

MHF[®] 5 Connector (AWG#36φ0.64 Cable)

Part No. PLUG: 20711-001R-81 RECEPTACLE: 20566-001E-01

Test Report

Product Specification no. PRS-2109

1	T17106	June 27, 2017	M.A		T.M
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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. 目的 / Purpose

MHF 5 コネクタについて製品規格(PRS-2109)に基づき評価を行う。

Testing was performed on the MHF5 Connector to determine meets the requirement of I-PEX specification, PRS-2109.

2. 結果 / Conclusion

全ての試料が製品規格(PRS-2109)の条件を満足した。

All specimens met the requirements of PRS-2109.

3. 試料 / Sample

MHF5 Plug Connector : P/N. 20711-001R-81

MHF5 Receptacle Connector : P/N. 20566-001E-01

Cable : AWG#36 coaxial cable (jacket diameter 0.64mm)

4. 試験方法 / Method

製品規格(PRS-2109)参照。

Refer to product specification PRS-2109.

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

試験項目 / Test Item		Group														
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	
(1)	接触抵抗 Contact Resistance			1 3			1 3	1 3	1 5	1 5	1 3	1 3	1 3			
(2)	絶縁抵抗 Insulation Resistance								2 6	2 6						
(3)	耐電圧 Dielectric withstanding voltage								3 7	3 7						
(4)	VSWR	1														
(5)	抜去力 Unmating Force		1													
(6)	耐久性 Durability			2												
(7)	引張り強度 Crimp Strength				1											
(8)	ケーブル保持力 Cable Retention Force					1										
(9)	耐振動性 Vibration						2									
(10)	耐衝撃性 Shock							2								
(11)	湿度(定常状態) Humidity Steady State								4							
(12)	熱衝撃 Thermal Shock									4						
(13)	高温寿命 High Temperature Life										2					
(14)	硫化水素ガス H ₂ S Gas											2				
(15)	塩水噴霧 Salt Water Spray												2			
(16)	半田付け性 Solder Ability														1	
(17)	半田耐熱性 Soldering Heat Resistance															1
Sample QTY pcs.		Plug	10	10	10	10	10	10	10	10	10	10	10	10	----	----
		Receptacle	10	10	10	----	10	10	10	10	10	10	10	10	10	10
Test Board pcs.			10	10	10	----	10	10	10	10	10	10	10	10	10	10

5. 試験結果/ Results

	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 Plug	0.1~3.0GHz	1.3 MAX.	10	----	1.065	1.07	1.05	0.006	OK				
		3.0~6.0GHz	1.5 MAX.	10	----	1.153	1.17	1.13	0.012	OK				
	VSWR Rece.	0.1~3.0GHz	1.3 MAX.	10	----	1.068	1.07	1.07	0.002	OK				
		3.0~6.0GHz	1.4 MAX.	10	----	1.209	1.23	1.18	0.030	OK				
B	Un-mating force 抜去力	Initial	4N MIN.	10	N	10.61	11.6	9.7	0.64	OK				
		30 cycles	2N MIN.	10	N	5.89	6.6	5.4	0.40	OK				
C	Durability 耐久性	Contact resistance of inner contact (中心導体接触抵抗)												
		Initial	20mΩ MAX.	10	mΩ	10.82	12.3	10.0	0.73	OK				
		After testing	----	10	mΩ	12.44	14.2	10.2	1.34	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.62	3.2	-0.5	1.19	OK				
		Contact resistance of ground contact (外部導体接触抵抗)												
		Initial	20mΩ MAX.	10	mΩ	6.18	7.5	5.3	0.74	OK				
		After testing	----	10	mΩ	7.48	8.4	6.1	0.89	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.30	2.5	-0.1	0.96	OK				
D	Crimp strength 引張強度	Initial	7N MIN.	10	N	11.77	12.2	11.5	0.23	OK				
E	Cable Retention Force ケーブル保持力	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							-----	10	----	No discontinuity(電氣的瞬断無し)	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	12.39	14.6	10.3	1.60	OK				
		After testing	----	10	mΩ	13.41	15.5	11.3	1.44	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.02	2.9	-0.3	1.06	OK				
		Contact resistance of ground contact (外部導体接触抵抗)												
		Initial	20mΩ MAX.	10	mΩ	6.10	7.3	5.0	0.72	OK				
		After testing	----	10	mΩ	7.13	8.4	5.4	0.80	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.03	2.6	-0.2	0.80	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							-----	10	----	No discontinuity(電氣的瞬断無し)	OK
		Appearance 外觀	Initial	10	----	No abnormality (異常無し)				OK				
After testing	10	----	No abnormality (異常無し)				OK							
G	Shock 耐衝撃性	Contact resistance of inner contact (中心導体接触抵抗)												
		Initial	20mΩ MAX.	10	mΩ	11.64	15.3	10.4	1.59	OK				
		After testing	----	10	mΩ	13.39	15.4	11.4	1.56	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.75	4.9	0.1	1.50	OK				
		Contact resistance of ground contact (外部導体接触抵抗)												
		Initial	20mΩ MAX.	10	mΩ	6.23	7.6	5.4	0.83	OK				
		After testing	----	10	mΩ	7.27	8.2	6.1	0.58	OK				
		ΔR	20mΩ MAX.	10	mΩ	1.04	1.9	-0.2	0.81	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							-----	10	----	No discontinuity(電氣的瞬断無し)	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		
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	12.76	15.4	10.7	1.61	OK	
	After testing	----	10	mΩ	14.19	16.5	11.2	1.36	OK	
	ΔR	20mΩ MAX.	10	mΩ	1.43	3.5	-0.1	1.23	OK	
	Contact resistance of ground contact (外部導体接触抵抗)									
	Initial	20mΩ MAX.	10	mΩ	5.90	7.4	5.0	0.69	OK	
	After testing	----	10	mΩ	7.08	9.0	5.5	0.88	OK	
	ΔR	100mΩ MAX.	10	mΩ	1.18	3.0	-0.2	1.03	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
	Appearance 外観	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	13.08	14.4	10.6	1.27	OK	
After testing		----	10	mΩ	14.28	15.5	11.3	1.32	OK	
ΔR		20mΩ MAX.	10	mΩ	1.20	4.0	-0.9	1.32	OK	
Contact resistance of ground contact (外部導体接触抵抗)										
Initial		20mΩ MAX.	10	mΩ	5.99	7.4	5.3	0.70	OK	
After testing		----	10	mΩ	7.09	8.4	5.3	1.00	OK	
ΔR		100mΩ MAX.	10	mΩ	1.10	2.5	-0.1	0.92	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
Appearance 外観		Initial		10	----	No abnormality (異常無し)				OK
		After testing		10	----	No abnormality (異常無し)				OK
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	12.14	13.7	10.5	0.99	OK	
	After testing	----	10	mΩ	13.09	15.0	11.2	1.33	OK	
	ΔR	20mΩ MAX.	10	mΩ	0.95	2.3	-0.1	0.75	OK	
	Contact resistance of ground contact (外部導体接触抵抗)									
	Initial	20mΩ MAX.	10	mΩ	5.90	6.8	5.4	0.52	OK	
	After testing	----	10	mΩ	8.11	9.4	5.5	1.09	OK	
	ΔR	100mΩ MAX.	10	mΩ	2.21	3.5	0.0	1.03	OK	
	Appearance 外観	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	
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	12.49	14.4	11.0	1.04	OK
		After testing	-----	10	mΩ	14.03	15.5	11.8	1.30	OK
		∠R	20mΩ MAX.	10	mΩ	1.55	4.5	0.0	1.47	OK
		Contact resistance of ground contact (外部導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	6.02	6.5	5.4	0.47	OK
		After testing	-----	10	mΩ	6.78	7.6	5.5	0.64	OK
		∠R	100mΩ MAX.	10	mΩ	0.76	2.1	-0.5	0.75	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	12.48	14.3	11.0	1.00	OK
		After testing	-----	10	mΩ	13.62	16.4	11.4	1.59	OK
		∠R	20mΩ MAX.	10	mΩ	1.14	4.9	-0.7	1.66	OK
		Contact resistance of ground contact (外部導体 接触抵抗)								
		Initial	20mΩ MAX.	10	mΩ	6.17	6.9	5.2	0.52	OK
		After testing	-----	10	mΩ	7.34	8.7	5.3	1.04	OK
		∠R	100mΩ MAX.	10	mΩ	1.17	2.5	0.1	0.69	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	







