Box Header Connector

1. INTRODUCTION

1.1. Purpose

Testing was performed on the Box Header connector to determine its conformance to the requirements of Product Specification 108-57566 Revision O.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the Box Header.

1.3. Conclusion

The Box Header connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-57566 Revision O.

1.4. Product Description

The Box Header connector is designed for printed circuit board applications. The contacts are copper alloy with gold or tin or tin-lead plated, all over nickel under-plated. The housing material is glass filled insulating polymer, UL94V-0.

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	Quantity	Description
A, B, C, D, E	5EA.	Box Header connector

DR	DATE	APVD	DATE
Joseph Lee	05-Jul-2005	Wei-Jer Ke	05-Jul-2005

1.6. Qualification Test Sequence

Test or Examination	Test Group				
	A	B	C	D	E
	Test Sequence（a）				
Examination of Product	1, 4	1, 9	1, 5	1, 3, 5	1, 3
Contact Resistance		2, 8	2, 4		
Dielectric withstanding Voltage	3				
Insulation Resistance	2				
Mating Force		3, 7			
Unmating Force		4, 6			
Durability		5			
Contact Retention Force				4	
Solderability					2
Resistance to Soldering Heat				2	
Salt Spray			3		

Figure 1.

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

2. TEST RESULT

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
A	Insulation Resistance	1000 MΩMin.	OK	OK	OK	/
	Dielectric withstanding Voltage	500 VAC 1Minute	OK	OK	OK	/
	Appearance	No Damaged	OK	OK	OK	/
B	Contact Resistance	20mΩMax.	5.14	4.74	4.906	0.194885
	Mating Force	340 g /per pin Max	132	115	121.8	6.572671
	Unmating Force	42g/ pin Min	58	52	53.8	2.48996
	Durability	100 cycles	OK	OK	OK	/
	Unmating Force	42g/ pin Min	58	50	54	3.162278
	Mating Force	340 g/per pin Max	104	96	100.2	3.193744
	Contact Resistance	40 mΩMax.	5.36	4.9	5.246	0.236601
	Appearance	No Damaged	OK	OK	OK	/
C	Contact Resistance	20mΩMax.	5.62	4.67	5.098	0.364856
	Salt Spray	35℃, 5%Salt, 48hours	OK	OK	OK	/
	Contact Resistance	40 mΩMax.	5.71	4.83	5.194	0.342243
	Appearance	No Damaged	OK	OK	OK	/
D	Resistance to Wave Solder Heat (For customer drawing is applied with wave process & its products contacts are with Tin-Lead plating)	Peak 240±5℃,10±0.5sec. ((Tyco spec. 109-202, Condt. A)	OK	OK	OK	/
	Resistance to Wave Solder Heat (For customer drawing is applied with wave process & its products contacts are with non-Lead plating)	Peak 265±5℃, 10±0.5sec. (Tyco spec. 109-202, Condt. B)	OK	OK	OK	/

Figure 2（Cont.）

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
D	Resistance to Reflow Soldering Heat (For customer drawing is applied with reflow process & its products contacts are with Tin-Lead plating)	Pre Heat：100~150℃,. Heat：210℃ Min., Peak Temp: 240℃ Max., 10±0.5sec	OK	OK	OK	/
	Resistance to Reflow Soldering Heat (For customer drawing is applied with reflow process & its products contacts are with non-Lead plating)	Pre Heat：150~200℃, Peak Temp.：260+0/-5℃, 20~40sec. ;3 cycles (Tyco spec. 109-201, Cond. B)	OK	OK	OK	/
	Appearance	No Damaged	OK	OK	OK	/
	Contact Retention Force	0.8kgf /per pin MIN.	2.2	1.8	2.02	0.160466
	Appearance	No Damaged	OK	OK	OK	/
E	Solderbility	Steam Aging Preconditioning：93+3/-5℃、100%HR、8hrs. Soldering: 245±5℃, 5sec And inspected area of each lead have 95% solder coverage minimum	OK	OK	OK	/
	Appearance	No Damaged	OK	OK	OK	/

Figure 2（End）