

**Slimline SATA Plus Connector**
**1. INTRODUCTION**
**1.1. Purpose**

Testing was performed on the Slimline SATA Plus Connector to determine its performance to the requirements of Product Specification 108-99030.

**1.2. Scope**

This report covers the electrical, mechanical, and environmental performance of Slimline SATA Plus Connector manufactured by the Assembly Division.

**1.3. Conclusion**

Slimline SATA Plus Connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-99030.

**1.4. Product Description**

Slimline SATA Plus Connector consisting is designed for printed circuit board applications. The contacts are copper alloy, gold plated on the contact interface and tin-lead free 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
1,2,3,4,5,6,7	5EA.	Slimline SATA Plus Connector

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QR-WI22-04-A2

**QUALIFICATION TEST SEQUENCE**

Test Item	Test Group						
	1	2	3	4	5	6	7
	Test Sequence (a)						
Examination of Product	1, 5	1, 9	1, 8	1, 8	1, 4	1, 3	1, 3
Low Level Contact Resistance	2, 4	3, 7	2, 4, 6		3		
Insulation resistance				2, 6			
Dielectric withstanding Voltage				3, 7			
Temperature Rise			7				
Solderability						2	
Resistance to Soldering Heat							2
Resistance to Reflow Soldering Heat					2		
mating Force		2					
Unmating Force		8					
Durability	3	4(b)					
Vibration (Random)		5					
Physical shock		6					
Reseating (manually plug/unplug 3 time)			5				
Humidity				5			
Temperature Life			3				
Thermal Shock				4			

Figure 1.NOTE:

- (a) The numbers indicate sequence in which tests were performed.
- (b)Preconditioning, 50 cycles for the 500-durability cycle requirement. The mating and Unmating Cycle is at the maximum rate of 200cycles per hour.

**2.TEST RESULT**

GP	TEST ITEMS	REQUIREMENTS	DATA				Judgment	
			Max.	Min.	Mean	Std. Dev.		
1	Examination of Product	No physical damage	PASSED				ACCEPTED	
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: 50 mΩ max. initial,	34.96	20.06	23.61	2.71	ACCEPTED	
		(2) 18 plus contacts: 55 mΩ max. initial	35.42	21.60	27.54	3.76	ACCEPTED	
	Durability	25mm/min,500Cycles	PASSED				ACCEPTED	
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: ΔR=15mΩ max. final	3.68	-12.85	-1.67	2.58	ACCEPTED	
		(2) 18 plus contacts: ΔR=20mΩ max. final	3.41	-2.58	0.44	1.01	ACCEPTED	
	Examination of Product	No physical damage	PASSED				ACCEPTED	
	2	Examination of Product	No physical damage	PASSED				ACCEPTED
		Mating Force	55N Max.	8.76	7.23	7.76	0.61	ACCEPTED
		Low Level Contact Resistance	(1) 7signal and 6 power contacts: 50 mΩ max. initial,	42.68	19.05	23.52	3.30	ACCEPTED
(2) 18 plus contacts: 55 mΩ max. initial			38.58	22.66	28.34	4.12	ACCEPTED	
Durability		25mm/min,500Cycles	PASSED				ACCEPTED	
Vibration		10-55-10 HZ	PASSED				ACCEPTED	
Physical shock		294 m/s <sup>2</sup> (30G) , 1 micro sec	PASSED				ACCEPTED	
Low Level Contact Resistance		(1) 7signal and 6 power contacts: ΔR=15mΩ max. final	4.16	-18.60	-0.99	2.85	ACCEPTED	
		(2) 18 plus contacts: ΔR=20mΩ max. final	1.83	-9.76	-0.44	1.49	ACCEPTED	
Unmating Force		3.5N Min. after 500 cycles.	7.28	4.41	5.89	1.22	ACCEPTED	

	Examination of Product	No physical damage	PASSED				ACCEPTED
GP	TEST ITEMS	REQUIREMENTS	DATA				Judgment
			Max.	Min.	Mean.	Std. Dev.	
3	Examination of Product	No physical damage	PASSED				ACCEPTED
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: 50 mΩ max. initial,	28.68	19.57	22.53	2.08	ACCEPTED
		(2) 18 plus contacts: 55 mΩ max. initial	36.36	22.40	27.18	3.80	ACCEPTED
	Temperature life	No physical damage	PASSED				ACCEPTED
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: 50 mΩ max. initial,	4.71	-4.64	0.32	1.66	ACCEPTED
		(2) 18 plus contacts: 55 mΩ max. initial	8.99	-2.81	0.44	1.46	ACCEPTED
	Reseating	Manually plug/unplug 3 times	PASSED				ACCEPTED
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: ΔR=15mΩ max. final	2.32	-9.12	-0.86	1.62	ACCEPTED
		(2) 18 plus contacts: ΔR=20mΩ max. final	1.37	-9.46	-0.79	1.97	ACCEPTED
	Temperature rise	(1) P2~P6 power contacts: Apply 2A DC current. ΔT=30°C max.	24.01	22.43	23.05	0.62	ACCEPTED
		(1) #12~#18 plus contacts: Apply 1.3A DC current ΔT=30°C max	11.46	7.84	9.28	1.48	ACCEPTED
		Examination of Product	No physical damage	PASSED			
4	Examination of Product	No physical damage	PASSED				ACCEPTED
	Insulation Resistance	1000MΩ Min	PASSED				ACCEPTED
	Dielectric withstanding Voltage	500V AC for 1 minute	PASSED				ACCEPTED
	Thermal shock	-55°C~85°C 10Cycles	PASSED				ACCEPTED
	Humidity	40°C 90~95%RH 96H	PASSED				ACCEPTED

	Insulation Resistance	1000MΩ	PASSED				ACCEPTED
GP	TEST ITEMS	REQUIREMENTS	DATA				Judgment
			Max.	Min.	Mean.	Std. Dev.	
4	Dielectric withstanding Voltage	500VAC 0.5Ma	PASSED				ACCEPTED
	Examination of Product	No physical damage	PASSED				ACCEPTED
5	Examination of Product	No physical damage	PASSED				ACCEPTED
	Resistance to Heat soldering	No physical damage	PASSED				ACCEPTED
	Low Level Contact Resistance	(1) 7signal and 6 power contacts: 50 mΩ max. initial,	24.36	19.24	21.76	1.22	ACCEPTED
		(2) 18 plus contacts: 55 mΩ max. initial	34.90	22.70	27.81	3.64	ACCEPTED
Examination of Product	No physical damage	PASSED				ACCEPTED	
6	Examination of Product	No physical damage	PASSED				ACCEPTED
	Solderability	Solderable area shall have a solder coverage of 95% min.	PASSED				ACCEPTED
	Examination of Product	No physical damage	PASSED				ACCEPTED
7	Examination of Product	No physical damage	PASSED				ACCEPTED
	Resistance to Soldering Heat	No physical damage	PASSED				ACCEPTED
	Examination of Product	No physical damage	PASSED				ACCEPTED

Figure 2