
USB CONNECTOR, A SERIES

1. INTRODUCTION

1.1. Purpose

Testing was performed on the Tyco **USB CONNECTOR, A SERIES** to determine its conformance to the requirements of Product Specification **108-57505 Revision A**.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the **USB CONNECTOR, A SERIES**.

1.3. Conclusion

The **USB CONNECTOR, A SERIES** meets the electrical, mechanical, and environmental performance requirements of Product Specification **108-57505 Revision A**.

1.4. Product Description

The **USB CONNECTOR, A SERIES** is designed for printed circuit board applications. The contacts are copper alloy, Gold plated on the contact interface and Tin plating on the soldertail, 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, F, G, H, I, J	5EA.	USB CONNECTOR, A SERIES

DR	DATE	APVD	DATE
Oblic Hu	30-Mar-2007	Wei-Jer Ke	30-Mar-2007

1.6. Qualification Test Sequence

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

Figure 1

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

2. TEST RESULT

GP	TEST	Requirement	TEST DATA				Judgment
			Max.	Min.	Mean	σ	
A	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Capacitance	2pF Max.	0.77	0.54	0.66	0.12	ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric withstanding Voltage	500 VAC 1Minute	PASSED				ACCEPTED
	Humidity Temperature Cycling	25-65°C ,95%,168 Hours	PASSED				ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric withstanding Voltage	500 VAC 1Minute	PASSED				ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
B	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	15.40	14.43	14.83	0.49	ACCEPTED
	Mating Force	3.75kgf [35N] Max.	1.84	1.55	1.68	0.14	ACCEPTED
	Unmating Force	1.02kgf [10N] Min.	1.91	1.70	1.82	0.10	ACCEPTED
	Durability	1500 Cycles	PASSED				ACCEPTED
	Mating Force	3.75kgf [35N] Max.	1.67	1.32	1.50	0.17	ACCEPTED
	Unmating Force	1.02kgf [10N] Min.	1.73	1.51	1.66	0.11	ACCEPTED
	Contact Resistance	30 m Ω Max.	17.00	14.67	15.73	1.17	ACCEPTED
C	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	15.40	14.43	14.83	0.49	ACCEPTED
	Vibration	10-55-10 Hz	PASSED				ACCEPTED
	Mechanical Shock	50G, 11mSec	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	17.00	14.67	15.73	1.17	ACCEPTED
	Appearance	No Damaged	PASSED				ACCEPTED
D	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	13.76	0.54	14.40	13.33	ACCEPTED
	Thermal Shock	-55°C , +85°C 5 Cycles	PASSED				ACCEPTED
	Termination Resistance	30 m Ω Max.	15.49	0.44	15.98	15.10	ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED

Figure 2 (Cont.)

GP	TEST	Requirement	DATA				Judgment
			Max.	Min.	Mean	σ	
E	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	14.40	13.33	13.76	0.54	ACCEPTED
	Humidity Temperature Cycling	25-65 $^{\circ}$ C ,95%,168 Hours	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	15.98	15.10	15.49	0.44	ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
F	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	15.69	1.03	16.69	14.63	ACCEPTED
	Temperature Life	85 $^{\circ}$ C 250Hrs	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	18.14	1.52	20.42	17.53	ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
G	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	16.69	14.63	15.69	1.03	ACCEPTED
	Salt Spray	35 $^{\circ}$ C , 5%Salt, 48hours	PASSED				ACCEPTED
	Contact Resistance	30 m Ω Max.	19.16	16.11	17.67	1.53	ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
H	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Temperature Rising	30 $^{\circ}$ C Max/ 1.5A	25	16	23	3.5	ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
I	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Resistance to Solder Heat	150~180 $^{\circ}$ C , 90 \pm 30sec 230 $^{\circ}$ C Min., 30 \pm 10sec Peak Temp. : 260+0/-5 $^{\circ}$ C	PASSED				ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Contact Retention Force	1 kgf Min.	1.2	1.05	1.15	0.125	ACCEPTED
J	Examination of Product	No abnormalities	PASSED				ACCEPTED
	Solderbility	95% Min. coverage	PASSED				ACCEPTED
	Examination of Product	No abnormalities	PASSED				ACCEPTED

Figure 2 (End)