

**MINI USB CONNECTOR SERIES**

**1. INTRODUCTION**

**1.1. Purpose**

Testing was performed on the **MINI USB CONNECTOR SERIES** connector to determine its conformance to the requirements of Product Specification 108-57062 Rev B.

**1.2. Scope**

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

**1.3. Conclusion**

**MINI USB CONNECTOR SERIES** connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-57062 Rev B.

**1.4. Product Description**

**MINI USB CONNECTOR SERIES** connector is designed for printed circuit board applications. The contacts are copper alloy, gold plated on the contact interface and Tin-plating on the soldertail, Nickel underplated all over. The housing material is glass filled insulating polymer, UL94V-0. The shell material is Copper Alloy. Nickel plated over Cu underplated all over.

**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	5 ea.	<b>MINI USB CONNECTOR SERIES</b>

**1.6. Qualification Test Sequence**

Test or Examination	Test Group (a)				
	A	B	C	D	E
	Test Sequence (b)				
Examination of product	1,11	1,5	1,7	1,4	1,3
Low Level Contact Resistance	3,8	2,4			
Insulation Resistance			3		
Dielectric Withstanding Voltage			4		
Contact Capacitance			2		
Contact Current Rating				2	
Random Vibration	6				
Physical Shock	7				
Durability	5				
Connector Mating Force	2,10				
Connector Unmating Force	4,9				
Thermal Shock			5		
Humidity			6		
Temperature Life		3			
Solderability				3	
Resistance to Soldering Heat					2

Figure 1.

NOTE: (a) The numbers indicate sequence in which tests were performed.

2. TEST RESULT

GP	TEST	SPEC.	DATA			
			Max.	Min.	Mean	$\sigma$
A	Contact Mating force	3.57Kgf Max.	2.51	2.24	2.41	0.27
	Low Level Contact Resistance	50 M $\Omega$ Max	17.38	12.64	14.72	4.74
	Contact Unmating force	0.71Kgf Min	2.35	1.74	1.96	0.61
	Durability	5000 Cycles	OK	OK	OK	OK
	Random Vibration	5.35 G's	OK	OK	OK	OK
	Physical Shock	30G's, 11mSec	OK	OK	OK	OK
	Low Level Contact Resistance	50m $\Omega$ Max.	17.46	11.38	15.10	6.08
	Contact Unmating force	0.31Kgf Min	1.44	0.93	1.21	0.51
	Contact Mating force	3.57Kgf Max.	1.84	1.45	1.58	0.39
	Appearance	No physical damage	OK	OK	OK	--
B	Low Level Contact Resistance	50m $\Omega$ Max.	16.81	12.45	14.25	4.36
	Temperature Life	85 $^{\circ}$ C for 250hours	OK	OK	OK	OK
	Low Level Contact Resistance	50m $\Omega$ Max.	16.43	13.87	14.74	1.79
	Appearance	No physical damage	OK	OK	OK	--
C	Contact Capacitance	2pF Max	OK	OK	OK	OK
	Insulation Resistance	100 M $\Omega$ Min	OK	OK	OK	OK
	Dielectric Withstanding Voltage	1000V AC	OK	OK	OK	OK
	Thermal Shock	-55 $^{\circ}$ C to +85 $^{\circ}$ C 5 Cycle	OK	OK	OK	OK
	Humidity	40 $^{\circ}$ C, 90-95%RH 168h.	OK	OK	OK	OK
	Appearance	No physical damage	OK	OK	OK	--
D	Contact Current Rating	1.0A at 250Vac Min.	OK	OK	OK	OK
	Solderability	95% solder coverage.	OK	OK	OK	OK
	Appearance	No physical damage	OK	OK	OK	--
E	Resistance to Soldering Heat	245 $^{\circ}$ C.	OK	OK	OK	OK
	Appearance	No physical damage	OK	OK	OK	--

Figure 2.