strength	3,5								
Durability		3							
Vibration			3						
Physical Shock			5						
Solderability				2					
Resistance to Soldering Heat					2				
Temperature Life						3			
Temperature-Humidity Cycling	4								
Thermal Shock							3		
Salt Spray								2	
Temperature Rise									2

Figure 2

5.0 Quality Assurance Provisions

5.1 Test Conditions

Unless otherwise specified, all the tests shall be performed in any combination of the following test conditions.

- Temperature : 15 ~ 35° C
- Relative Humidity : 25 ~ 85%
- Atmosphere Pressure : 650 ~ 800 mm Hg

5.2 Test Specimens

- 5.2.1 The test specimens to be used for testing shall be confirming to the requirements of the applicable product drawing(s)
- 5.2.2 Unless otherwise specified, no sample shall be re-used.

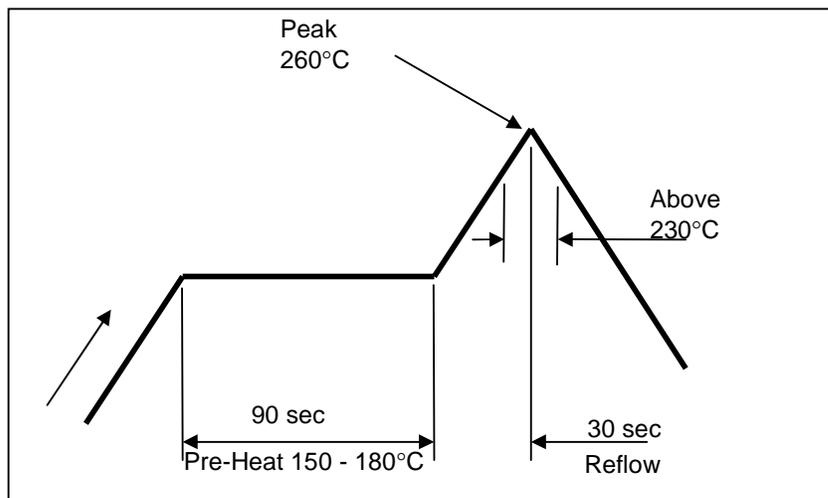


Fig. 3: Temperature Profile for Reflow Soldering