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Sealing for Micro USB Receptacle 5Pos Water Proof

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1. Introduction

1.1 Testing was performed on the Sealing for Micro USB Receptacle 5Pos Water Proof Connector to determine if it meets the requirements of Product Specification, 108-61242 Rev.A.

1.2 Scope

This report covers the mechanical and environmental performance requirements of the Sealing for Micro USB Receptacle 5Pos Water Proof Connector.

The qualification testing was performed between 04 DEC, 2014 and 09 FEB, 2015.

1.3 Conclusion

The Sealing for Micro USB Receptacle 5Pos Water Proof Connector meets the mechanical and environmental performance requirements of Product Specification, 108-61242 Rev.A.

1.4 Test Samples

The test samples were randomly selected from normal current production lots, and the following

Part numbers were used for test:

Description	Part Number
Sealing for Micro USB Receptacle 5Pos Water Proof Connector	2108883
Receptacle For Micro USB2.0 5Pos Water Proof Connector, B-Type	2108877
Plug For 5Pos , B-Type	-

2. Test Contents

Para.	Test Items	Requirements	Procedures
3.5.1	Examination of Product	No physical damage	Visual inspection No physical damage
Mechanical Requirements			
3.5.2	Durability (with WP jig condition)	No physical damage and shall meet requirements of subsequent tests.	10,000 cycles with 3kgf. - Mechanically Operated : 500 cycle/hour with lubricant at the lock lever mating area - Manually Operated : 200 cycle/hour
3.5.3	Vibration (with WP jig condition)	No physical damage and shall meet requirements of subsequent tests.	Apply for 2 hours in each 3 mutually perpendicular axes(total 6 hours). Frequency=10-55-10Hz (Sweep time :1 minute max.) Amplitude=1.5mm, Current=100mA [ EIA-364-28F Condition I ]
3.5.4	Random Vibration (with WP jig condition)	No physical damage and shall meet requirements of subsequent tests.	Apply for 15 minutes in each 3 mutually perpendicular axes(total 45 minutes). Frequency=50-2,000Hz Power spectral density=0.02g <sup>2</sup> /Hz Current=100mA [ EIA-364-28F Condition V Test Letter A ]
3.5.5	Shock (with WP jig condition)	No physical damage and shall meet requirements of subsequent tests.	Apply 3 successive shocks in each direction along the 3 mutually perpendicular axes(total 18 shocks) Pulse shape=half sine Peak acceleration=490m/s <sup>2</sup> (50G) Duration of pulse=11ms [ EIA-364-27B Condition I ]
Environmental Requirements			
3.5.6	Thermal Shock (change of temperature) (with WP jig condition)	No physical damage and shall meet requirement of subsequent test.	Ta=-40°C for 2 hours; then change of temp.=25°C , 5minute max.; then Tb=+85°C for 2 hours. After 20cycles, cool to ambient for 2 hours.
3.5.7	Salt spray (with WP jig condition)	No physical damage and shall meet requirement of subsequent test.	72 hours spray, At temp. 35±2 °C R/H 90~95%, Salt Na-Cl mist 5% After test wash parts and return to room ambient for 2 hours. [ EIA-364-26B ]
3.5.8	Waterproof IPX-5 (with WP jig condition)	Protected against water jets	Water projected at all angles through a 6.3mm nozzle at a flow rate of 12.5 liters/min at a pressure of 30kN/m <sup>2</sup> for 3 minutes from a distance of 3 meters.(Fig.8)

3.5.9	Waterproof IPX-8 (with WP jig condition)	Protected against water submersion	Submersion for 30 minutes at a depth of 1.5 meters. (Fig.8)
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Fig. 2 (End)

3. Product Qualification Test Sequence

Para.	Test Examination	Test Group			
		1	2	3	7
		Test Sequence (a)			
3.5.1	Examination of Product	1,5	1,7	1,5	1,5
3.5.2	Durability	2			
3.5.3	Vibration		2		
3.5.4	Random Vibration		3		
3.5.5	Shock		4		
3.5.6	Thermal Shock				2
3.5.7	Salt spray			2	
3.5.8	Waterproof IPX-5	3	5	3	3
3.5.9	Waterproof IPX-8	4	6	4	4

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

Fig. 3 (End)

4. Test Results

Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
1	Examination of Product	2	initial	No physical damage			N/A	No abnormalities	Meet spec
	Durability	2	final	No physical damage			N/A	No abnormalities	Meet Spec
	Waterproof IPX-5	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Waterproof IPX-8	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Examination of Product	2	final	No physical damage			N/A	No abnormalities	Meet Spec
2	Examination of Product	2	initial	No physical damage			N/A	No abnormalities	Meet spec
	Vibration	2	final	No physical damage			N/A	No abnormalities	Meet Spec
	Random Vibration	2	Final	No physical damage			N/A	No abnormalities	Meet Spec
	Shock	2	final	No physical damage			N/A	No abnormalities	Meet Spec
	Waterproof IPX-5	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Waterproof IPX-8	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Examination of Product	2	final	No physical damage			N/A	No abnormalities	Meet Spec

Fig. 4 (to be continued)

Group	Test Item	N	Condition	Test Result				Requirement	Conclusion
				Max	Min	Ave	Unit		
3	Examination of Product	2	initial	No physical damage			N/A	No abnormalities	Meet spec
	Salt Spray	2	final	No corrosion phenomenal			N/A	No abnormalities	Meet Spec
	Waterproof IPX-5	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Waterproof IPX-8	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Examination of Product	2	final	No physical damage			N/A	No abnormalities	Meet Spec
4	Examination of Product	2	initial	No physical damage			N/A	No abnormalities	Meet spec
	Thermal Shock	2	final	No physical damage			N/A	No abnormalities	Meet Spec
	Waterproof IPX-5	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Waterproof IPX-8	2	final	No water ingress			N/A	No abnormalities	Meet Spec
	Examination of Product	2	final	No physical damage			N/A	No abnormalities	Meet Spec

Fig. 4 (End)