MP-A 02

Part No. 3182-0001

Test Report

Product Specification no. PRS-2082

Rev.	ECN	Date	Prepared by	Checked by	Approved by
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
0	T15085	June 8, 2015	S. Suzuki	T. Tagawa	T. Takano

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	OK
		5cycles				3.120	3.80	2.50	0.487	OK
	Cable Clamp 6mm	Initial		10	N	7.780	9.10	6.60	0.760	OK
		5cycles				3.780	4.50	3.20	0.426	OK
	Cable Jacket φ1.13	Initial		10	N	8.050	9.00	7.40	0.521	OK
		5cycles				3.250	3.60	2.90	0.259	OK
	Un-mating Force									
	Cable Clamp 3mm	Initial	2 MIN.	10	N	2.710	3.50	2.30	0.363	OK
		5cycles	1 MIN.			1.950	2.30	1.60	0.242	OK
	Cable Clamp 6mm	Initial	2 MIN.	10	N	2.960	3.60	2.50	0.372	OK
		5cycles	1 MIN.			2.190	2.60	1.50	0.328	OK
	Cable Jacket φ1.13	Initial	2 MIN.	10	N	3.890	4.60	3.40	0.378	OK
		5cycles	1 MIN.			3.030	3.70	2.40	0.430	OK

B	Durability									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	10	mΩ	5.875	6.12	5.54	0.172	OK
		5cycles				5.970	6.56	5.52	0.308	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	10	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	10	mΩ	5.709	6.01	5.49	0.185	OK
		5cycles				5.938	6.29	5.50	0.214	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	10	-	No abnormality				OK

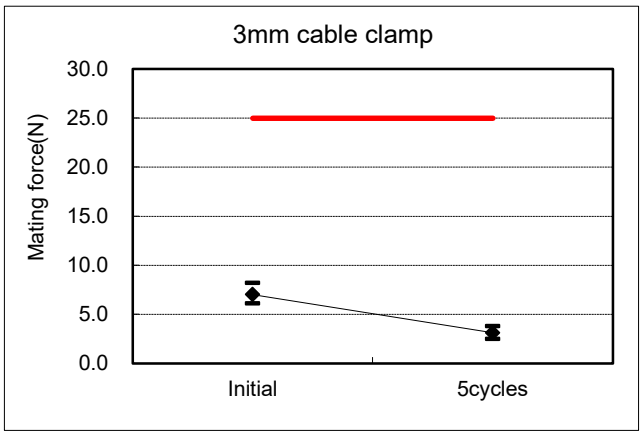
C	Vibration									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.728	6.93	6.45	0.189	OK
		After test				6.550	6.88	6.10	0.303	OK
	Electrical discontinuity	Spec. No electrical discontinuity greater than 1μs shall occur.								
		During test	—	5	-	No discontinuity				OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.027	6.26	5.84	0.195	OK
		After test				6.338	6.62	6.15	0.182	OK
	Electrical discontinuity	Spec. No electrical discontinuity greater than 1μs shall occur.								
		During test	—	5	-	No discontinuity				OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK

Table 2-2 Test Result

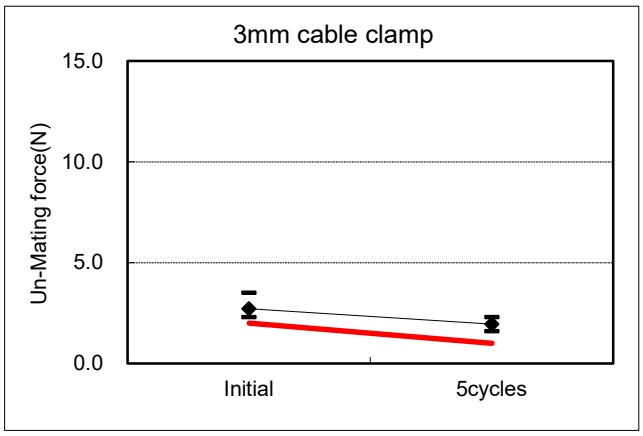
	Test Item / Measurements		Spec.	n	Unit	Data AVE.	Data MAX.	Data MIN.	Data σ	Judge.
D	Shock									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.728	6.93	6.45	0.189	OK
		After test				6.737	6.95	6.18	0.318	OK
	Electrical discontinuity	Spec. No electrical discontinuity greater than 1μs shall occur.								
		During test	—	5	-	No discontinuity				OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.027	6.26	5.84	0.195	OK
		After test				6.514	6.96	6.14	0.306	OK
	Electrical discontinuity	Spec. No electrical discontinuity greater than 1μs shall occur.								
		During test	—	5	-	No discontinuity				OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
E	Thermal Shock									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.455	6.86	5.88	0.416	OK
		After test				6.731	6.90	6.57	0.131	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.108	6.42	5.84	0.254	OK
		After test				6.517	6.83	6.29	0.278	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
F	High temperature life									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.277	6.49	6.17	0.139	OK
		After test				6.511	6.82	6.24	0.228	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.164	6.31	5.83	0.202	OK
		After test				6.622	6.78	6.40	0.174	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK

Table 2-3 Test Result

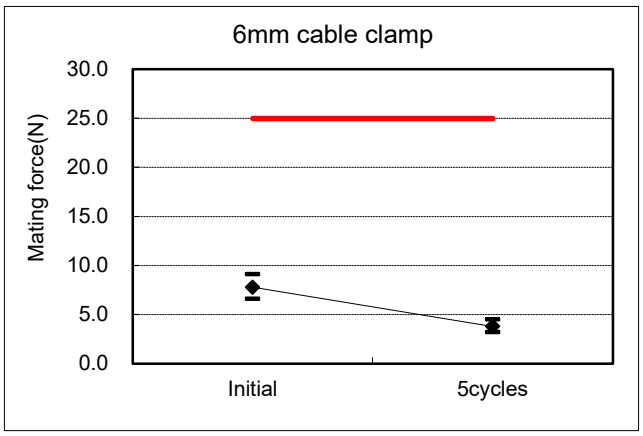
	Test Item / Measurements		Spec.	n	Unit	Data AVE.	Data MAX.	Data MIN.	Data σ	Judge.
G	Humidity (Steady state)									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.124	6.40	5.91	0.189	OK
		After test				6.197	6.51	6.00	0.206	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.147	6.61	5.89	0.298	OK
		After test				6.321	6.54	6.14	0.145	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
H	Low-temperature test									
	Cable clamp 3mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.680	6.97	6.40	0.261	OK
		After test				6.369	6.73	6.03	0.257	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Contact Resistance	Initial	70 MAX	5	mΩ	6.574	6.82	6.32	0.210	OK
		After test				6.459	6.70	6.06	0.241	OK
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
J	Surface Mount Solderability test									
	Solder wetting area	After test	95 MIN	5	%	95 MIN.				OK
K	Resistance to Reflow Soldering Heat									
	Cable clamp 3mm									
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK
	Cable clamp 6mm									
	Apearance	Spec. No abnormality adversely affecting the performance shall occur.								
		After test	—	5	-	No abnormality				OK



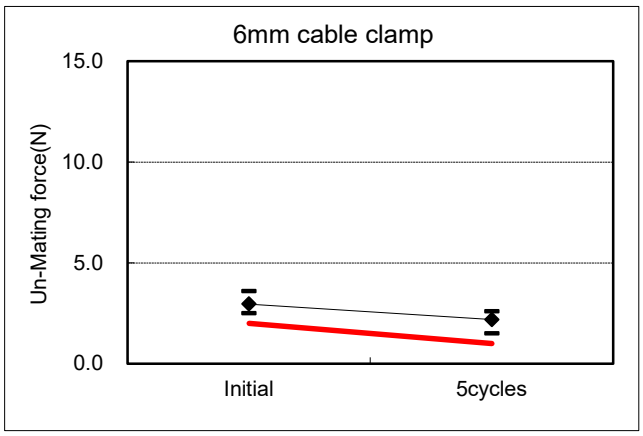
Graph1-1 Mating force(3mm cable clamp)



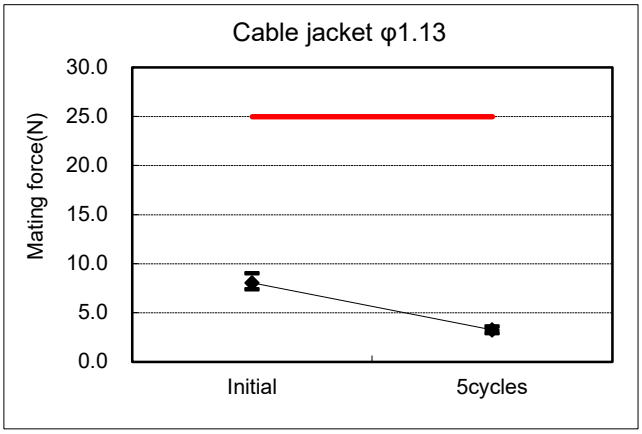
Graph1-2 Un-mating force(3mm cable clamp)



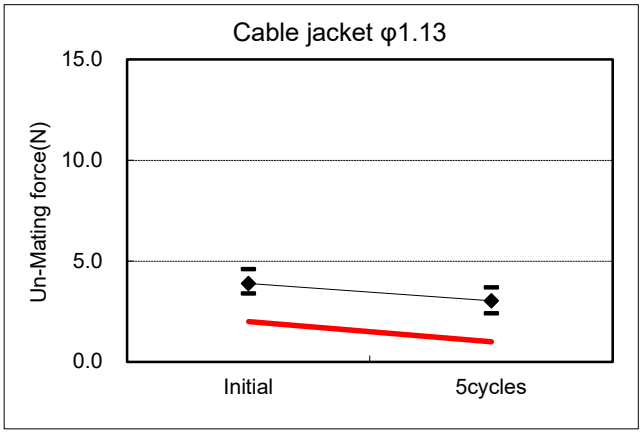
Graph1-3 Mating force (6mm cable clamp)



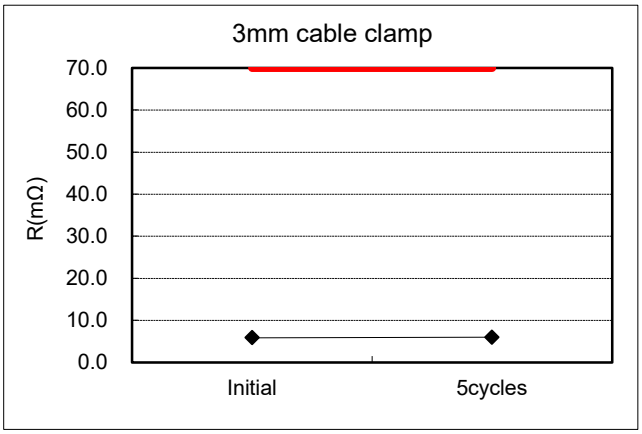
Graph1-4 Un-mating force (6mm cable clamp)

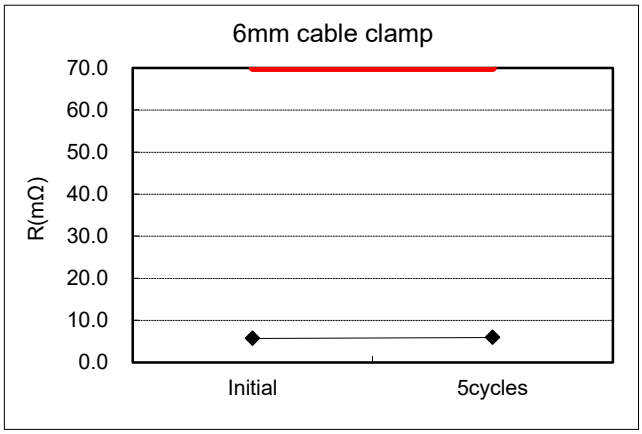


Graph1-5 Mating force(Cable jacket φ1.13)

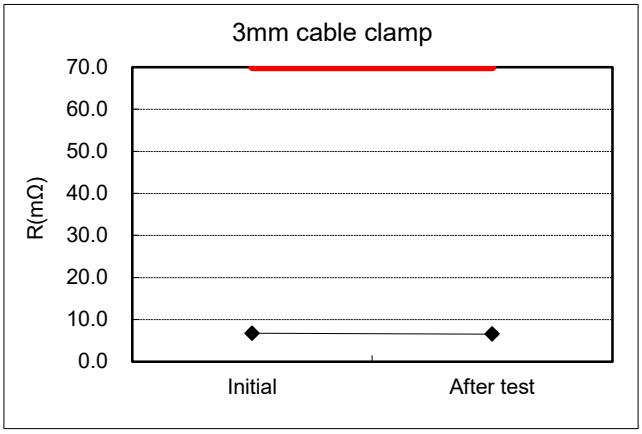


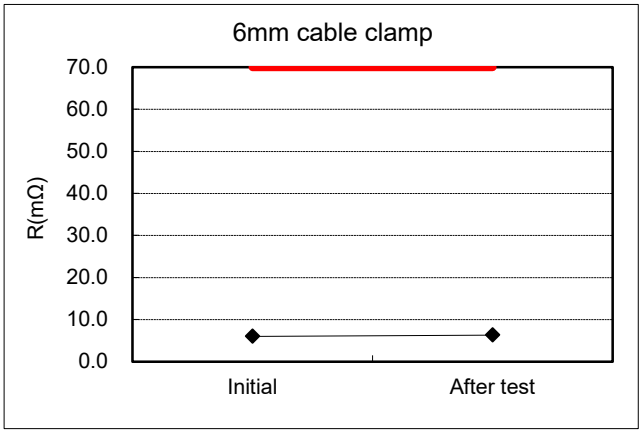
Graph1-6 Un-mating force(Cable jacket φ1.13)



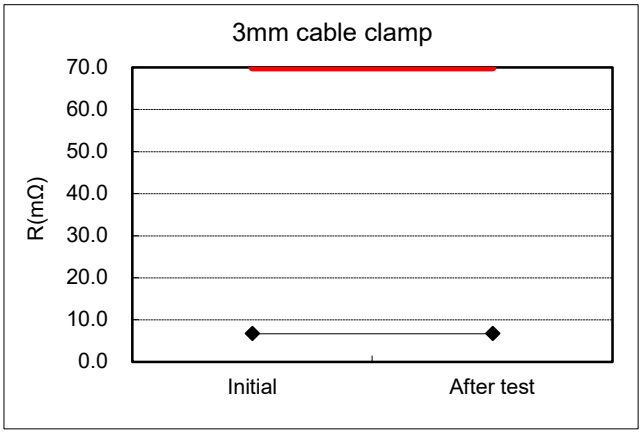


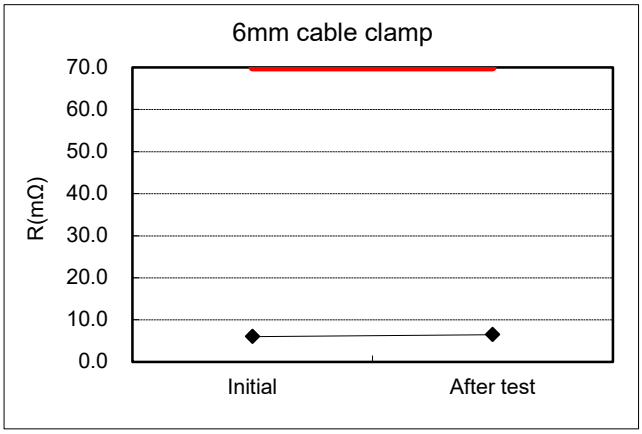
Graph1-7 Durability



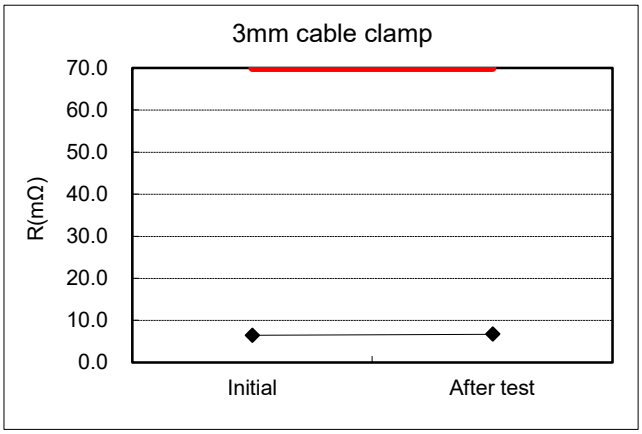


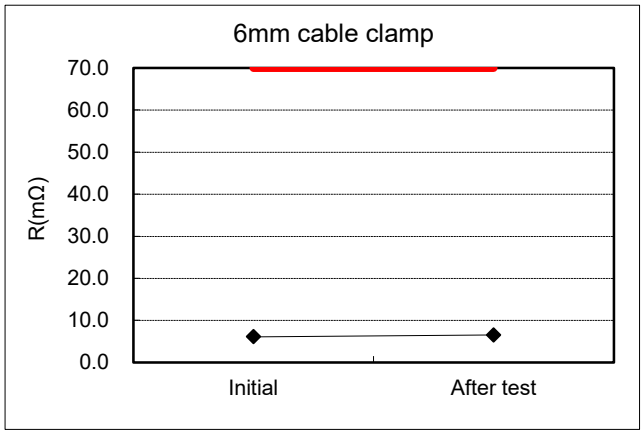
Graph1-8 Vibration



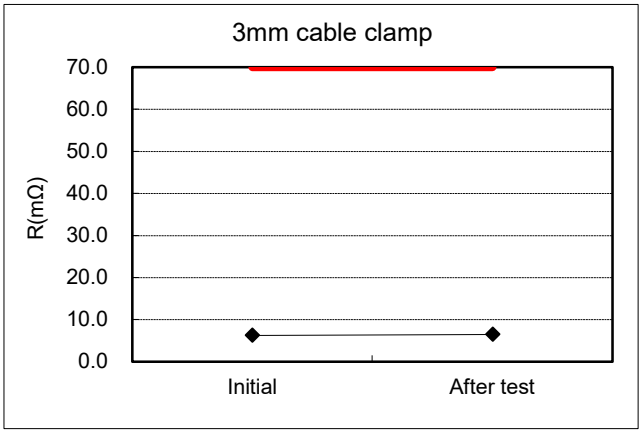


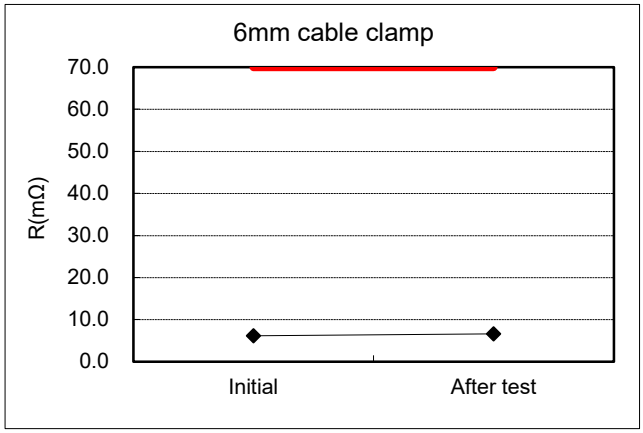
Graph1-9 Shock



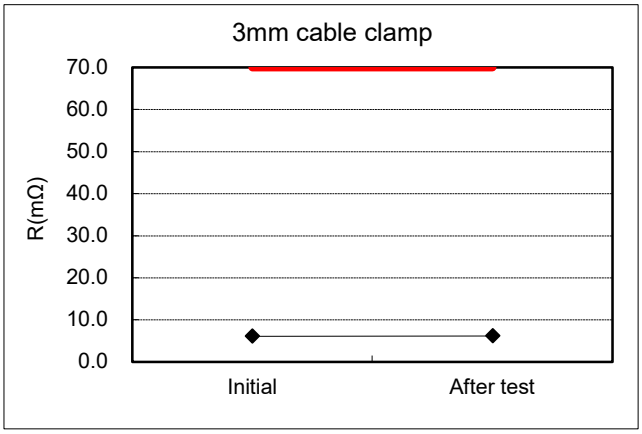


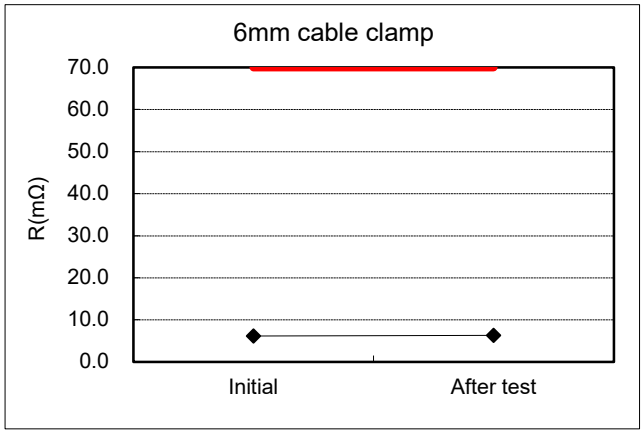
Graph1-10 Thermal Shock



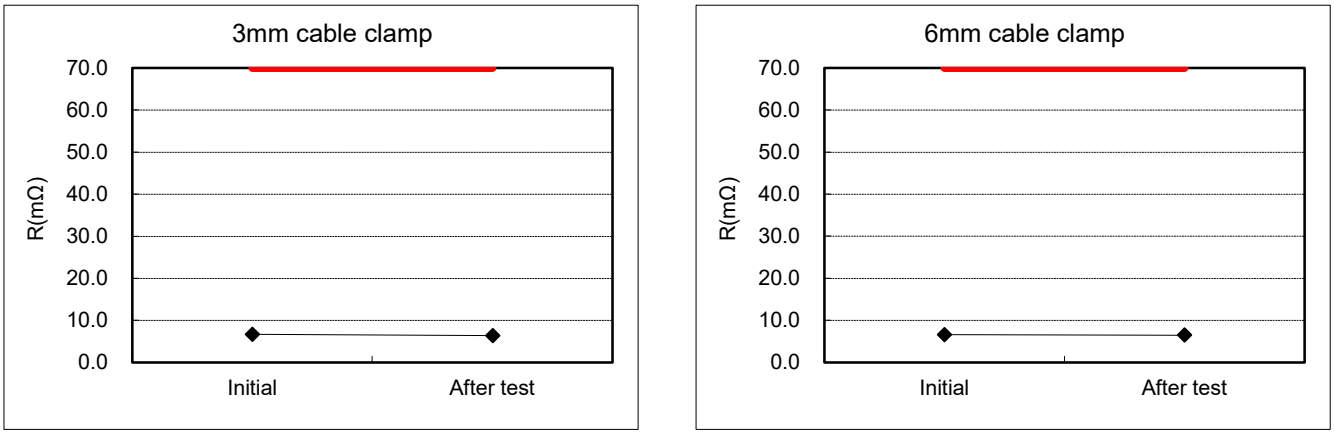


Graph1-11 High temperature life





Graph1-12 Humidity （Steady state）



Graph1-13 Low-temperature test