
1.0 mm Pitch FPC Connector, SMT Type.

1. SCOPE

This specification covers performance, tests and quality requirements for **1.0 mm Pitch FPC Connector, SMT Type**.

2. APPLICABLE DOCUMENT

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. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

Test Report: 501-57098

3. 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. Housing: Thermoplastic High Temperature, UL94V-0, Black Color.
- B. Actuator: Thermoplastic High Temperature, UL94V-0, Brown Color.
- C. Contact: Copper Alloy, Gold plated entire.

3.3. RATINGS

- A. Current Rating: 1.0 A
- B. Voltage Rating: 125 VDC
- C. Operating temperature: -20°C to 85°C.

3.4. TEST CONDITION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

Figure 1

TEST DESCRIPTION		REQUIREMENT	PROCEDURED
1	Examination of Product	Meets requirements of product drawing and AMP Specification.	Visual inspection No physical damage
ELECTRICAL			
2	Contact Resistance	20mΩ Max (Initial).	10mA Max.
3	Insulation Resistance	100 MΩ Min,	Impressed voltage 500 V DC. Test between adjacent contacts of unmated samples.
4	Dielectric Withstanding Resistance	No creeping discharge or flashes occur.	500V AC, 1 minute Test between adjacent contacts of unmated samples.
MECHANICAL			
5	Actuator Mating Force and Unmating Force	See Figure 2.	The jack shall be measured with the gauge plug. Test Speed: 25± 3mm/min.
6	FPC Retention Force	See Figure 2.	The jack shall be measured with the FPC. Test Speed: 25± 3mm/min.
7	Vibration Test	No electrical discontinuity of 1 microsecond or longer duration. Contact Resistance: 40mΩ Max.	Amplitude: 1.5mm P-P. Sweep time: 10-55-10Hz. Duration: 2 hour /each direction.
8	Durability	Contact Resistance: 20mΩ Max.	Mate & Unmate of two type for 30 times, Speed: 25± 3mm/min.
ENVIRONMENTAL			
9	Thermal Shock	Contact Resistance: 40 mΩ Max. Insulation Resistance:100 MΩ Min.	The connector housing shall be subjected to 5 successive changes of temperature cycles at temperature of -55℃±3℃ for 30 min And 85℃±2℃ for 30 min.
10	Solder ability Test	The test area shall be covered more than 95% of immersed area with fresh solder.	Steam Aging Preconditioning : 93+3/-5℃ 、100%HR 、8hrs. <J-STD-002 category 3 aging> Solder pot temperature: 245±5℃ , 5sec
11	Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, 85℃/85% RH for 168 hours. Pre Heat : 150~180℃ , 90±30sec. Heat : 230℃ Min., 30±10sec. Peak Temp. : 260+0/-5℃ , 20~40sec. Duration : 3 cycles TE spec. 109-201, Condition B

(a) Shall meet visual requirements, show no physical damage, and shall meet requirements.

Figure 2

No of CKT	Actuator Insertion force (Kgf·Max)			Actuator Extraction force (Kgf·Max)			Retention force (Kgf·Min)	
	1st	6th	30th	1st	6th	30th	1st	10th
3	2.80	2.60	2.60	3.70	3.30	3.30	0.26	0.16
4	2.90	2.70	2.70	3.80	3.40	3.40	0.35	0.25
5	3.00	2.80	2.80	3.90	3.50	3.50	0.44	0.34
6	3.10	2.90	2.90	4.00	3.60	3.60	0.53	0.43
7	3.20	3.00	3.00	4.10	3.70	3.70	0.62	0.52
8	3.30	3.10	3.10	4.20	3.80	3.80	0.70	0.60
9	3.40	3.20	3.20	4.30	3.90	3.90	0.43	0.33
10	3.50	3.30	3.30	4.40	4.00	4.00	0.48	0.38
11	3.60	3.40	3.40	4.50	4.10	4.10	0.53	0.43
12	3.70	3.50	3.50	4.60	4.20	4.20	0.58	0.48
13	3.80	3.60	3.60	4.70	4.30	4.30	0.62	0.52
14	3.90	3.70	3.70	4.80	4.40	4.40	0.67	0.57
15	4.00	3.80	3.80	4.90	4.50	4.50	0.72	0.62
16	4.10	3.90	3.90	5.00	4.60	4.60	0.77	0.67
17	4.20	4.00	4.00	5.10	4.70	4.70	0.82	0.72
18	4.30	4.10	4.10	5.20	4.80	4.80	0.86	0.76
19	4.40	4.20	4.20	5.30	4.90	4.90	0.61	0.51
20	4.50	4.30	4.30	5.40	5.00	5.00	0.64	0.54
21	4.60	4.40	4.40	5.50	5.10	5.10	0.67	0.57
22	4.70	4.50	4.50	5.60	5.20	5.20	0.70	0.60
23	4.80	4.60	4.60	5.70	5.30	5.30	0.74	0.64
24	4.90	4.70	4.70	5.80	5.40	5.40	0.77	0.67
25	5.00	4.80	4.80	5.90	5.50	5.50	0.80	0.70
26	5.10	4.90	4.90	6.00	5.60	5.60	0.83	0.73
27	5.20	5.00	5.00	6.10	5.70	5.70	0.86	0.76
28	5.30	5.10	5.10	6.20	5.80	5.80	0.90	0.80
29	5.40	5.20	5.20	6.30	5.90	5.90	0.93	0.83
30	5.50	5.30	5.30	6.40	6.00	6.00	0.96	0.86
31	5.60	5.40	5.40	6.50	6.10	6.10	0.99	0.89
32	5.70	5.50	5.50	6.60	6.20	6.20	1.02	0.92
33	5.80	5.60	5.60	6.70	6.30	6.30	0.66	0.56
34	5.90	5.70	5.70	6.80	6.40	6.40	0.68	0.58

3.6. PRODUCT QUALIFICATION AND REQUALIFICATION TEST

Test or Examination	Test Group				
	1	2	3	4	5
	Test Sequence (a)				
Examination of Product	1,5	1,7	1,6	1,4	1, 3
Contact Resistance		6	3	3	
Insulation Resistance	2		4		
Dielectric Withstanding Resistance	3		5		
Actuator Mating Force		2			
Actuator Unmating Force		3			
FPC Retention Force		4			
Vibration Test				2	
Durability		5			
Thermal Shock			2		
Solderability Test	4				
Resistance to Reflow Soldering Heat					2

NOTE : (a) Numbers indicate sequence in which tests are performed.

(b) Discontinuities shall not take place in this test group, during tests.