MP-A 02

Part No. 3182-0001

Test Report

Product Specification no. PRS-2082

Rev.	ECN	Date	Prepared by	Checked by	Approved by
4	T24054	August 20, 2024	T. Hayakawa	T. Takuno	K. Yufu
3	T21135	November 18, 2021	H. Takao	K. Yufu	M. Takemoto
2	T20039	June 4, 2020	K. Shinozaki	J. Tonai	Y. Hashimoto
1	T16084	June 1, 2016	M. Nomoto	S. Taguchi	K. Narita

1. Purpose

To evaluate the performance of MP-A 02Connector in accordance with PRS-2082.

2. Specimen

MP-A 02 (Part No. 3182-0001)

3. Test Sequence

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

4. Result

See Table 2-1 to 2-3, Graph 1-1 to 1-13. For the details of the testing conditions and requirements, see PRS-2082.
The “n” in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-2082.

Table 1 Test Sequence and Sample Quantity

Test Item	Group									
	A	B	C	D	E	F	G	H	J	K
Contact resistance		1,3	1,3	1,3	1,3	1,3	1,3	1,3		
Mating force	1,4									
Un-mating force	2,5									
Durability	3	2								
Vibration			2							
Shock				2						
Thermal shock					2					
High temperature life						2				
Humidity (Steady State)							2			
Low-temperature test								2		
Solder ability									1	
Soldering heat resistance										1
Specimen quantity.	10	10	5	5	5	5	5	5	5	5

※Numbers indicate test sequences

Table 2-1 Test Result

	Test Item / Measurements		Spec.	n	Unit	Data AVE.	Data MAX.	Data MIN.	Data σ	Judge.
A	Mating Force									
	Cable Clamp 3mm	Initial	25 MAX.	10	N	7.010	8.20	6.10	0.743	Pass
		5cycles				3.120	3.80	2.50	0.487	Pass
	Cable Clamp 6mm	Initial		10	N	7.780	9.10	6.60	0.760	Pass
		5cycles				3.780	4.50	3.20	0.426	Pass
	Cable Jacket φ1.13	Initial		10	N	8.050	9.00	7.40	0.521	Pass
		5cycles				3.250	3.60	2.90	0.259	Pass
	Un-mating Force									
	Cable Clamp 3mm	Initial	2 MIN.	10	N	2.710	3.50	2.30	0.363	Pass
		5cycles	1 MIN.			1.950	2.30	1.60	0.242	Pass
	Cable Clamp 6mm	Initial	2 MIN.	10	N	2.960	3.60	2.50	0.372	Pass
		5cycles	1 MIN.			2.190	2.60	1.50	0.328	Pass
	Cable Jacket φ1.13	Initial	2 MIN.	10	N	3.890	4.60	3.40	0.378	Pass
		5cycles	1 MIN.			3.030	3.70	2.40	0.430	Pass
B	Durability									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	10	mΩ	5.875	6.12	5.54	0.172	Pass
		5cycles				5.970	6.56	5.52	0.308	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	10	mΩ	5.709	6.01	5.49	0.185	Pass
		5cycles				5.938	6.29	5.50	0.214	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
C	Shock									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.728	6.93	6.45	0.189	Pass
		After test				6.737	6.95	6.18	0.318	Pass
	Electrical discontinuity	During test	1μs MAX.		-	No discontinuity				
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.027	6.26	5.84	0.195	Pass
		After test				6.514	6.96	6.14	0.306	Pass
	Electrical discontinuity	During test	1μs MAX.		-	No discontinuity				
	Apearance	After test	No abnormality		-	No abnormality				Pass

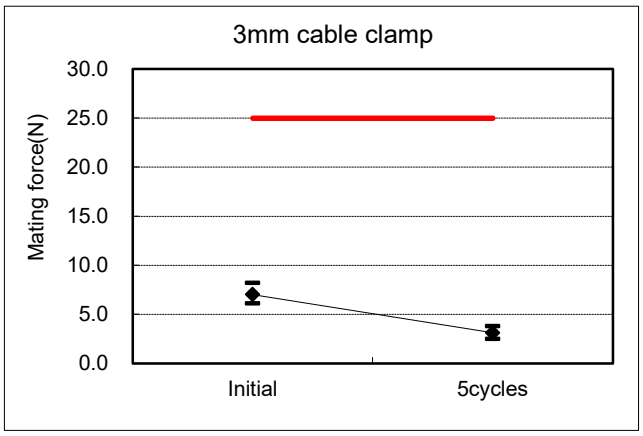
Table 2-2 Test Result

D	Vibration									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.728	6.93	6.45	0.189	Pass
		After test				6.550	6.88	6.10	0.303	Pass
	Electrical discontinuity	During test	1μs MAX.		-	No discontinuity				
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.027	6.26	5.84	0.195	Pass
		After test				6.338	6.62	6.15	0.182	Pass
	Electrical discontinuity	During test	1μs MAX.		-	No discontinuity				
	Apearance	After test	No abnormality		-	No abnormality				Pass

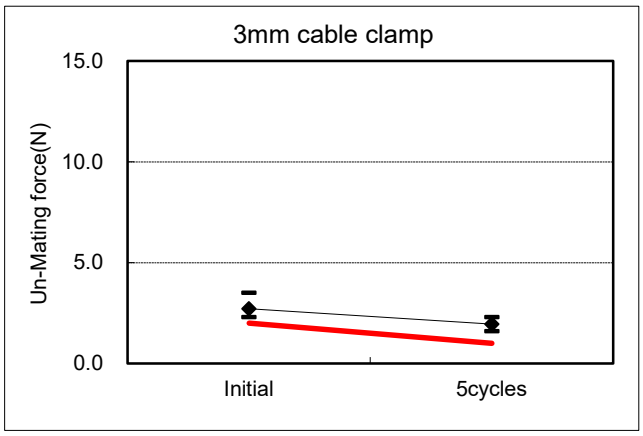
	Test Item		Spec.	n	Unit	Data				Judge.
	Measurements					AVE.	MAX.	MIN.	σ	
E	Cold test									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.680	6.97	6.40	0.261	Pass
		After test				6.369	6.73	6.03	0.257	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.574	6.82	6.32	0.210	Pass
		After test				6.459	6.70	6.06	0.241	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
F	Heat test									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.277	6.49	6.17	0.139	Pass
		After test				6.511	6.82	6.24	0.228	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.164	6.31	5.83	0.202	Pass
		After test				6.622	6.78	6.40	0.174	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass

Table 2-3 Test Result

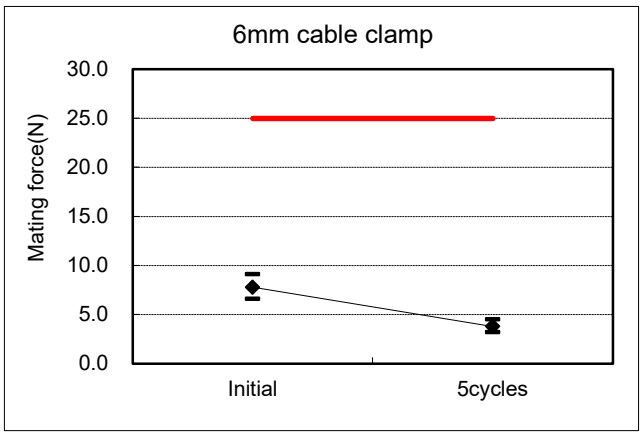
G	Thermal Shock									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.455	6.86	5.88	0.416	Pass
		After test				6.731	6.90	6.57	0.131	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.108	6.42	5.84	0.254	Pass
		After test				6.517	6.83	6.29	0.278	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
H	Humidity (Steady state)									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.124	6.40	5.91	0.189	Pass
		After test				6.197	6.51	6.00	0.206	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.147	6.61	5.89	0.298	Pass
		After test				6.321	6.54	6.14	0.145	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
J	Surface Mount Solderability test									
	Solder wetting area	After test	95 MIN	5	%	95 MIN.				Pass
K	Resistance to Reflow Soldering Heat									
	Cable clamp 3mm									
	Contact Resistance	After test	70 MAX	5	mΩ	5.993	6.30	5.44	0.363	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass
	Cable clamp 6mm									
	Contact Resistance	After test	70 MAX	5	mΩ	6.191	6.35	5.83	0.229	Pass
	Apearance	After test	No abnormality		-	No abnormality				Pass



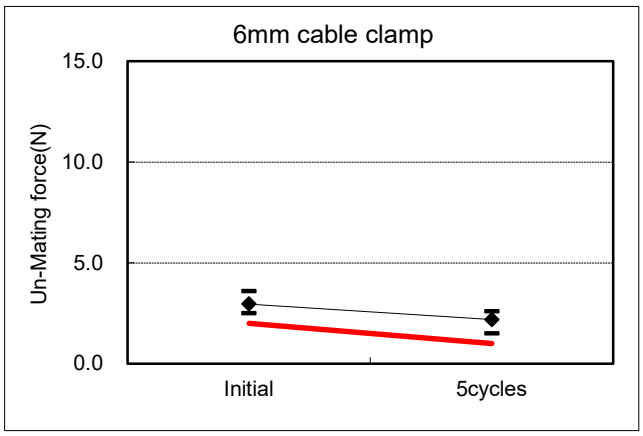
Graph1-1 Mating force(3mm cable clamp)



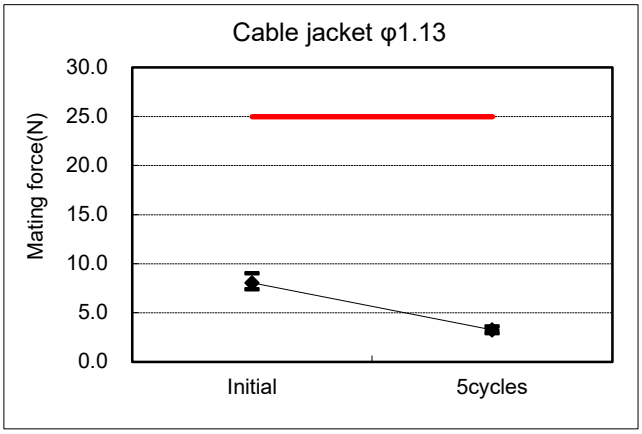
Graph1-2 Un-mating force(3mm cable clamp)



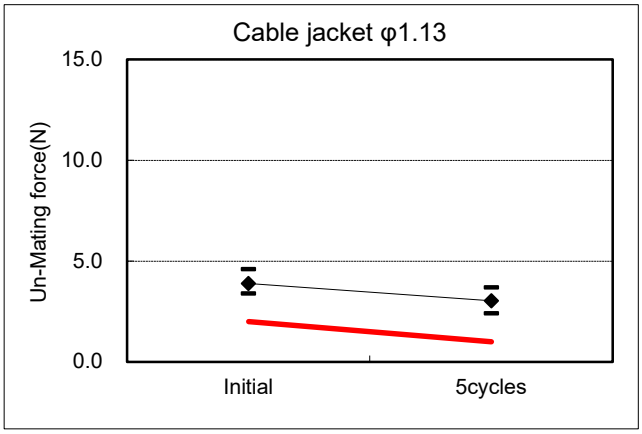
Graph1-3 Mating force (6mm cable clamp)



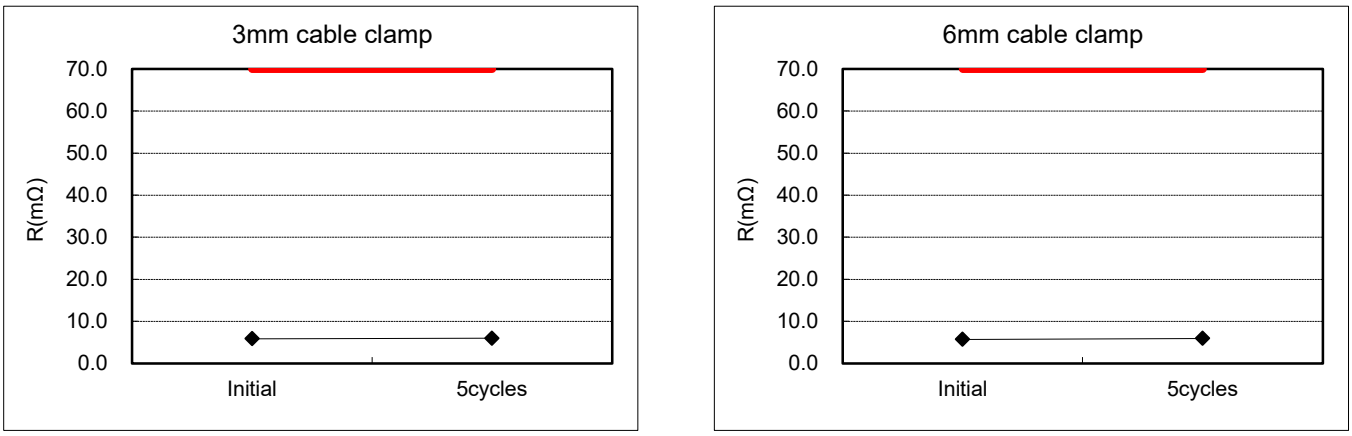
Graph1-4 Un-mating force (6mm cable clamp)



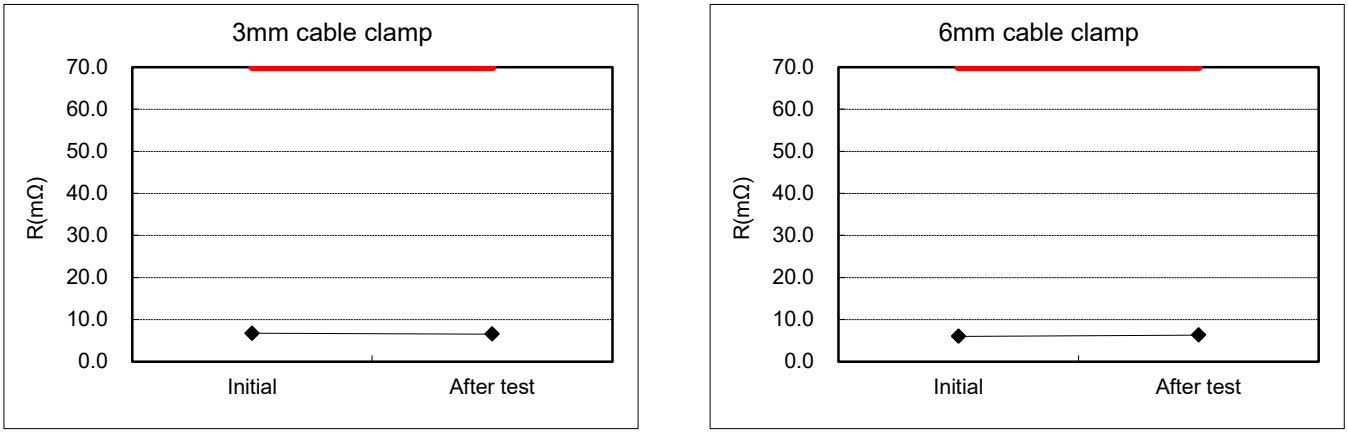
Graph1-5 Mating force(Cable jacket φ1.13)



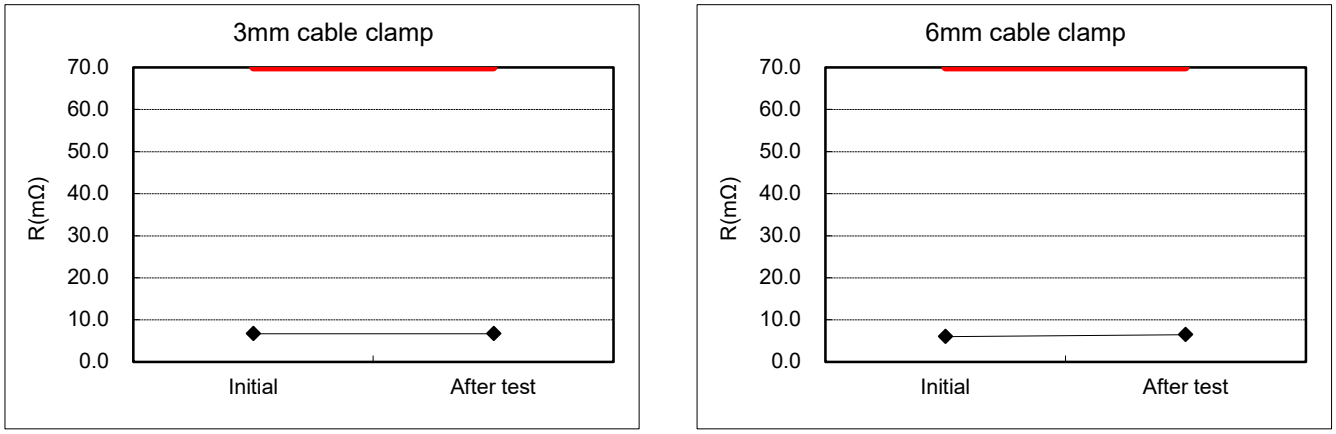
Graph1-6 Un-mating force(Cable jacket φ1.13)



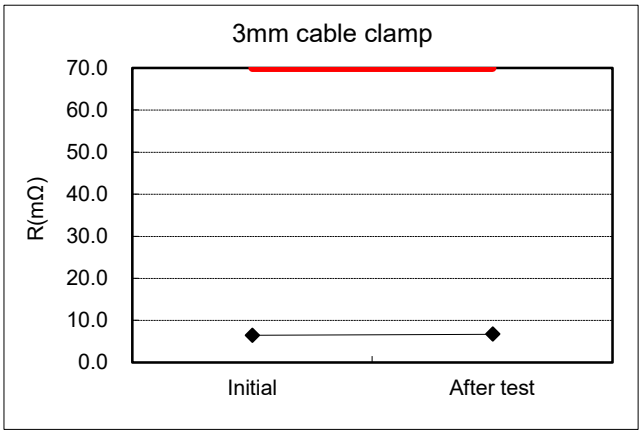
Graph1-7 Durability

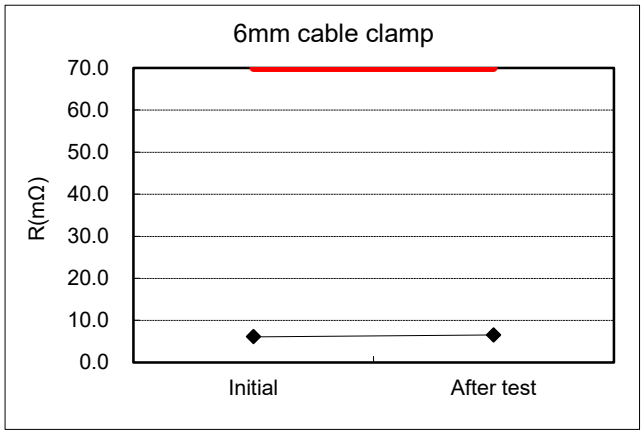


Graph1-8 Vibration

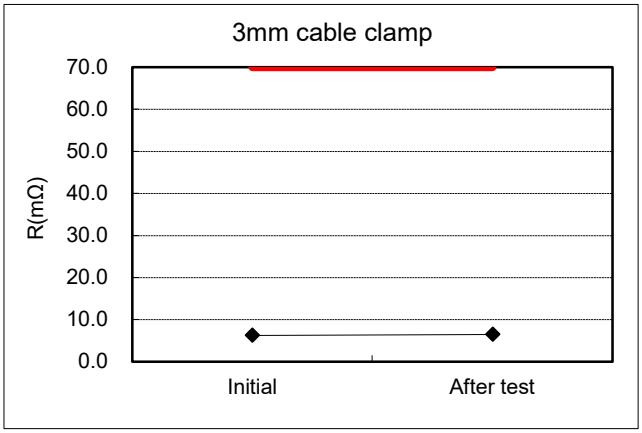


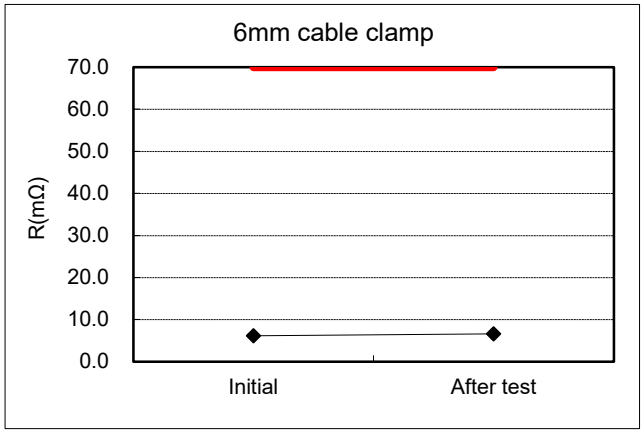
Graph1-9 Shock



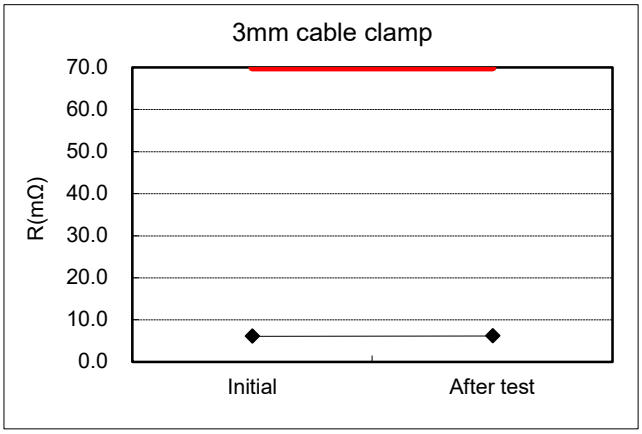


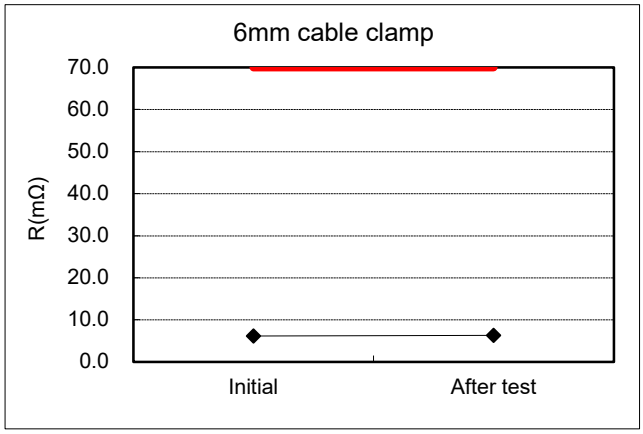
Graph1-10 Thermal Shock



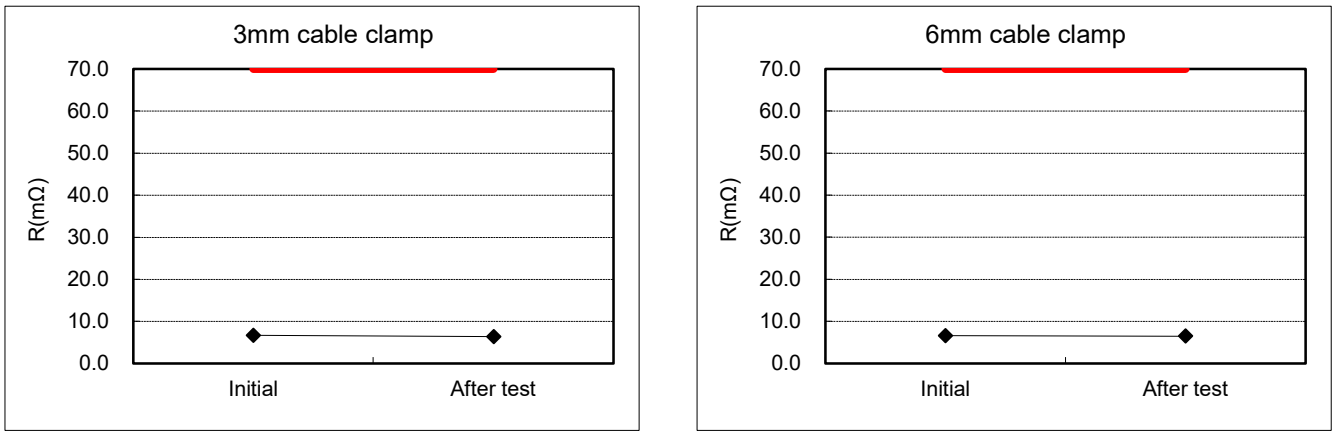


Graph1-11 High temperature life





Graph1-12 Humidity （Steady state）



Graph1-13 Low-temperature test