

MHF[®] III Connector

Part No. PLUG: 20609-002R RECEPTACLE: 20369-001E

Test Report

Product Specification no. PRS-2107

1	T17095	June 15, 2017	M.A		T.M
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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. 目的 / Purpose

MHF III コネクタについて製品規格(PRS-2107)に基づき評価を行う。

Testing was performed on the MHF III Connector to determine meets the requirement of I-PEX specification PRS-2107.

2. 結果 / Conclusion

全ての試料が製品規格(PRS-2107)の条件を満足した。

All specimens met the requirements of PRS-2107.

3. 試料 / Sample

MHF III Plug Connector : P/N. 20609-002

MHF III Receptacle Connector: P/N. 20369-001E

Cable: AWG#36 coaxial cable (jacket diameter 0.81mm)

4. 試験方法 / Method

製品規格(PRS-2107)参照。

Refer to product specification PRS-2107.

4-1 試験順序及び評価数量 / Test Sequence and Sample Quantity

試験項目 (Test Item)	グループ (Group)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
接触抵抗 Contact Resistance				1,3	1,3	1,3	1,3	1,5	1,5	1,3	1,3	1,3		
絶縁抵抗 Insulation Resistance								2,6	2,6					
耐電圧 Dielectric Withstanding Voltage								3,7	3,7					
電圧定在波比 VSWR	1													
抜去力 Un-mating force		1												
引張り強度 Crimp strength			1											
耐久性 Durability				2										
ケーブル保持力 Cable retention force					2									
耐振動性 Vibration						2								
耐衝撃性 Shock							2							
湿度(定常状態) Humidity (Steady State)								4						
熱衝撃 Thermal Shock									4					
高温寿命 High Temperature Life										2				
硫化水素ガス H2S Gas											2			
塩水噴霧 Salt Water Spray												2		
半田付け性 Solder ability													1	
半田耐熱性 Soldering Heat Resistance														1
試料数 Sample QTY.	5	10	10	10	10	10	10	10	10	10	10	10	10	10

5. 評価結果 / Test Result

	Test items 試験項目	Measurements 測定内容	Spec. 規格	n	Unit	Data				Judge 判定	
						AVE	MAX	MIN	S		
A	VSWR	0.1~3.0GHz	1.3 MAX.	10	----	1.179	1.19	1.17	0.008	OK	
		Plug	3.0~6.0GHz	1.5 MAX.	10	----	1.242	1.25	1.24	0.006	OK
	VSWR	0.1~3.0GHz	1.3 MAX.	10	----	1.154	1.16	1.14	0.007	OK	
		Rece.	3.0~6.0GHz	1.4 MAX.	10	----	1.119	1.14	1.11	0.009	OK
B	Un-mating force 抜去力	Initial	4N MIN.	10	N	9.36	10.5	8.3	0.82	OK	
		30 cycles	2N MIN.	10	N	6.00	6.5	5.0	0.51	OK	
C	Crimp strength 引張強度	Initial	7N MIN.	10	N	11.02	11.5	10.5	0.36	OK	
D	Durability 耐久性	Contact resistance of inner contact (中心導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	11.77	13.0	10.5	0.82	OK	
		After 30 cycles	----	10	mΩ	12.94	14.8	11.4	1.14	OK	
		ΔR	20mΩ MAX.	10	mΩ	1.17	2.8	-0.9	0.97	OK	
		Contact resistance of ground contact (外部導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	6.01	6.4	5.4	0.32	OK	
		After 30 cycles	----	10	mΩ	6.79	7.5	6.3	0.37	OK	
ΔR	100mΩ MAX.	10	mΩ	0.78	1.5	-0.1	0.47	OK			
E	Cable Retention Force ケーブル保持力	Contact resistance of inner contact (中心導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	12.86	14.2	11.8	0.96	OK	
		After testing	----	10	mΩ	14.90	16.3	13.6	0.78	OK	
		ΔR	20mΩ MAX.	10	mΩ	2.04	2.9	0.4	0.78	OK	
		Contact resistance of ground contact (外部導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	6.05	6.7	5.4	0.46	OK	
		After testing	----	10	mΩ	6.63	7.5	6.0	0.45	OK	
		ΔR	100mΩ MAX.	10	mΩ	0.58	1.6	0.1	0.45	OK	
		Electrical Discontinuity 電氣的瞬断	Spec. : No electrical discontinuity grater than 1μ sec. shall occur. 規格 : 1μ秒以上の電氣的瞬断の無き事								
		Appearance 外観	Initial	10	----	No discontinuity(電氣的瞬断無し)				OK	
After testing	10	----	No abnormality (異常無し)				OK				
After testing	10	----	No abnormality (異常無し)				OK				
F	Vibration 耐振動性	Contact resistance of inner contact (中心導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	12.82	14.3	11.9	0.71	OK	
		After testing	----	10	mΩ	12.70	14.3	11.7	1.02	OK	
		ΔR	20mΩ MAX.	10	mΩ	-0.12	1.2	-1.2	0.77	OK	
		Contact resistance of ground contact (外部導体 接触抵抗)									
		Initial	20mΩ MAX.	10	mΩ	6.12	6.8	5.5	0.46	OK	
		After testing	----	10	mΩ	6.31	7.3	5.4	0.60	OK	
		ΔR	100mΩ MAX.	10	mΩ	0.19	0.9	-1.2	0.71	OK	
		Electrical Discontinuity 電氣的瞬断	Spec. : No electrical discontinuity grater than 1μ sec. shall occur. 規格 : 1μ秒以上の電氣的瞬断の無き事								
		Appearance 外観	Initial	10	----	No discontinuity(電氣的瞬断無し)				OK	
After testing	10	----	No abnormality (異常無し)				OK				
After testing	10	----	No abnormality (異常無し)				OK				

Test items 試験項目	Measurements 測定内容	Spec. 規格	n	Unit	Data				Judge 判定	
					AVE	MAX	MIN	S		
G Shock 耐衝撃性	Contact resistance of inner contact (中心導体 接触抵抗)									
	Initial	20mΩ MAX.	10	mΩ	12.58	14.2	11.0	1.06	OK	
	After testing	-----	10	mΩ	13.03	15.0	10.9	1.24	OK	
	ΔR	20mΩ MAX.	10	mΩ	0.45	1.7	-0.9	0.90	OK	
	Contact resistance of ground contact (外部導体 接触抵抗)									
	Initial	20mΩ MAX.	10	mΩ	6.20	6.9	5.5	0.49	OK	
	After testing	-----	10	mΩ	6.47	6.9	5.5	0.42	OK	
	ΔR	100mΩ MAX.	10	mΩ	0.27	0.8	-0.5	0.47	OK	
	Electrical Discontinuity 電氣的瞬断	Spec. : No electrical discontinuity grater than 1μ sec. shall occur. 規格 : 1μ秒以上の電氣的瞬断の無き事								
	Appearance 外觀	Initial	10	-----	No discontinuity(電氣的瞬断無し)				OK	
		After testing	10	-----	No abnormality (異常無し)				OK	
	H Humidity (Steady state) 湿度(定常状態)	Contact resistance of inner contact (中心導体 接触抵抗)								
Initial		20mΩ MAX.	10	mΩ	13.50	14.5	12.1	0.76	OK	
After testing		-----	10	mΩ	12.96	13.9	11.4	0.90	OK	
ΔR		20mΩ MAX.	10	mΩ	-0.54	0.9	-2.0	1.00	OK	
Contact resistance of ground contact (外部導体 接触抵抗)										
Initial		20mΩ MAX.	10	mΩ	6.21	6.9	5.6	0.48	OK	
After testing		-----	10	mΩ	7.87	9.1	7.2	0.72	OK	
ΔR		100mΩ MAX.	10	mΩ	1.66	3.2	0.5	0.78	OK	
Insulation resistance 絶縁抵抗		Initial	10	MΩ	10,000 (minimum value)				OK	
		After testing	10	MΩ	10,000 (minimum value)				OK	
Dielectric Withstanding Voltage 耐電圧		Spec : No creeping discharge flashover, nor insulator breakdown shall occur. 規格 : 沿面放電、空中放電、絶縁破壊等の以上の無き事								
		Initial	10	-----	No abnormality (異常無し)				OK	
		After testing	10	-----	No abnormality (異常無し)				OK	
Appearance 外觀		Initial	10	-----	No abnormality (異常無し)				OK	
		After testing	10	-----	No abnormality (異常無し)				OK	
J Thermal shock 熱衝撃		Contact resistance of inner contact (中心導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	13.63	15.3	12.9	0.83	OK
		After testing	-----	10	mΩ	13.14	14.9	12.1	0.96	OK
	ΔR	20mΩ MAX.	10	mΩ	-0.49	1.1	-1.9	0.83	OK	
	Contact resistance of ground contact (外部導体 接触抵抗)									
	Initial	20mΩ MAX.	10	mΩ	6.11	6.7	5.5	0.30	OK	
	After testing	-----	10	mΩ	8.85	10.2	7.4	1.05	OK	
	ΔR	100mΩ MAX.	10	mΩ	2.74	4.0	1.3	1.07	OK	
	Insulation resistance 絶縁抵抗	Initial	10	MΩ	10,000 (minimum value)				OK	
		After testing	10	MΩ	10,000 (minimum value)				OK	
	Dielectric Withstanding Voltage 耐電圧	Spec : No creeping discharge flashover, nor insulator breakdown shall occur. 規格 : 沿面放電、空中放電、絶縁破壊等の以上の無き事								
		Initial	10	-----	No abnormality (異常無し)				OK	
		After testing	10	-----	No abnormality (異常無し)				OK	
	Appearance 外觀	Initial	10	-----	No abnormality (異常無し)				OK	
		After testing	10	-----	No abnormality (異常無し)				OK	

	Test items 試験項目	Measurements 測定内容	Spec. 規格	n	Unit	Data				Judge 判定
						AVE	MAX	MIN	S	
K	High temperature Life 高温寿命	Contact resistance of inner contact (中心導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	13.74	14.9	12.3	1.00	OK
		After testing	-----	10	mΩ	14.00	15.2	12.0	0.99	OK
		ΔR	20mΩ MAX.	10	mΩ	0.26	1.7	-1.2	0.96	OK
		Contact resistance of ground contact (外部導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	6.48	7.5	5.5	0.63	OK
		After testing	-----	10	mΩ	6.56	9.2	5.7	1.04	OK
		ΔR	100mΩ MAX.	10	mΩ	0.08	2.6	-1.3	1.06	OK
		Appearance 外観	Initial	10	-----	No abnormality (異常無し)				OK
			After testing	10	-----	No abnormality (異常無し)				OK
L	H ₂ S Gas 硫化水素ガス	Contact resistance of inner contact (中心導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	13.27	14.2	11.8	0.75	OK
		After testing	-----	10	mΩ	13.55	14.9	11.9	1.04	OK
		ΔR	20mΩ MAX.	10	mΩ	0.28	3.0	-1.6	1.56	OK
		Contact resistance of ground contact (外部導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	5.96	6.3	5.6	0.23	OK
		After testing	-----	10	mΩ	7.92	9.8	6.6	0.85	OK
		ΔR	100mΩ MAX.	10	mΩ	1.96	3.5	0.6	0.80	OK
		Appearance 外観	Initial	10	-----	No abnormality (異常無し)				OK
			After testing	10	-----	No abnormality (異常無し)				OK
M	Salt Water Spray 塩水噴霧	Contact resistance of inner contact (中心導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	13.24	15.0	12.0	1.01	OK
		After testing	-----	10	mΩ	13.36	14.9	11.7	0.96	OK
		ΔR	20mΩ MAX.	10	mΩ	0.12	2.7	-1.6	1.26	OK
		Contact resistance of ground contact (外部導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	6.39	7.2	5.1	0.82	OK
		After testing	-----	10	mΩ	6.50	7.9	5.5	0.76	OK
		ΔR	100mΩ MAX.	10	mΩ	0.12	1.6	-1.5	0.89	OK
		Appearance 外観	Initial	10	-----	No abnormality (異常無し)				OK
			After testing	10	-----	No abnormality (異常無し)				OK
N	Solder ability 半田付け性	Spec. : More than 95% of the dipped surface becomes wet and the pinhole that should not gather at one point is less than 5%. 規格 : 浸した面積の95%以上に半田が付着し、かつピンホール空隙が1箇所集中せず、5%以下である事								
		-----	10	-----	No abnormality (異常無し)				OK	
P	Reflow soldering heat resistance 半田耐熱性	Spec. : Abnormality adversely affecting the performance should not occur. 規格 : 機能を損なう変形及び欠陥の無い事								
		-----	10	-----	No abnormality (異常無し)				OK	









