

MHF® I Connector

Ground contact gold plating (Anti-static reel version)

Part No. Plug: 20351-1**R-37 Receptacle: 20279-001E-0* / 20431-001E-01 / 20441-001E-01

Test Report

Product Specification no. PRS-1726

9	T23067	December 20, 2023	M.Toida	K.Yufu	Y.Hashimoto
8	T23058	November 28, 2023	K.Tanaka	K.Yufu	Y.Hashimoto
7	T21163	November 17, 2021	S.Taguchi	-	M.Takemoto
6	T20093	November 10, 2020	S.Taguchi	J.Tonai	M.Takemoto
Rev.	ECN	Date	Prepared by	Checked by	Approved by
Confident	tial C		I-PEX Inc.		QKE-DFFDE07-07 REV.10

MHF I Connecter Test Report

1. Purpose

To evaluate the performance of MHF I Connector in accordance with PRS-1726.

2. Specimen

- (1) MHF I PLUG (Part No. 20351-112R-37)
- (2) MHF I RECEPTACLE (Part No. 20279-001E-0*, 20431-001E-01, 20441-001E-01)

*The evaluation results are representative of 20279-001E-01.

3. Test Sequence

All the evaluations were performed in accordance with Table 1. Test Sequence.

4. Result

See Table 1 to 2, Graph 1 to 10. For the details of the testing conditions and requirements, see PRS-1726. The "n" in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-1726.

Table 1 Test Sequence and Sample Quantity

Test Item							Gro	oup						
rest item	Α	В	С	D	E	F	G	Н	J	K	L	М	N	Р
Contact Resistance					1,3	1,3	1,3	1,3	1,4	1,4	1,3	1,3		
Insulation Resistance									2,5	2,5				
Dielectric Withstanding Voltage	1													
VSWR		1												
Unmating Force			1											
Crimp Strength				1										
Durability					2									
Cable Retention Force						2								
Vibration							2							
Shock								2						
Thermal Shock									3					
Humidity (Steady State)										3				
Salt Water Spray											2			
High Temperature Life												2		
Solder ability													1	
Soldering Heat Resistance														1
Sample Quantity	10	5	10	10	10	10	10	10	10	10	10	10	10	10

Numbers indicate sequence in which tests are performed.

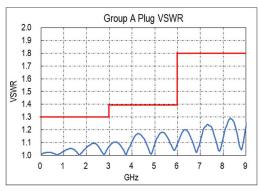
Table 2 Test result

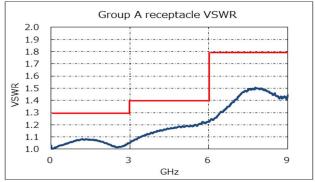
Group	Test items	Specific	action n	Unit	AVE.	MAX.	MIN.	S	Judgement		
Group	Measurements	Specific	cation n	Oilit	AVL.				Judgement		
Α	Dielectric withstanding voltage										
	Spec: No abnormalities such as creeping discharge, flashover, insulator breakdown occur.										
		10	-	No abno	ormality			Pass			
В	VSWR										
	Plug 20351-112R-37										
	0.1∼3.0GHz	1.3 M	AX. 5	l -	1.093	1.11	1.07	0.009	Pass		
	3.0∼6.0GHz	1.5 M		_	1.175	1.22	1.14	0.021	Pass		
	6.0∼9.0GHz	1.9 M		-	1.286	1.35	1.22	0.031	Pass		
	Receptacle 20279-001E-01										
	0.1∼3.0GHz	1.3 M	AX. 5	-	1.085	1.09	1.08	0.006	Pass		
	3.0∼6.0GHz	1.4 M	AX. 5	_	1.233	1.27	1.18	0.033	Pass		
	6.0∼9.0GHz	1.8 M	AX. 5	-	1.515	1.60	1.41	0.068	Pass		
С	Unmating force										
	Total force										
	Initial	5 MI	N. 10	N	16.30	17.7	14.2	1.20	Pass		
	30 cycles	3 MI	N. 10	N	11.34	12.8	10.4	0.72	Pass		
	Inner contact										
	Initial	0.15 N	/IN. 10	N	0.368	0.39	0.35	0.012	Pass		
	30 cycles	0.10 N	/IN. 10	N	0.238	0.25	0.22	0.010	Pass		
D	Crimp strength	•	·								
	-	15N N	/IN. 10	N	33.42	35.1	30.9	1.55	Pass		
Е	Durability										
	Contact resistance of main contact										
	Initial	20 M	AX. 10	mΩ	6.19	6.9	5.3	0.59	Pass		
	After testing	After testing 25 MAX.			7.11	8.0	6.2	0.58	Pass		
	Contact resistance of	ground contact	1					•			
	Initial	10 M	AX. 10	mΩ	4.63	5.7	4.0	0.57	Pass		
	After testing	15 M	AX.	11112	6.34	6.9	5.0	0.58	Pass		
	Appearance		<u>·</u>								
	Initial	No abnormality adv	versely affecting 10	_	No abno	ormality			Pass		
	After testing	the performance	shall occur.		No abno	ormality			Pass		

Group	Test iter	ms	Specification	n	Unit	AVE.	MAX.	MIN.	S	Judgement		
Gloup	N	Measurements	opecilication	''	Onit	∧v∟.	IVI/V\.	IVIIIN.		Judgement		
F	Cable retention force											
	Contact	Contact resistance of main contact										
	<u> </u>	nitial	20 MAX.	10	mΩ	6.15	6.9	5.7	0.36	Pass		
	After testing		25 MAX.	10	111122	7.18	7.8	6.3	0.50	Pass		
	Contact resistance of ground contact											
	Initial After testing		10 MAX.	10	mΩ	5.36	6.0	4.5	0.57	Pass		
			15 MAX.	10	11117	6.15	6.9	5.6	0.42	Pass		
	Electrical discontinuity											
	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.											
	7	After testing	-	10	-	No abno	ormality			Pass		
	Appeara	ance	<u> </u>		ļ	<u> </u>			1			
	· · [ii	nitial	No abnormality adversely affecting	40		No abno	ormality			Pass		
		After testing	the performance shall occur.	10	-		ormality			Pass		
G												
G	Vibration Contact resistance of main contact											
	Initial		20 MAX.		1	5.54	6.6	5.0	0.59	Pass		
			25 MAX.	10	mΩ	6.82	7.9	6.0	0.39	Pass		
	After testing 25 MAX. 6.82 7.9 6.0 0.73 Contact resistance of ground contact											
	Initial			<u> </u>	1	L 40	L c o	4.0	1 0 00	l Dana		
	00000		10 MAX. 15 MAX.	10 mΩ		5.13	6.0	4.0	0.69	Pass		
	∟				<u> </u>	6.24	6.9	5.5	0.51	Pass		
	Electrical discontinuity											
	_	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.										
		After testing	-	10	-	- No abnormality						
	1	pearance								T _		
		nitial	No abnormality adversely affecting	10	-	No abno	Pass					
		After testing	the performance shall occur.			No abno	Pass					
Н	Shock											
	Contact resistance of main contact											
	[II	nitial	20 MAX.	10	mΩ	5.54	6.6	5.0	0.59	Pass		
	Ĭ Ĩ	After testing	25 MAX.	10	111122	7.01	7.7	6.1	0.51	Pass		
	C	ontact resistance of grou	ind contact	ı		l						
	[[i	nitial	10 MAX.	40	0	4.79	5.8	4.1	0.58	Pass		
	Į Į	After testing	15 MAX.	10	mΩ	6.06	6.8	5.0	0.72	Pass		
	Elect	trical discontinuity								1		
	_	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.										
	<u>-</u>	After testing	-	10	-	No abno				Pass		
	Appearance											
	I ''-	nitial	No abnormality adversely affecting			No abno	Pass					
		After testing		10	-	No abno	Pass					
	<u> </u>	nici icolilly	r testing the performance shall occur.			וועט מטוונ	Jillality			Газэ		

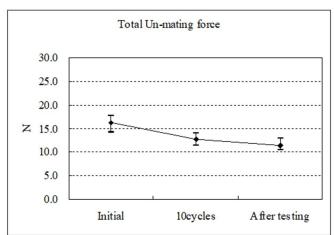
	Test items									
Group	Measurements	Specification	n	Unit	AVE.	MAX.	MIN.	S	Judgement	
J	Thermal shock									
"	Initial	20 MAX.	10		5.91	6.4	5.0	0.44	Pass	
	After testing	25 MAX.		mΩ	6.95	8.0	6.4	0.53	Pass	
	Contact resistance of gro			<u> </u>	0.33	0.0	0.4	0.55	Fass	
	Initial	10 MAX.		mΩ	5.24	6.0	4.2	0.62	Pass	
	After testing	15 MAX.	10		6.08	6.9	5.0	0.63	Pass	
	Insulation residence	13 IVIAN.		<u> </u>	0.00	0.9	3.0	0.03	Fass	
	Initial	500MΩ MIN.			10 0001	MΩ MIN			Pass	
	After testing	100MΩ MIN.	10	МΩ		MΩ MIN			Pass	
		TOUIVILZ IVIIIN.			10,0001	VILZ IVIIIN	•		F 455	
	Appearance Initial	No abnormality adversely affecting			No obn	ormolity			Pass	
		the performance shall occur.	10	-	*******************************	ormality ormality		***************************************	Pass	
	After testing	the periormance shall occur.			וועס מטוו	Pass				
K	Humidity(Steady State)									
	Contact resistance of ma			1	•			1	1	
	Initial	20 MAX.	10	mΩ	6.38	7.0	5.7	0.46	Pass	
	After testing	25 MAX.		11132	7.14	7.9	6.1	0.66	Pass	
	Contact resistance of ground contact									
	Initial	10 MAX.	10	mΩ	5.13	5.8	4.3	0.60	Pass	
	After testing	15 MAX.		11122	6.15	7.0	5.4	0.59	Pass	
	Insulation residence								_	
	Initial	500MΩ MIN.	10	МΩ	10,0001	MΩ MIN			Pass	
	After testing	100MΩ MIN.	10	IVISZ	10,0001	MΩ MIN	•		Pass	
	App <u>earance</u>									
	Initial	No abnormality adversely affecting	10		No abn	ormality			Pass	
	After testing	the performance shall occur.	10	_	No abn	No abnormality				
	Salt water spray									
_	Contact resistance of ma	in contact								
	Initial	20 MAX.			6.05	6.9	5.4	0.44	Pass	
	After testing	25 MAX.	10	10 mΩ	6.76	7.7	6.2	0.54	Pass	
	Contact resistance of gro			1	1 0.10		V. <u>L</u>	1 0.01	. 450	
	Initial	10 MAX.		_	4.80	5.3	4.0	0.35	Pass	
	After testing	15 MAX.	10	mΩ	6.06	6.9	5.0	0.66	Pass	
	Appearance	10 141/ 01.		<u> </u>	0.00	0.0	0.0	0.00	1 1 400	
	' ' -	No abnormality adversely affecting			No ahn	ormality			Pass	
	After testing	the performance shall occur.	10	-		ormality			Pass	
L	rator tosting	5.5 portormando onan dodar.		1	וועט מטוו	1 433				

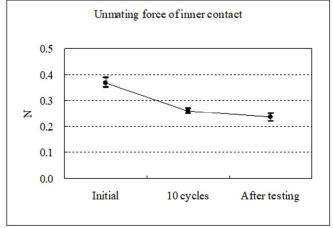
Group	Test items	Specification	n	Unit	AVE.	MAX.	MIN.	S	Judgement			
	Measurements								1			
M	High Temperature Life											
	Contact resistance of main contact											
	Initial	20 MAX.	10	mΩ	5.91	6.8	5.1	0.52	Pass			
	After testing 25 MAX.		10	11122	7.42	8.0	6.8	0.40	Pass			
	Contact resistance of ground contact											
	Initial	10 MAX.	10	mΩ	5.03	5.7	4.1	0.60	Pass			
	After testing	15 MAX.	10	111122	5.86	6.7	5.1	0.59	Pass			
	Appearance											
	Initial											
	After testing	the performance shall occur.	10		No abnormality				Pass			
N	Solder ability											
		of the dipped surface shall be	e even	ly wet.								
	After testing	-	10	Í -	No abn	Pass						
Р	Reflow soldering heat resistan	ce										
	Appearance											
	Spec: No abnormality a	dversely affecting the perform	rmanc	e shall	occur.							
	After testing	- '	10	-	1	ormality			Pass			



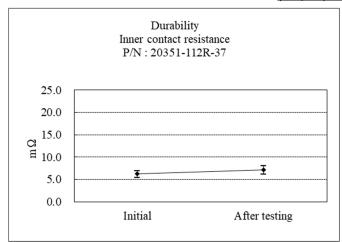


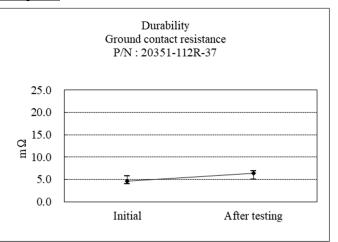
(Graph 1) VSWR



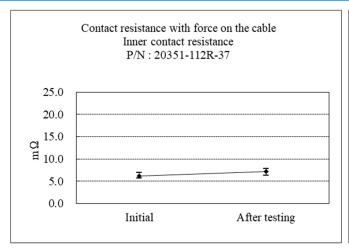


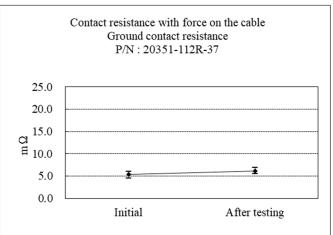
(Graph 2) Unmating force



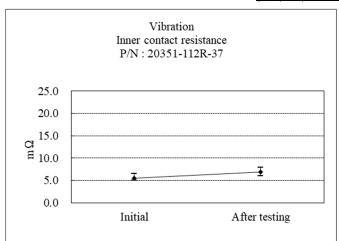


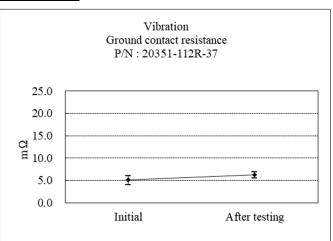
(Graph 3) Durability



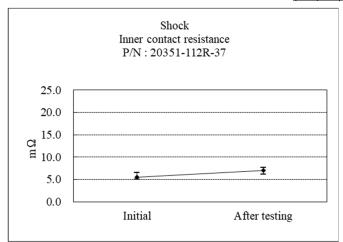


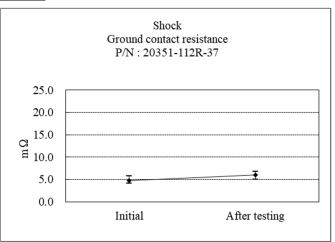
(Graph 4) Cable Retention Force



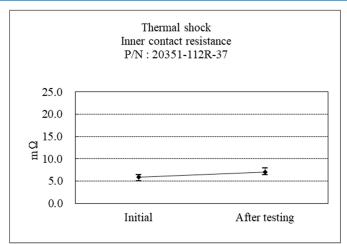


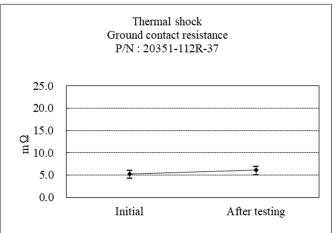
(Graph 5) Vibration



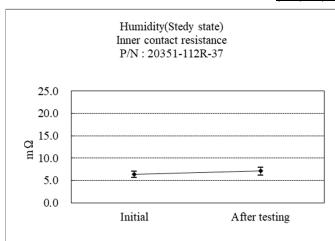


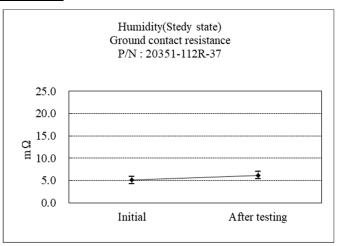
(Graph 6) Shock



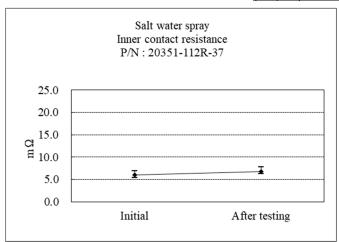


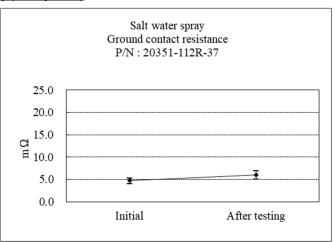
(Graph 7) Thermal Shock



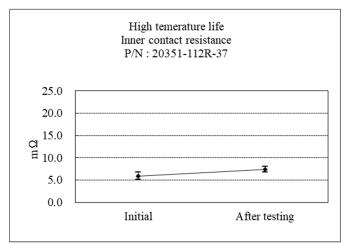


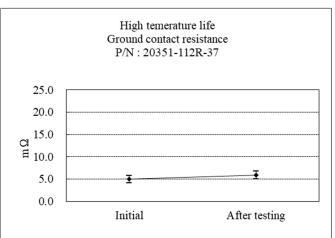
(Graph 8) Humidity (Steady State)





(Graph 9) Salt Water Spray





(Graph 10) High Temperature Life