Wire-To-Board Serial, SMT, Pitch 1.0 connector

1. INTRODUCTION

1.1. Purpose

Testing was performed on the Tyco Electronics Wire-To-Board Serial, SMT, Pitch 1.0 connector to determine its conformance to the requirements of Product Specification 108-57264, Revision D.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the Wire-To-Board Serial, SMT, Pitch 1.0 connector.

1.3. Conclusion

The Wire-To-Board Serial, SMT, Pitch 1.0 connector listed in paragraph 1.5. conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-57264, Revision D.

1.4. Product Description

The Wire-To-Board Serial, SMT, Pitch 1.0 connector is designed for printed circuit board applications.

1.5. Test Specimens

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

Test Group	Quantity	Description	Applied Base No.
A, B, C, D, E, F, G, H, I, J, K, L, M	5 ea.	Wire-To-Board Serial, SMT, Pitch 1.0 connector	1470364, 1734595, 1734597, 1734709, 2041190, 2041191

1.6. Qualification Test Sequence

Test or Examination	Test Group												
	A	B	C	D	E	F	G	H	I	J	K	L	M
	Test Sequence (a)												
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1, 3	1, 3	1, 3	1, 3	1, 3
Termination Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4						
Insulation Resistance	2, 5												
Dielectric withstanding Voltage	3, 6												
Temperature Rising										2			
Connector Mating Force		3, 7											
Connector Un-mating Force		4, 6											
Durability		5											
Vibration			3										
Physical Shock			4										
Temperature Life				3									
Thermal Shock					3								
Humidity Temperature Cycling	4					3							
Salt Spray							3						
Solder ability								2					
Resistance to Reflow Soldering Heat									2				
Insertion & withdraw force											2		
Cramp Retention force												2	
Current Rating													2

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

Figure 1

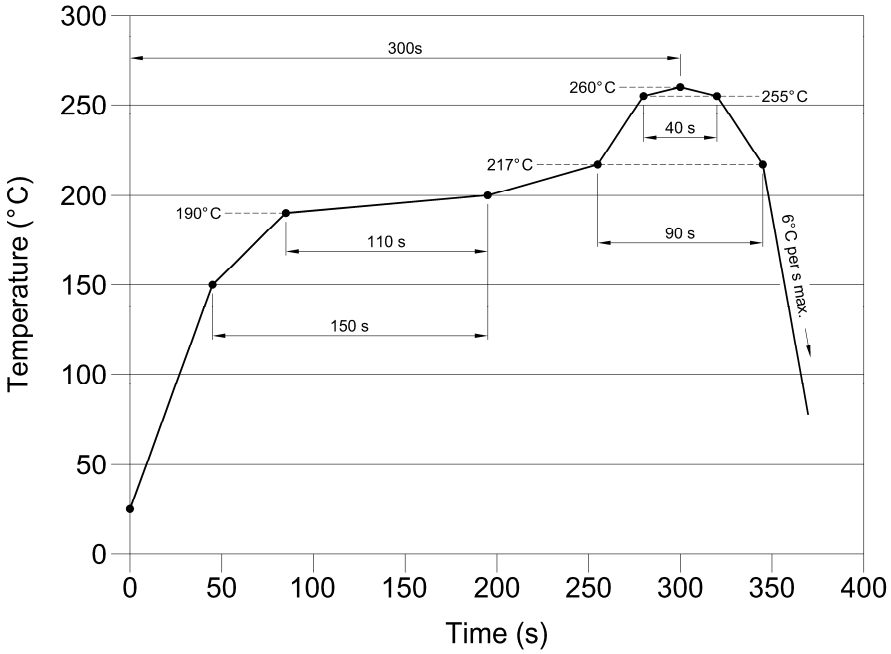
2. TEST RESULT

GP	TEST	SPEC.	n	DATA				Judgment
				Max.	Min.	Mean	σ	
A	Insulation Resistance	100 MΩ min.	5	Passed				Accepted
	Dielectric withstanding Voltage	500 VAC 1 minute		Passed				Accepted
	Humidity Temperature Cycling	25-65°C, 95%,10 cycles		No damaged				Accepted
	Insulation Resistance	100 MΩ min.		Passed				Accepted
	Dielectric withstanding Voltage	500 VAC 1 minute		Passed				Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
B	Termination Resistance	20 mΩ max.	5	13.0	7.2	9.5	1.3	Accepted
	Connector Mating Force	0.5 kgf/pin (4.9 N) Max..		0.26	0.19	0.22	0.03	Accepted
	Connector Un-mating Force	0.08 kgf/pin (0.785 N) Min.		0.19	0.13	0.16	0.02	Accepted
	Durability	50 cycles		No damaged				Accepted
	Connector Mating Force	0.5 kgf/pin (4.9 N) Max..		0.20	0.16	0.18	0.01	Accepted
	Connector Un-mating Force	0.08 kgf/pin (0.785 N) Min.		0.18	0.12	0.15	0.02	Accepted
	Termination Resistance	ΔR 20 mΩ max.		18.9	-0.5	9.6	5.7	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
C	Termination Resistance	20 mΩ max.	5	16.7	7.5	10.2	2.0	Accepted
	Vibration	10-55-10 Hz		Passed				Accepted
	Physical Shock	490 m/s2, 50G, 11 m Sec.		Passed				Accepted
	Termination Resistance	ΔR 20 mΩ max.		18.7	-2.8	3.5	5.9	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
D	Termination Resistance	20 mΩ max.	5	10.2	7.6	8.2	1.8	Accepted
	Temperature Life	105°C 250 hours		No damaged				Accepted
	Termination Resistance	ΔR 20 mΩ max.		5.2	1.3	3.2	2.7	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
E	Termination Resistance	20 mΩ max.	5	14.1	6.6	9.0	1.8	Accepted
	Thermal Shock	-55°C, +105°C 5 cycles		No damaged				Accepted
	Termination Resistance	ΔR 20 mΩ Max.		18.8	-4.3	6.6	4.8	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
F	Termination Resistance	20 mΩ max.	5	16.3	7.6	10.7	2.2	Accepted
	Humidity Temperature Cycling	25-65°C, 95%, 10 cycles		No damaged				Accepted
	Termination Resistance	ΔR 20 mΩ max.		19.2	-3.1	6.9	5.9	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted

Figure 2 (cont.)

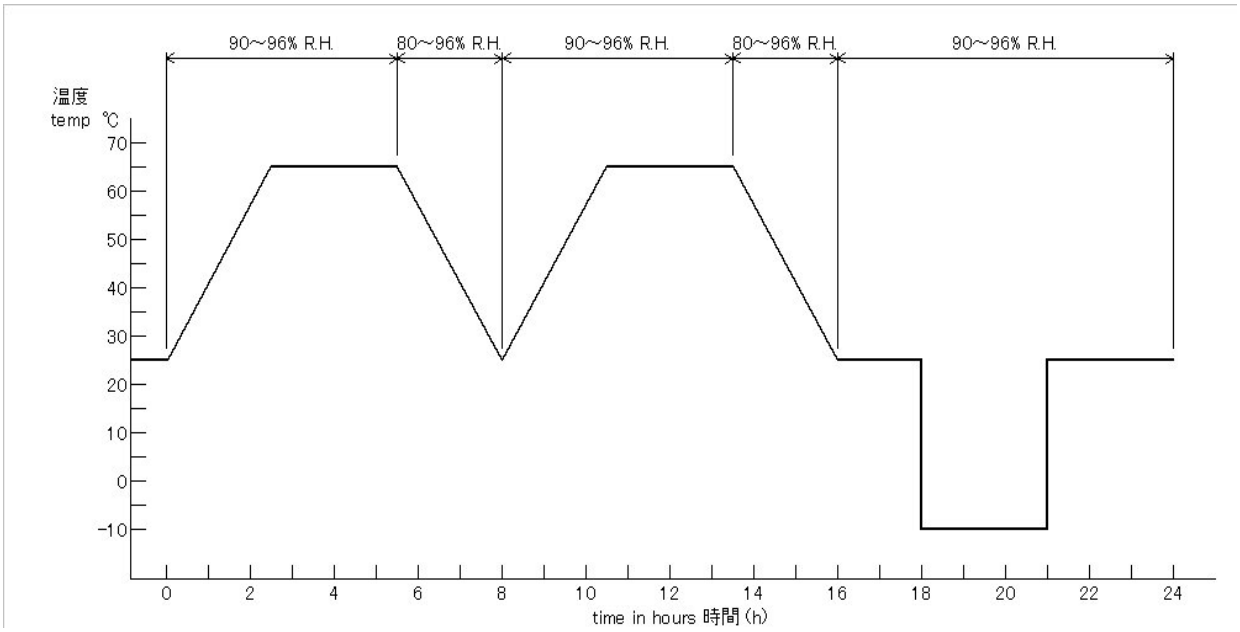
G	Termination Resistance	20 mΩ max.	5	12.8	6.6	8.9	1.3	Accepted
	Salt Spray	35°C, 5% salt, 48 hours		No damaged				Accepted
	Termination Resistance	ΔR 20 mΩ max.		18.2	3.5	9.8	3.5	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
H	Solder ability	95% solder coverage min.	5	Passed				Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
I	Resistance to Reflow Soldering Heat	No damaged	5	Passed				Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
J	Temperature Rising	30°C max./1A	5	Passed				Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
K	Insertion force	0.150 kg max.	10	0.090	0.056	0.073	0.011	Accepted
	Withdraw force	0.60 kg min.		1.544	1.044	1.250	0.173	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
L	Cramp retention force	1.0 kg min.	10	2.377	2.126	2.274	0.081	Accepted
	Examination of Product	Meets drawing.		Passed				Accepted
M	Current Rating	ΔT 30°C max./1A	5	Passed				Accepted
	Examination of Product	Meets drawing.		Passed				Accepted

Figure 2 (End)



Temperature Profile of Reflow Soldering

Figure 3



Temperature reduced 25˚C to -10˚C within 10 minutes. Humidity uncontrolled at a temperature less than 25˚C.

Humidity-Temperature Cycle

Figure 4