FPC Connector, 0.5mm Pitch Connector SMT Type.

1. INTRODUCTION

1.1. Purpose

Testing was performed on the Tyco FPC Connector, 0.5mm Pitch Connector SMT Type. to determine its conformance to the requirements of Product Specification 108-57523 Revision B.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the FPC Connector, 0.5mm Pitch Connector SMT Type.

1.3. Conclusion

The FPC Connector, 0.5mm Pitch Connector SMT Type meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-57523 Revision B.

1.4. Product Description

The FPC Connector, 0.5mm Pitch Connector SMT Type. is designed for printed circuit board applications. The contacts are copper alloy, Tin plating or Gold plating over nickel under-plated . The housing material is thermoplastic, UL94V-0. The hold down material is copper alloy, Tin plating over nickel under-plated.

1.5. Test samples

The test samples were randomly selected from normal current production lots, and the following part numbers were used for test：

Test Group	Quality	Description
A, B, C, D, E, F, G, H, I	5EA	FPC Connector, 0.5mm Pitch Connector SMT Type.

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1.6. Qualification Test Sequence

Test or Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence（a）								
Examination of Product	1, 9	1, 9	1, 9	1, 7	1, 3	1, 6	1, 3	1, 3	1,5
Contact Resistance	2, 6	2, 6	2, 6	2, 6		2, 5			2, 4
Insulation Resistance	3, 7	3, 7	3, 7	3, 5					
Dielectric withstanding Voltage	4, 8	4, 8	4, 8	4					
Durability									
Vibration						3			
Physical Shock						4			
Contact Retention Force					2				
Solderability							2		
Humidity	5								
Salt Spray		5							
Thermal Shock								2	
Temperature Life			5						
Resistance to Reflow Soldering Heat									3

Figure 1.

NOTE：（a）Numbers indicate sequence in which tests are performed.
（b）Discontinuities shall not take place in the test group, during tests.

2. TEST RESULT

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
A	Examination of Product	No Damage	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	18.2	12.0	15.4	2.2
	Insulation Resistance	100 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Humidity	40±3℃,90±5%,96hours	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	20.7	12.2	16.7	2.6
	Insulation Resistance	50 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Examination of Product	No Damaged	OK	OK	OK	–
B	Examination of Product	No Damage	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	18.3	11.8	14.4	2.5
	Insulation Resistance	100 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Salt Spray	35±2℃, 5±1%Salt, 48hours	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	15.9	12.1	13.5	1.4
	Insulation Resistance	50 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Examination of Product	No Damaged	OK	OK	OK	–
C	Examination of Product	No Damage	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	14.8	8.7	11.3	1.9
	Insulation Resistance	100 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Temperature Life	125±2℃, 96hours	OK	OK	OK	–
	Contact Resistance	35 mΩMax.	19.15	8.4	13.3	3.3
	Insulation Resistance	50 MΩMin.	OK	OK	OK	–
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	–
	Examination of Product	No Damaged	OK	OK	OK	–

Figure 1（cont.）

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
D	Examination of Product	No Damaged	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	17.3	12.0	14.7	1.8
	Insulation Resistance	100 MΩ Min.	OK	OK	OK	—
	Dielectric Withstanding Resistance	250 VAC 1Minute	OK	OK	OK	—
	Insulation Resistance	50 MΩ Min.	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	17.2	13.5	15.5	1.2
	Examination of Product	No Damaged	OK	OK	OK	—
E	Examination of Product	No Damaged	OK	OK	OK	—
	Contact Retention Force	250 gf MIN.	625	500	566	43.81
	Examination of Product	No Damaged	OK	OK	OK	—
F	Examination of Product	No Damaged	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	16.4	12.1	15.1	1.2
	Vibration	10-55-10 Hz	OK	OK	OK	—
	Physical Shock	55G 11ms	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	17.1	14.4	15.5	0.9
	Examination of Product	No Damaged	OK	OK	OK	—
G	Examination of Product	No Damaged	OK	OK	OK	—
	Solderability Test	235±5℃, 5±0.5sec solder coverage:95% min.	OK	OK	OK	—
	Examination of Product	No Damaged	OK	OK	OK	—
H	Examination of Product	No Damaged	OK	OK	OK	—
	Thermal Shock	-55±5℃, +85±5℃ , 30 Minutes , 5 Cycles	OK	OK	OK	—
	Examination of Product	No Damaged	OK	OK	OK	—
I	Examination of Product	No Damaged	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	16.0	12.3	14.3	1.1
	Resistance to Reflow Soldering Heat	150~180 ℃, 90±30sec 230℃ Min., 30±10sec Peak Temp.：260+0/-5℃ 20~40sec, 3cycles	OK	OK	OK	—
	Contact Resistance	35 mΩ Max.	18.8	13.5	16.4	1.6
	Examination of Product	No Damaged	OK	OK	OK	—

Figure 1 (End)