

MHF® 5 / 5L Connector (φ0.84 Cable)

Part No. MHF 5L Plug:20714-001R-81, MHF 5 Receptacle:20566-001E-01

Test Report

Product Specification no. PRS-2236

4	T26061	July 10, 2026	M Toida	T. Takuno	K. Yufu
3	T22103	June 23, 2022	K. Watanabe	K. Yufu	Y. Hashimoto
2	T21108	October 28, 2021	K. Ikeshita		M. Takemoto
1	T19039	March 8, 2019	K. Tanaka	T. Yamauchi	T. Hirakawa
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

To evaluate the performance of MHF 5 / 5L Connector in accordance with PRS-2236.

2. Specimen

- (1) MHF 5L Plug (Part No: 20714-001R-81)
Cable: AWG#33 coaxial cable (Jacket diameter 0.84 mm)
- (2) MHF 5 Receptacle (Part No: 20566-001E-01)

3. Test Sequence

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

4. Result

See Table 2, Graph 1 to 11. For the details of the testing conditions and requirements, see PRS-2236.

The “n” in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-2236.

Table 1 Test Sequence and Sample Quantity

Test Item		Group													
		A	B	C	D	E	F	G	H	J	K	L	M	N	P
Contact Resistance				1,3			1,3	1,3	1,5	1,5	1,3	1,3	1,3		
Insulation Resistance									2,6	2,6					
D. W. Voltage									3,7	3,7					
VSWR		1													
Unmating Force			1												
Durability				2											
Crimp Strength					1										
Cable Retention Force						1									
Vibration							2								
Shock								2							
Humidity (Steady State)									4						
Thermal Shock										4					
High Temperature Life											2				
H ₂ S Gas												2			
Salt Water Spray													2		
Solder ability														1	
Soldering Heat Resistance															1
Specimen quantity (pcs.)	Plug	10	10	10	10	10	10	10	10	10	10	10	10	-	-
	Receptacle	5			-									10	10

※Numbers indicate sequence in which tests are performed.

Table 2-1

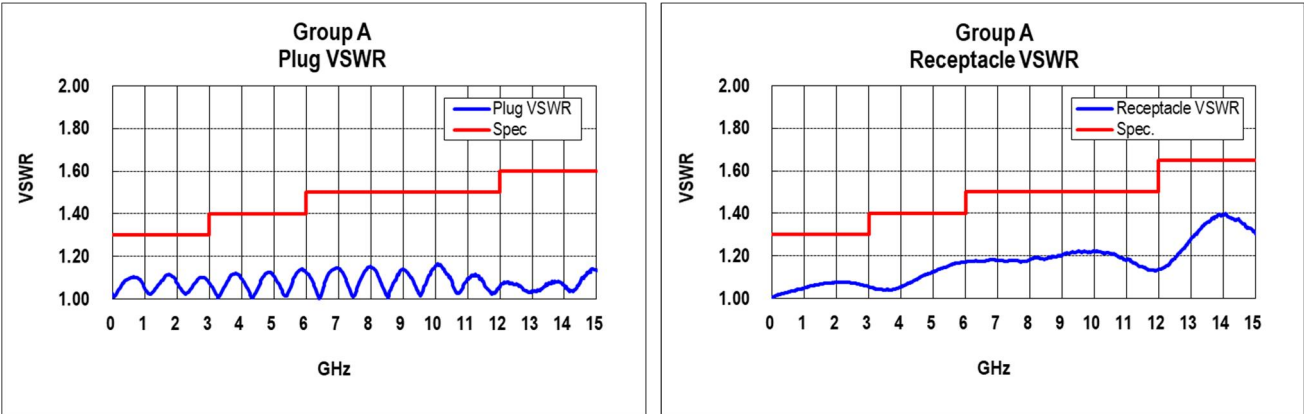
Group	Test items	Measurements	Specification	N	Unit	AVE.	MAX.	MIN.	S	Judgement
A	VSWR									
	Plug									
		0.1 - 3.0GHz	1.30 MAX.	10	-	1.118	1.13	1.10	0.007	Pass
		3.0 - 6.0GHz	1.40 MAX.			1.142	1.17	1.12	0.014	Pass
		6.0 - 9.0 GHz	1.50 MAX.			1.149	1.17	1.12	0.014	Pass
		9.0 - 12.0 GHz	1.50 MAX.			1.151	1.17	1.12	0.015	Pass
		12.0 - 15.0 GHz	1.60 MAX.			1.145	1.19	1.11	0.018	Pass
	Receptacle									
		0.1 - 3.0GHz	1.30 MAX.	5	-	1.083	1.09	1.07	0.008	Pass
		3.0 - 6.0GHz	1.40 MAX.			1.180	1.20	1.17	0.012	Pass
		6.0 - 9.0 GHz	1.50 MAX.			1.213	1.23	1.19	0.018	Pass
		9.0 - 12.0 GHz	1.50 MAX.			1.234	1.26	1.22	0.017	Pass
		12.0 - 15.0 GHz	1.65 MAX.			1.410	1.45	1.38	0.033	Pass
B	Unmating force									
		Initial	5 N MIN.	10	N	11.15	11.9	10.4	0.32	Pass
		After 30 cycles	3 N MIN.			7.24	7.9	6.2	0.24	Pass
C	Durability									
	Contact resistance of main contact									
		Initial	20mΩ MAX.	10	mΩ	7.30	8.1	6.4	0.59	Pass
		After testing	-			8.21	10.0	6.8	1.04	Pass
		ΔR	ΔR 20mΩ MAX.			0.90	3.0	-0.9	1.29	Pass
	Contact resistance of ground contact									
		Initial	20mΩ MAX.	10	mΩ	4.84	6.0	3.9	0.68	Pass
		After testing	-			5.05	6.1	4.3	0.58	Pass
		ΔR	ΔR 100mΩ MAX.			0.31	1.8	-1.3	0.87	Pass
	Appearance									
		Spec: No abnormality adversely affecting the performance shall occur								
		Initial	No abnormality	10	-	No abnormality				Pass
		After testing				No abnormality				Pass
D	Crimp strength									
		After testing	10N MIN.	10	N	18.66	19.8	17.2	0.69	Pass
E	Cable Retention Force									
	Electrical discontinuity									
		Spec: No electrical discontinuity greater than 1μs shall occur.								
		After testing	-	10	-	No discontinuity				Pass
	Appearance									
		Spec: No abnormality adversely affecting the performance shall occur								
F	Vibration									
	Contact resistance of main contact									
		Initial	20mΩ MAX.	10	mΩ	7.64	8.1	7.0	0.36	Pass
		After testing	-			7.42	7.9	6.8	0.40	Pass
		ΔR	ΔR 20mΩ MAX.			-0.21	0.4	-0.8	0.33	Pass
	Contact resistance of ground contact									
		Initial	20mΩ MAX.	10	mΩ	4.29	4.7	3.9	0.27	Pass
		After testing	-			4.36	4.8	4.0	0.27	Pass
		ΔR	ΔR 100mΩ MAX.			0.07	0.6	-0.4	0.41	Pass
	Electrical discontinuity									
		Spec: No electrical discontinuity greater than 1μs shall occur.								
		After testing	-	10	-	No discontinuity				Pass
	Appearance									
		Spec: No abnormality adversely affecting the performance shall occur								
		Initial	No abnormality	10	-	No abnormality				Pass
		After testing				No abnormality				Pass

Table 2-2

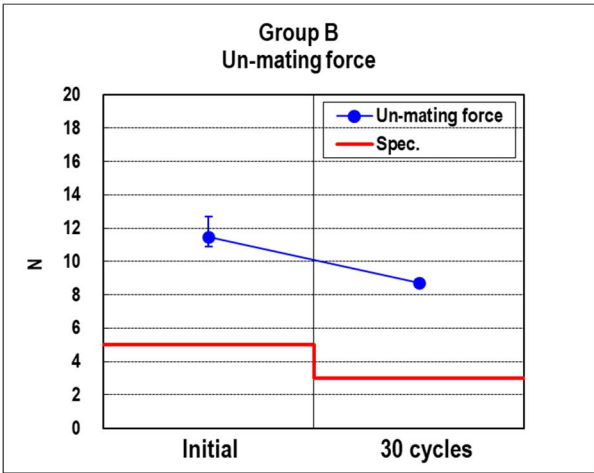
Group	Test items	Measurements	Specification	N	Unit	AVE.	MAX.	MIN.	S	Judgement
G	Shock									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.30	7.7	7.0	0.27	Pass	
	After testing	-			7.01	7.7	6.5	0.37	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.30	0.2	-1.0	0.38	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	3.81	4.1	3.5	0.19	Pass	
	After testing	-			4.00	4.4	3.5	0.29	Pass	
	ΔR	ΔR 100mΩ MAX.			0.19	0.6	-0.6	0.31	Pass	
	Electrical discontinuity									
	Spec: No electrical discontinuity grater than 1μs shall occur.									
	After testing	-	10	-	No discontinuity				Pass	
	Appearance									
	Spec: No abnormality adversely affecting the performance shall occur									
	Initial	No abnormality	10	-	No abnormality				Pass	
	After testing				No abnormality				Pass	
H	Humidity (Steady State)									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.50	8.2	7.0	0.43	Pass	
	After testing	-			7.46	9.1	6.6	0.70	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.04	1.0	-0.7	0.47	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	4.14	4.6	3.8	0.23	Pass	
	After testing	-			5.17	6.5	4.6	0.52	Pass	
	ΔR	ΔR 100mΩ MAX.			1.03	2.0	0.5	0.46	Pass	
	Insulation residence									
	Initial	500MΩ MIN.	10	MΩ	10,000MΩ MIN.				Pass	
	After testing	100MΩ MIN.			10,000MΩ MIN.				Pass	
	Dielectric withstanding voltage									
	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.									
	After testing	-	10	-	No abnormality				Pass	
	Appearance									
	Spec: No abnormality adversely affecting the performance shall occur									
	Initial	No abnormality	10	-	No abnormality				Pass	
	After testing				No abnormality				Pass	
J	Thermal shock									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.73	8.4	7.0	0.42	Pass	
	After testing	-			7.39	8.0	7.0	0.33	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.34	0.2	-0.8	0.31	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	4.28	4.9	3.9	0.30	Pass	
	After testing	-			6.12	7.2	5.1	0.73	Pass	
	ΔR	ΔR 100mΩ MAX.			1.84	3.0	0.2	0.90	Pass	
	Insulation residence									
	Initial	500MΩ MIN.	10	MΩ	10,000MΩ MIN.				Pass	
	After testing	100MΩ MIN.			10,000MΩ MIN.				Pass	
	Dielectric withstanding voltage									
	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.									
	After testing	-	10	-	No abnormality				Pass	
	Appearance									
	Spec: No abnormality adversely affecting the performance shall occur									
	Initial	No abnormality	10	-	No abnormality				Pass	
	After testing				No abnormality				Pass	

Table 2-3

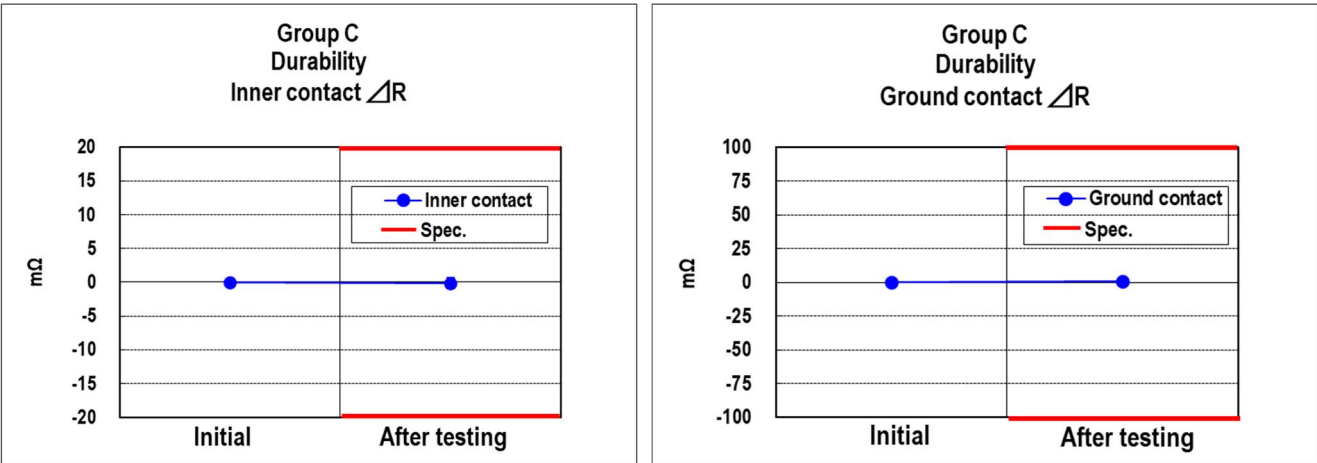
Group	Test items	Measurements	Specification	N	Unit	AVE.	MAX.	MIN.	S	Judgement
K	High Temperature Life									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.74	8.2	7.3	0.31	Pass	
	After testing	-			7.02	7.6	6.4	0.43	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.73	0.0	-1.3	0.46	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	4.25	4.6	3.9	0.23	Pass	
	After testing	-			4.34	4.8	4.0	0.23	Pass	
	ΔR	ΔR 100mΩ MAX.			0.09	0.7	-0.4	0.34	Pass	
	Appearance									
Spec: No abnormality adversely affecting the performance shall occur										
Initial	No abnormality	10	-	No abnormality				Pass		
After testing				No abnormality				Pass		
L	H ₂ S Gas									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.71	8.7	6.4	0.66	Pass	
	After testing	-			7.05	8.2	6.3	0.64	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.65	0.3	-1.2	0.47	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	4.08	5.0	3.1	0.47	Pass	
	After testing	-			4.86	5.3	4.2	0.37	Pass	
	ΔR	ΔR 100mΩ MAX.			0.78	1.4	0.0	0.42	Pass	
	Appearance									
Spec: No abnormality adversely affecting the performance shall occur										
After testing	No abnormality	10	-	No abnormality				Pass		
M	Salt water spray									
	Contact resistance of main contact									
	Initial	20mΩ MAX.	10	mΩ	7.51	8.0	6.8	0.37	Pass	
	After testing	-			7.46	8.5	6.7	0.61	Pass	
	ΔR	ΔR 20mΩ MAX.			-0.05	1.2	-1.1	0.75	Pass	
	Contact resistance of ground contact									
	Initial	20mΩ MAX.	10	mΩ	4.15	4.5	3.6	0.25	Pass	
	After testing	-			5.41	6.2	4.6	0.45	Pass	
	ΔR	ΔR 100mΩ MAX.			1.26	2.0	0.6	0.45	Pass	
	Appearance									
Spec: No abnormality adversely affecting the performance shall occur										
After testing	No abnormality	10	-	No abnormality				Pass		
N	Solder ability									
	Spec: More than 95% of the dipped surface becomes wet and the pinhole that should not gather at one point is less than 5%									
	After testing	-	10	-	No abnormality				Pass	
P	Reflow soldering heat resistance									
	Appearance									
	Spec: No abnormality adversely affecting the performance shall occur.									
	After testing	-	10	-	No abnormality				Pass	



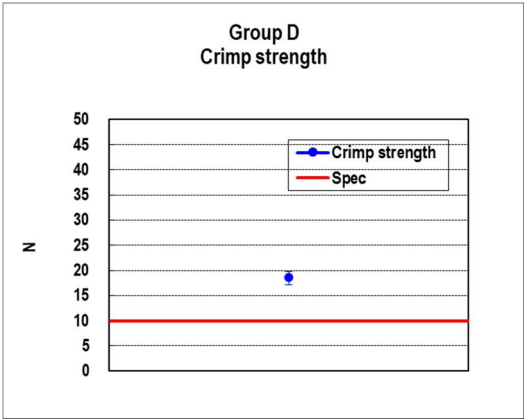
Graph 1 VSWR



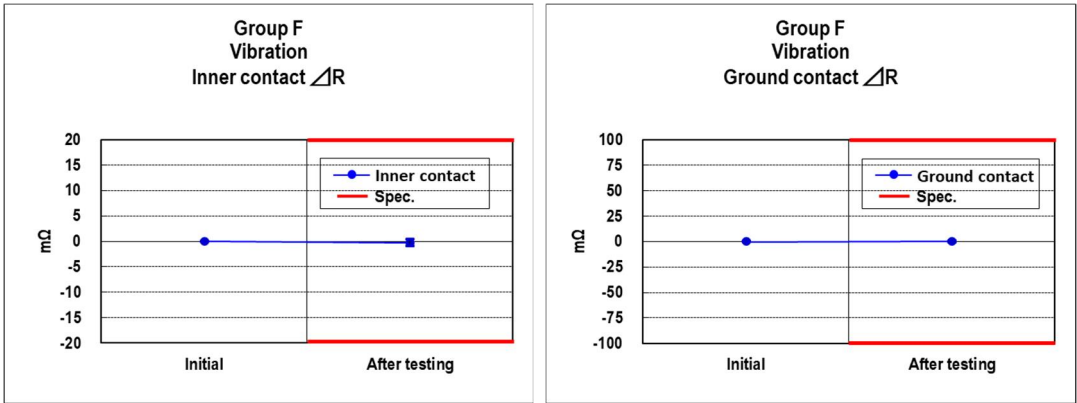
Graph 2 Unmating force



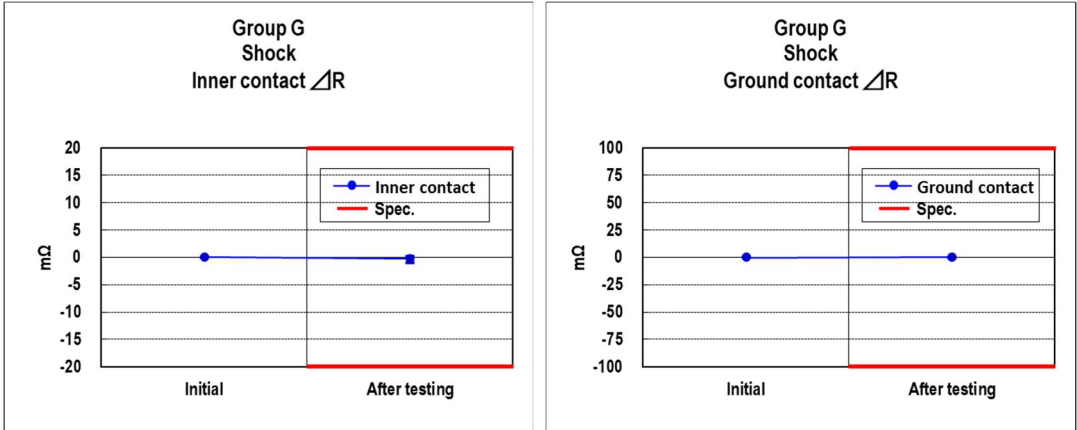
Graph 3 Durability



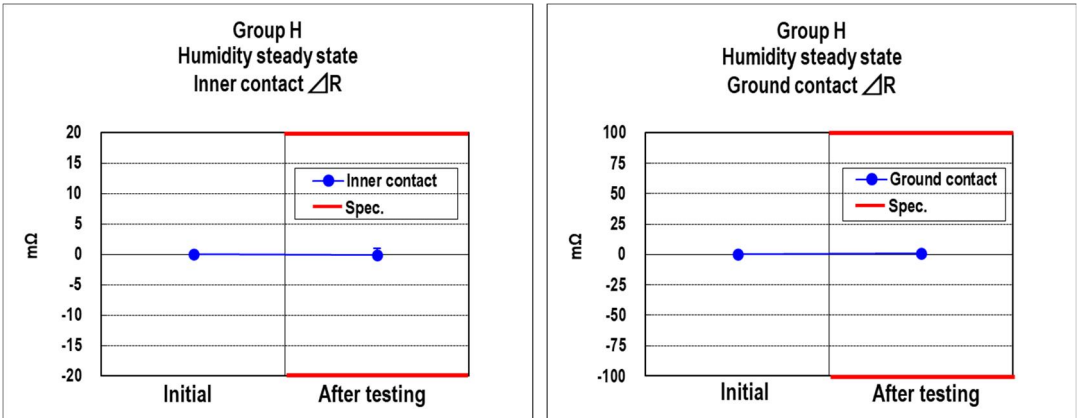
Graph 4 Crimp Strength



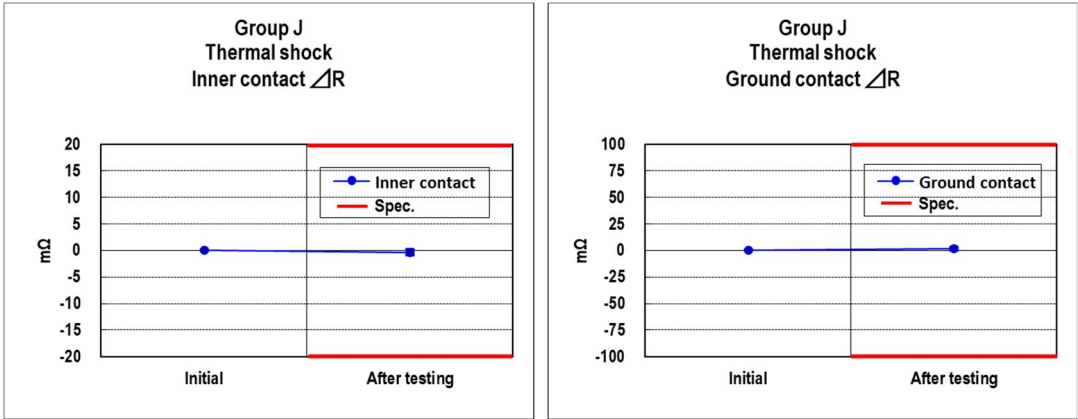
Graph 5 Vibration



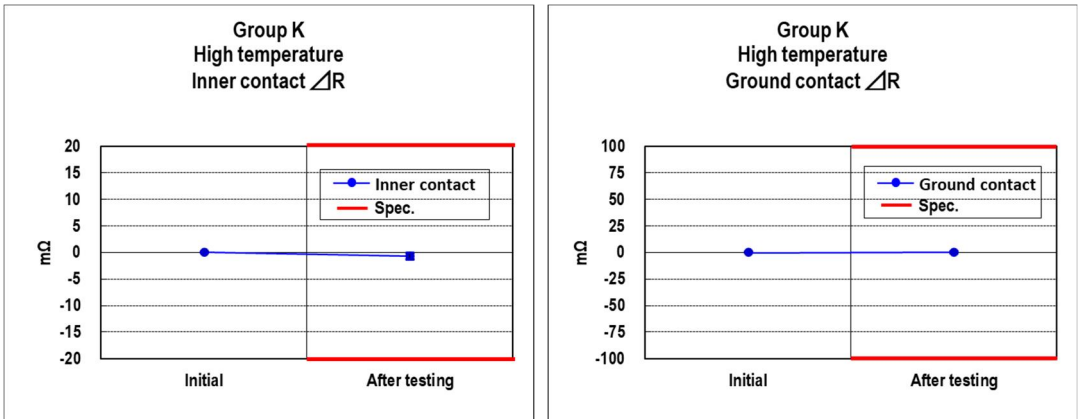
Graph 6 Shock



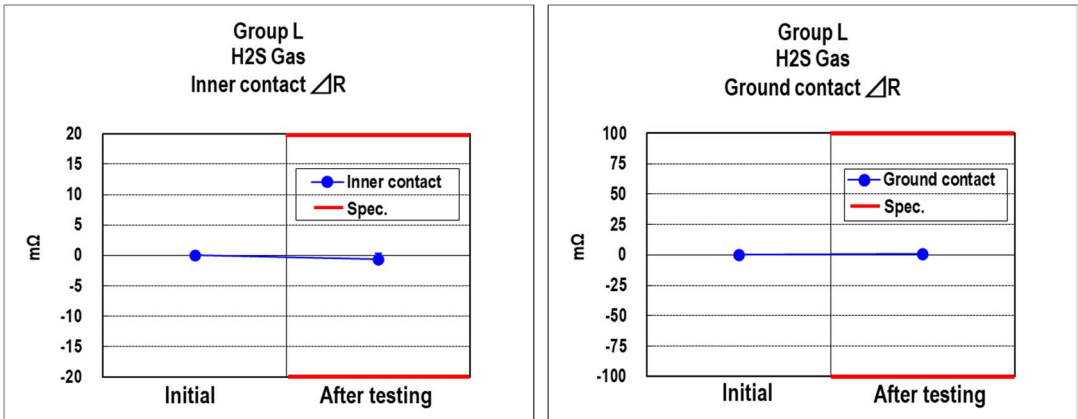
Graph 7 Humidity (Steady State)



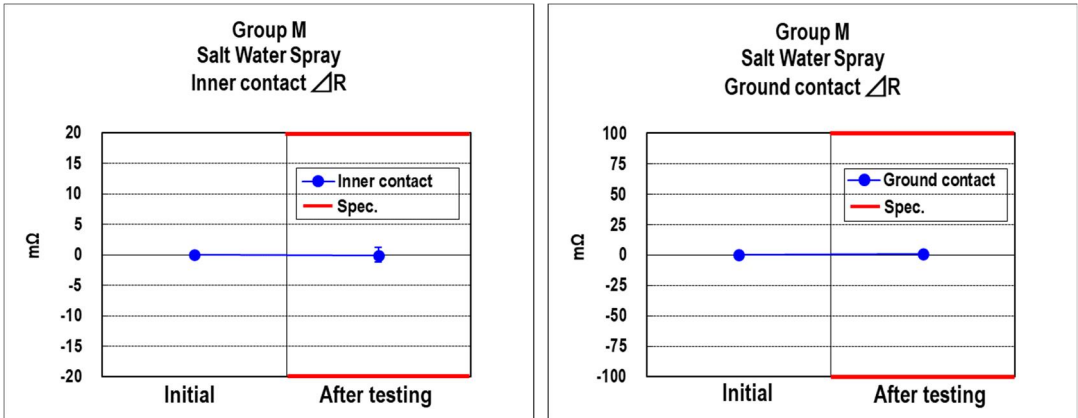
Graph 8 Thermal shock



Graph 9 High Temperature Life



Graph 10 H₂S Gas



Graph 11 Salt water spray