ATX 4.2 Pitch POWER CONNECTOR

1. INTRODUCTION

1.1. Purpose

Testing was performed on the Tyco Electronics ATX 4.2mm Pitch Power Connector connector to determine its conformance to the requirements of Product Specification 108-57560, Revision A.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the ATX 4.2mm Pitch Power Connector.

1.3. Conclusion

The ATX 4.2mm Pitch Power Connector listed in paragraph 1.5. conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-57560, Revision A.

1.4. Product Description

The ATX 4.2mm Pitch Power Connector is designed for printed circuit board applications. The contacts are copper alloy, Tin plating with nickel under-plated All Over. The housing material is glass filled insulating polymer, UL94V-0.

1.5. Test Specimens

Test specimens were representative of normal production lots. The following specimens were used for test.

Test Group	Quantity	Description
A, B, C, D, E,F	5 A-E.	ATX 4.2mm Pitch Power Connector, Tin Plating With Ni Underplated All Over.

1.6. Qualification Test Sequence

Test or Examination	Test Group					
	A	B	C	D	E	F
	Test Sequence (a)					
Examination of product.	1, 9	1, 5	1, 8	1, 4	1, 7	1, 3
Contact Resistance	3, 7	2, 4				
Insulation Resistance			2, 6		2, 5	
Dielectric withstanding voltage			3, 7		3, 6	
Mating force	2, 6					
Unmating force	4, 8					
Contact Retention Force				3		
Durability	5					
Solderability				2		
Thermal Shock			4			
Humidity Temp.Cycling			5			
Temperature Life					4	
Salt Spray		3				
Resistance to wave soldering heat						2

NOTE (a) The numbers indicate sequence in which test are performed.

Figure 1

2. TEST RESULT

Test Group	Test Description	Requirement	Test Result				Judgment
			Max.	Min.	Ave.	Std. Dev.	
A	Examination of product	Meets product drawing.	PASSED				Accepted
	Mating force	0.45 kgf/per pin Max.	0.39	0.24	0.32	0.05	Accepted
	Contact Resistance	20 mΩ Max.	11.38	8.00	8.90	0.76	Accepted
	Unmating force	0.15 kgf/per pin Min.	0.35	0.21	0.30	0.03	Accepted
	Durability	50 Cycles	PASSED				Accepted
	Mating force	0.45 kgf/per pin Max.	0.37	0.26	0.31	0.03	Accepted
	Contact Resistance	30 mΩ Max.	13.70	9.49	11.67	0.03	Accepted
	Unmating force	0.15 kgf/per pin Min.	0.29	0.19	0.26	0.03	Accepted

	Examination of product.	Meets product drawing.	PASSED				Accepted
B	Examination of product	Meets product drawing.	PASSED				Accepted
	Contact Resistance	20 mΩ Max.	10.24	7.25	8.66	0.85	Accepted
	Salt Spray	35±2℃,5±1%,48hours	PASSED				Accepted
	Contact Resistance	30 mΩ Max.	14.04	9.45	11.74	1.49	Accepted
	Examination of product	Meets product drawing.	PASSED				Accepted
C	Examination of product	Meets product drawing.	PASSED				Accepted
	Insulation Resistance	1000 mΩ Min. 500VDC for 1 minute	PASSED				Accepted
	Dielectric withstanding voltage	1500 VAC, for 1 minute	PASSED				Accepted
	Thermal Shock	5 cycles between -55℃ and 85℃ in 30 minutes	PASSED				Accepted
	Humidity Temp.Cycling	Between 25℃ at and 65℃ at 90~95% RH for 96hours	PASSED				Accepted
	Insulation Resistance	1000 mΩ Min. 500VDC for 1 minute	PASSED				Accepted
	Dielectric withstanding voltage	1500 VAC, for 1 minute	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
D	Examination of product	Meets product drawing.	PASSED				Accepted
	Solderability	230±5℃,5±0.5 sec, 95% Min.	PASSED				Accepted
	Contact Retention Force	1.2 kgf/per pin Min	1.68	1.29	1.43	0.11	Accepted
	Examination of product	Meets product drawing.	PASSED				Accepted
E	Examination of product	Meets product drawing.	PASSED				Accepted
	Insulation Resistance	1000 mΩ Min. 500VDC for 1 minute	PASSED				Accepted
	Dielectric withstanding voltage	1500 VAC, for 1 minute	PASSED				Accepted
	Temperature Life	105℃ ,48hours	PASSED				Accepted
	Insulation Resistance	1000 mΩ Min. 500VDC for 1 minute	PASSED				Accepted
	Dielectric withstanding voltage	1500 VAC, for 1 minute	PASSED				Accepted
	Examination of product	Meets product drawing.	PASSED				Accepted
F	Examination of product	Meets product drawing.	PASSED				Accepted

	Resistance to wave soldering heat	265±5℃,10±0.5sec	PASSED	Accepted
	Examination of product	Meets product drawing.	PASSED	Accepted

Figure 2 (end)