USB CONNECTOR, B SERIES.

1. INTRODUCTION

1.1. Purpose

Testing was performed on the **USB CONNECTOR, B SERIES** connector to determine its conformance to the requirements of Product Specification 108-57538 Rev A.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of **USB CONNECTOR, B SERIES** manufactured by the Global Personal Computer Division.

1.3. Conclusion

USB CONNECTOR, B SERIES connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-57538 Rev A.

1.4. Product Description

USB CONNECTOR, B SERIES connector is designed for printed circuit board applications. The contacts are copper alloy, gold plated on the contact interface and Tin-Cu plating on the solder tail, 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	5 ea.	**USB CONNECTOR, B SERIES**

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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	1,12	1,6	1,9	1,3	1,3	1,3	1,5	1,3	1,3	1,3
Low Level Contact Resistance	3,9	2,5					2,4			
Insulation Resistance			3,7							
Dielectric Withstanding Voltage			4,8							
Contact Capacitance			2							
Contact Current Rating				2						
Random Vibration	6	3								
Physical Shock	7	4								
Durability	5									
Connector Mating Force	2,8									
Contact Unmating Force	4,10									
Contact Retension Force						2				
Resistance to Bending of Cable									2	
Cable Retention Force	11									
Thermal Shock			5							
Humidity			6							
Salt Spray							3			
Temperature Life										2
Solderability					2					
Resistance to Soldering Heat								2		

Figure 1

Notes: (a) The numbers indicate sequence in that tests were performed.
(b) Numbers indicate sequence in which tests are performed.
(c) Precondition samples with 10 cycles durability.

2. TEST RESULT

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
A	Connector Mating Force	3.57Kgf Max	2.492	2.078	2.321	0.414
	Low Level Contact Resistance	30mΩ Max	18.3	17.3	18.0	1.0
	Connector Unmating Force	1.0~2.0 Kgf	1.674	1.514	1.564	0.16
	Durability	1500 cycles	OK	OK	OK	OK
	Random Vibration	5.35G's rms, 15minutes	OK	OK	OK	OK
	Physical Shock	30G's, 11ms, 18 total shock	OK	OK	OK	OK
	Connector Mating Force	3.57Kgf Max	1.869	1.542	1.615	0.327
	Low Level Contact Resistance	30mΩ Max	20.3	18.7	19.1	1.6
	Connector Unmating Force	1.0~2.0 Kgf	1.448	1.361	1.424	0.087
	Examination of product	No Damaged	OK	OK	OK	OK
B	Low Level Contact Resistance	30mΩ Max	18.6	16.5	17.3	2.1
	Random Vibration	5.35G's rms, 15minutes	OK	OK	OK	OK
	Physical Shock	30G's, 11ms, 18 total shock	OK	OK	OK	OK
	Low Level Contact Resistance	30MΩ Max	19.2	16.3	17.5	2.9
	Examination of product	No Damaged	OK	OK	OK	OK
C	Contact Capacitance	2PF Maximum per Contact	0.41	0.34	0.38	0.07
	Insulation Resistance	1,000 MΩ Minimum	OK	OK	OK	OK
	Dielectric Withstanding Voltage	500 V AC for one minute	OK	OK	OK	OK
	Thermal Shock	–55℃ to +85℃.10 cycles	OK	OK	OK	OK
	Humidity	40℃,95%RH.96H	OK	OK	OK	OK
	Insulation Resistance	1,000 MΩ Minimum	OK	OK	OK	OK
	Dielectric Withstanding Voltage	500 V AC for one minute	OK	OK	OK	OK
	Examination of product	No Damaged	OK	OK	OK	OK
D	Contact Current Rating	1.5A at 250Vac minimum	6.3℃	3.6℃	4.2℃	2.7℃
	Examination of product	No Damaged	OK	OK	OK	OK
E	Solderability	95% covered	OK	OK	OK	OK
	Examination of product	No Damaged	OK	OK	OK	OK
F	Contact Retention force	1.0 Kgf min per Pin.	2.495	1.521	1.984	1.429
	Examination of product	No Damaged	OK	OK	OK	OK

Figure 2. (Con.)

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	σ
G	Contact Resistance	30 mΩ Max.	18.5	16.9	17.3	1.6
	Salt Spray	35℃, 5%Salt, 8hours	OK	OK	OK	OK
	Contact Resistance	30 mΩ Max.	18.2	16.6	17.0	1.6
	Examination of product	No Damaged	OK	OK	OK	OK
H	Resistance to Reflow Soldering Heat	260+0/-5℃, 20~40sec.	OK	OK	OK	OK
	Examination of product	No Damaged	OK	OK	OK	OK
J	Temperature Life	85℃,250H	OK	OK	OK	OK
	Examination of product	No Damaged	OK	OK	OK	OK

Figure 2. (End)