

NOVASTACK® 35-HDP

Part No. 20697-0**E-01#, 20698-0**E-01#

Test Report

Product Specification no. PRS-2187

6	T22065	April 25, 2022	H.Lu	Y.Shimizu	M.Takemoto
5	T21153	November 5, 2021	Y.Kuribayashi	S.Suzuki	Y.Hashimoto
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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. 目的

依照 PRS-2187 对 NOVASTACK 35-HDP 连接器的性能进行评价。

2. 试样

- (1) NOVASTACK 35-HDP PLUG ASS'Y (P/N: 20697-0**E-01#)
- (2) NOVASTACK 35-HDP RECEPTACLE ASS'Y (P/N: 20698-0**E-01#)

3. 试验顺序

所有评价均按照表 1 的试验顺序实施。

4. 结果

参照表 2-1~2-3、图 1~26。试验条件详情参照 PRS-2187。n 数代表测量数据。

5. 结论

所有资料均满足产品标准 (PRS-2187) 的必要条件。

Table 1 试验顺序与试样数

试验项目	分组												
	A	B	C	D	E	F	G	H	J	K	L	M	
接触电阻	2, 6		1, 3, 5	1, 5	1, 3	1, 5	1, 5, 7	1, 3	1, 3				
绝缘电阻				2, 6		2, 6	2, 8						
耐电压				3, 7		3, 7	3, 9						
温度上升												1	
插入力	1, 5												
拔出力	3, 7												
耐久性	4						4 (10cycles)						
端子保持力		1, 3											
振动			2										
冲击			4										
热冲击				4									
高温寿命		2			2								
湿度(稳定状态)						4							
湿度(循环)							6						
盐水喷雾								2					
气体 (H ₂ S)									2				
可焊性										1			
焊锡耐热性											1		
试样数	5 pcs.	20 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	10 pcs.	10 pcs.	5 pcs.

※电缆表中的编号表示试验顺序。

Table 2-1. 试验结果

分组	测量内容	标准	单位	数量	n	数据					判定								
						AVE.	MAX.	MIN.	S	X±3s									
A	耐久性																		
	接触电阻																		
	Signal contact	初始	40	MAX.	mΩ	5	210	15.223	17.22	14.15	0.690	17.293	OK						
		试验后 30 次后	ΔR 40	MAX.				0.324	3.78	-2.91	1.568	5.028	OK						
	Power contact	初始	20	MAX.				mΩ	5	20	2.985	3.78	2.47	0.403	4.194	OK			
		试验后 30 次后	ΔR 20	MAX.							0.115	0.61	-0.57	0.327	1.096	OK			
	GND	初始	20	MAX.							mΩ	5	10	9.095	10.17	8.50	0.468	10.499	OK
		试验后 30 次后	ΔR 20	MAX.										1.162	1.78	0.38	0.434	2.464	OK
	插入力																		
	28P	初始	32.0	MAX.	N	5	-							28.318	29.54	27.35	-	-	OK
		试验后 30 次后						11.012	12.12	10.24				-	-	OK			
	34P	初始	38.0	MAX.			-	30.988	31.80	30.17				-	-	OK			
		试验后 30 次后						12.738	13.33	12.54	-	-	OK						
	42P	初始	46.0	MAX.			-	32.592	33.71	31.51	-	-	OK						
		试验后 30 次后						14.194	14.66	13.42	-	-	OK						
	56P	初始	60.0	MAX.			-	39.758	42.40	38.37	-	-	OK						
		试验后 30 次后						19.596	21.23	18.08	-	-	OK						
	62P	初始	66.0	MAX.			-	45.920	47.20	44.10	-	-	OK						
		试验后 30 次后						21.840	23.00	21.30	-	-	OK						
	拔出力																		
	28P	初始	3.2	MIN.			N	5	-	14.360	15.21	13.54	-	-	OK				
		试验后 30 次后			10.226	11.32				9.43	-	-	OK						
	34P	初始	3.8	MIN.	-	15.122			15.91	14.34	-	-	OK						
		试验后 30 次后				10.824			11.39	9.99	-	-	OK						
42P	初始	4.6	MIN.	-	15.988	17.88			15.13	-	-	OK							
	试验后 30 次后				9.942	10.40			9.30	-	-	OK							
56P	初始	6.0	MIN.	-	20.800	21.63			20.45	-	-	OK							
	试验后 30 次后				13.340	13.93			12.94	-	-	OK							
62P	初始	6.6	MIN.	-	18.940	19.60			18.00	-	-	OK							
	试验后 30 次后				18.060	19.30			16.50	-	-	OK							
B	端子保持力																		
	Plug																		
	Signal contact	初始	0.6	MIN.	N	-	20	2.52 MIN.					OK						
		试验后						2.07 MIN.					OK						
	Power contact	初始						3.80 MIN.					OK						
		试验后						3.92 MIN.					OK						
	Receptacle																		
	Signal contact	初始	0.1	MIN.	N	-	20	0.42 MIN.					OK						
		试验后						0.34 MIN.					OK						
	Power contact	初始						0.53 MIN.					OK						
试验后		0.48 MIN.						OK											
C	震动 → 冲击																		
	接触电阻																		
	Signal contact	初始	40	MAX.	mΩ	5	210	15.200	17.04	13.96	0.685	17.255	OK						
		震动后	ΔR 40	MAX.				-0.500	0.32	-1.31	0.474	0.922	OK						
		冲击后						-0.505	0.44	-1.39	0.393	0.674	OK						
	Power contact	初始	20	MAX.			mΩ	5	20	2.783	3.31	2.18	0.362	3.869	OK				
		震动后	ΔR 20	MAX.						0.166	0.72	-0.20	0.268	0.970	OK				
		冲击后								0.324	0.87	-0.29	0.363	1.413	OK				
	GND	初始	20	MAX.	mΩ	5			10	8.145	9.28	7.38	0.585	9.900	OK				
		震动后	ΔR 20	MAX.						0.149	0.55	-0.20	0.281	0.992	OK				
		冲击后								0.163	0.77	-0.27	0.288	1.027	OK				
	供电瞬断																		
		试验中	1	MAX.			μs	5	-	无瞬断					OK				
	外观																		
		试验后	*		-	5	-	无瞬断					OK						

*外观标准：没有损害功能的异常

Table 2-2. 试验结果

分组	测量内容	标准	单位	数量	n	数据					判定		
						AVE.	MAX.	MIN.	S	X±3s			
D	热冲击												
	接触电阻												
	Signal contact	初始	40 MAX.	mΩ	5	210	15.962	18.86	13.46	1.198	19.556	OK	
		试验后	ΔR 40 MAX.				0.769	4.46	-2.70	1.376	4.897	OK	
	Power contact	初始	20 MAX.				20	2.680	3.48	1.67	0.537	4.291	OK
		试验后	ΔR 20 MAX.					0.420	1.09	-0.15	0.308	1.344	OK
	GND	初始	20 MAX.				10	8.865	9.38	8.45	0.356	9.933	OK
		试验后	ΔR 20 MAX.					-0.067	0.61	-0.84	0.413	1.172	OK
	绝缘电阻												
		初始	1000 MIN.	MΩ	5	-	1.77 x 10 ⁵ Min.					OK	
		试验后	500 MIN.				1.43 x 10 ⁵ Min.					OK	
	耐电压												
		试验后	**	-	5	-	无异常					OK	
	外观												
	试验后	*	-	5	-	无异常					OK		
E	高温寿命												
	接触电阻												
	Signal contact	初始	40 MAX.	mΩ	5	210	15.949	18.73	13.20	1.215	19.594	OK	
		试验后	ΔR 40 MAX.				0.529	3.44	-2.26	1.110	3.859	OK	
	Power contact	初始	20 MAX.			20	2.718	3.33	2.21	0.363	3.807	OK	
		试验后	ΔR 20 MAX.				-0.095	0.76	-0.80	0.437	1.216	OK	
	GND	初始	20 MAX.			10	8.208	8.67	7.46	0.441	9.531	OK	
		试验后	ΔR 20 MAX.				-0.098	0.75	-0.75	0.465	1.297	OK	
	外观												
		试验后	*	-	5	-	无异常					OK	
F	湿度(稳定状态)												
	接触电阻												
	Signal contact	初始	40 MAX.	mΩ	5	210	16.158	18.74	13.94	1.143	19.587	OK	
		试验后	ΔR 40 MAX.				0.865	3.37	-1.63	1.103	4.174	OK	
	Power contact	初始	20 MAX.			20	2.786	3.62	2.18	0.393	3.965	OK	
		试验后	ΔR 20 MAX.				0.190	1.13	-0.84	0.582	1.936	OK	
	GND	初始	20 MAX.			10	8.295	8.78	7.56	0.378	9.429	OK	
		试验后	ΔR 20 MAX.				-0.186	0.30	-0.91	0.420	1.074	OK	
	绝缘电阻												
		初始	1000 MIN.	MΩ	5	-	1.28 x 10 ⁵ Min.					OK	
		试验后	500 MIN.				1.04 x 10 ⁵ Min.					OK	
	耐电压												
		试验后	**	-	5	-	无异常					OK	
	外观												
	试验后	*	-	5	-	无异常					OK		

*外观标准: 没有损害功能的异常

**耐电压标准: 没有沿面放电、閃燃、绝缘体故障的异常

Table 2-3. 试验结果

G	湿度(循环)														
	接触电阻														
	Signal contact	初始	40	MAX.	mΩ	5	210	15.793	17.74	13.74	0.842	18.319	OK		
		耐久揀抜10次后	ΔR	40				MAX.	-0.719	1.60	-2.52	0.786	1.639	OK	
		试验后							0.493	2.51	-1.63	0.881	3.136	OK	
	Power contact	初始	20	MAX.				20	2.982	3.70	2.33	0.426	4.260	OK	
		耐久揀抜10次后	ΔR	20					MAX.	-0.041	1.29	-1.08	0.643	1.888	OK
		试验后								0.114	1.36	-1.18	0.626	1.992	OK
	GND	初始	20	MAX.			10		8.164	8.86	7.40	0.399	9.361	OK	
		耐久揀抜10次后	ΔR	20					MAX.	-0.070	1.04	-1.31	0.709	2.057	OK
		试验后								0.134	1.33	-0.46	0.559	1.811	OK
	绝缘电阻														
	初始	1000	MIN.	MΩ				5	-	1.15 × 10 ⁵ Min.					OK
	试验后	500	MIN.							1.04 × 10 ⁵ Min.					OK
耐电压															
	试验后	**	-	5	-	无异常					OK				
外观															
	试验后	*	-	5	-	无异常					OK				

分组	测量内容	标准	单位	数量	n	数据					判定		
						AVE.	MAX.	MIN.	S	X±3s			
H	盐水喷雾												
	接触电阻												
	Signal contact	初始	40	MAX.	mΩ	5	210	15.093	17.07	13.23	0.890	17.763	OK
		试验后	ΔR	40				MAX.	0.201	3.68	-3.49	1.670	5.211
	耐久揀抜10次后	20							2.952	3.36	2.46	0.255	3.717
	试验后		-0.037	0.98				-0.53	0.382	1.109	OK		
	Power contact	初始	20	MAX.			10	8.050	8.70	7.55	0.404	9.262	OK
耐久揀抜10次后		ΔR	20	MAX.				0.036	0.77	-0.61	0.444	1.368	OK
试验后	0.036							0.77	-0.61	0.444	1.368	OK	
GND	初始	20	MAX.	0.036				0.77	-0.61	0.444	1.368	OK	
	试验后	ΔR	20	MAX.			0.036	0.77	-0.61	0.444	1.368	OK	
外观													
	试验后	*	-	5			-	无异常					OK

J	气体 (H2S)												
	接触电阻												
	Signal contact	初始	40	MAX.	mΩ	5	210	15.721	17.80	13.61	0.920	18.481	OK
		试验后	ΔR	40				MAX.	0.599	3.41	-2.34	1.115	3.944
	耐久揀抜10次后	20							2.961	3.84	2.24	0.345	3.996
	试验后		-0.124	0.92				-1.06	0.550	1.526	OK		
	Power contact	初始	20	MAX.			10	8.001	8.52	7.50	0.335	9.006	OK
耐久揀抜10次后		ΔR	20	MAX.				0.303	0.96	-0.28	0.418	1.557	OK
试验后	0.303							0.96	-0.28	0.418	1.557	OK	
GND	初始	20	MAX.	0.303				0.96	-0.28	0.418	1.557	OK	
	试验后	ΔR	20	MAX.			0.303	0.96	-0.28	0.418	1.557	OK	
外观													
	试验后	*	-	5			-	无异常					OK

K	可焊性											
	焊锡湿润面积											
	试验后	95	MIN.	%	10	-	95 MIN.					OK

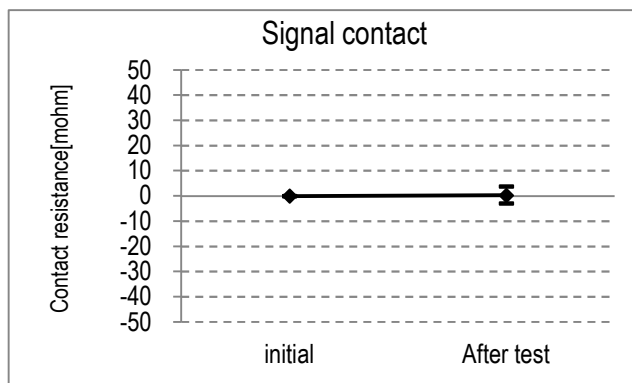
L	焊锡耐热性											
	外观											
	试验后	*	-	10	-	无异常					OK	

M	温度上升											
	28P (Signal:0.30A,Power: 2.20A)											
	34P (Signal:0.30A,Power: 2.20A)											
	42P (Signal:0.29A,Power: 2.20A)											
	56P (Signal:0.22A,Power: 2.20A)											
	62P (Signal:0.19A,Power: 2.20A)											
	ΔT	30	MAX.	℃	5	-	8.7 Max.					OK
							8.7 Max.					OK
							8.5 Max.					OK
							6.9 Max.					OK
							5.8 Max.					OK

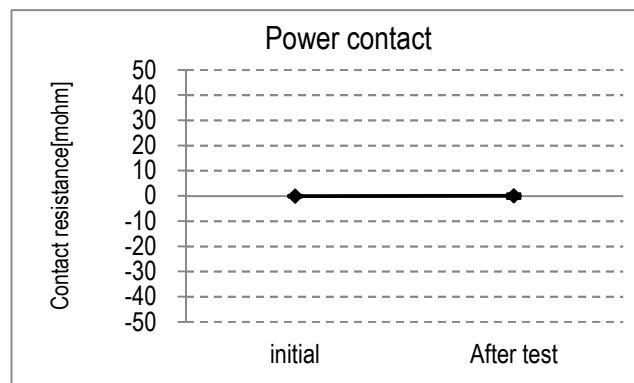
*外观标准: 没有损害功能的异常

**耐电压标准: 没有沿面放电、閃燃、绝缘体故障的异常

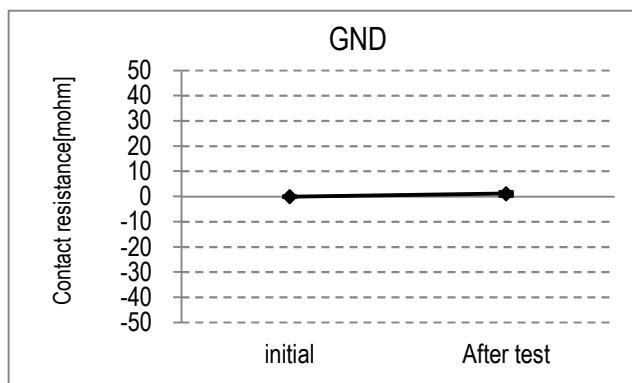
C Group / Durability



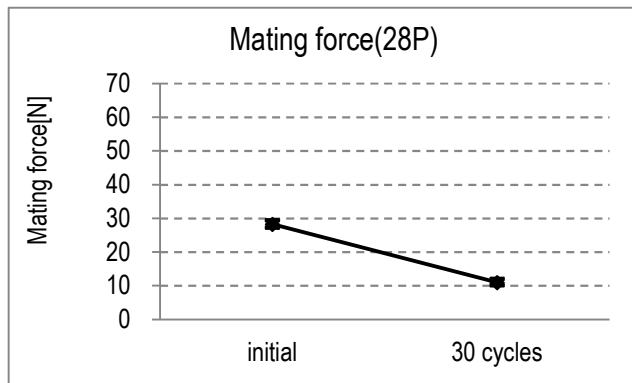
Graph-1. A change of signal contact resistance



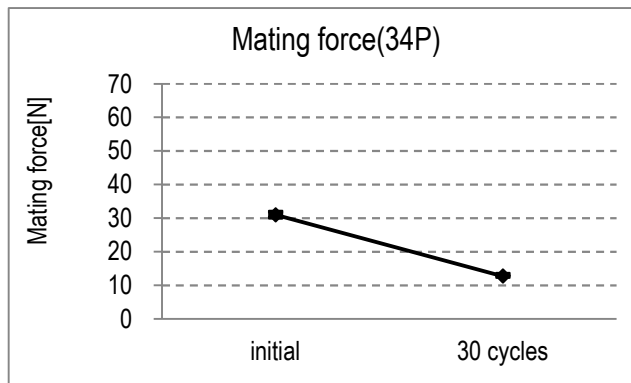
Graph-2. A change of power contact resistance



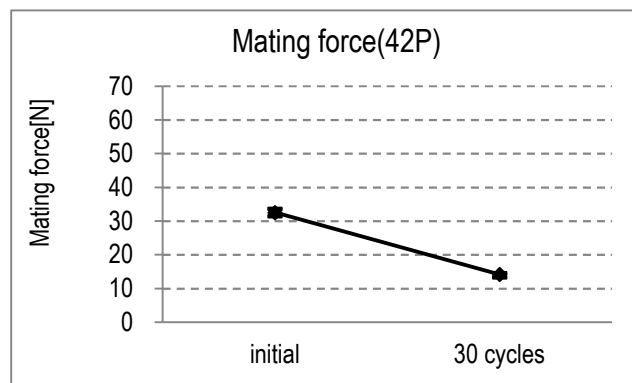
Graph-3. A change of GND contact resistance



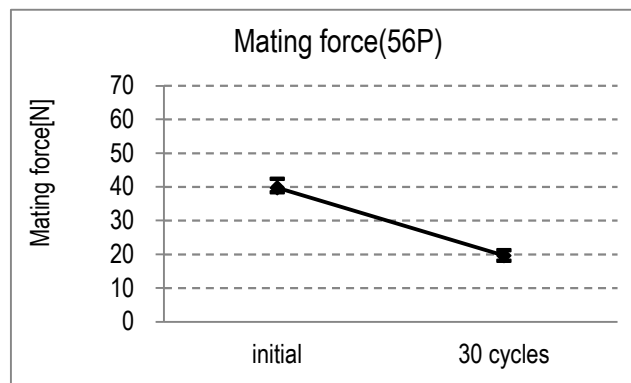
Graph-4-1. A change of mating force 28P



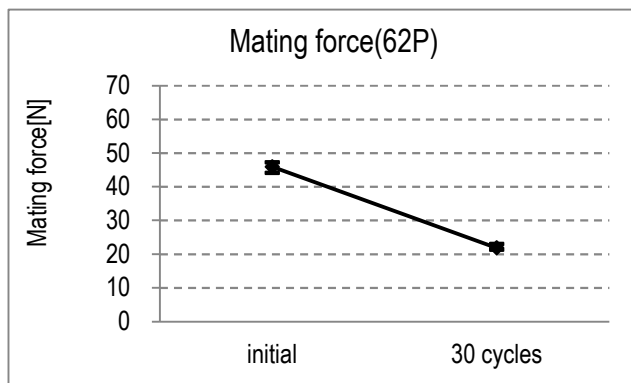
Graph-4-2. A change of mating force 34P



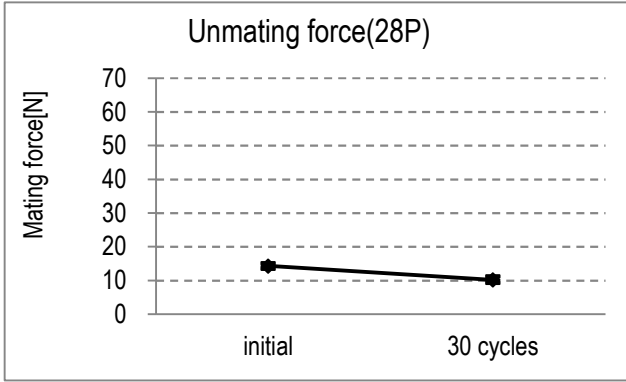
Graph-4-3. A change of mating force 42P



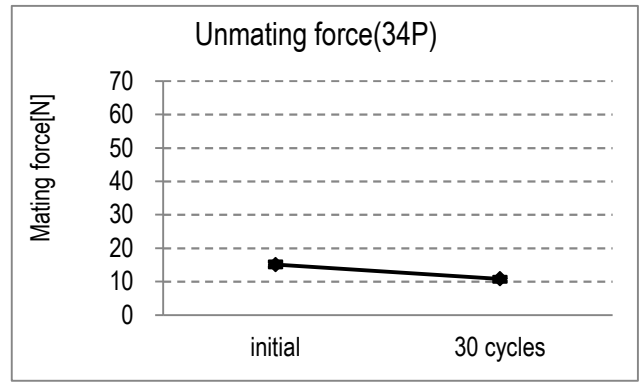
Graph-4-4. A change of mating force 56P



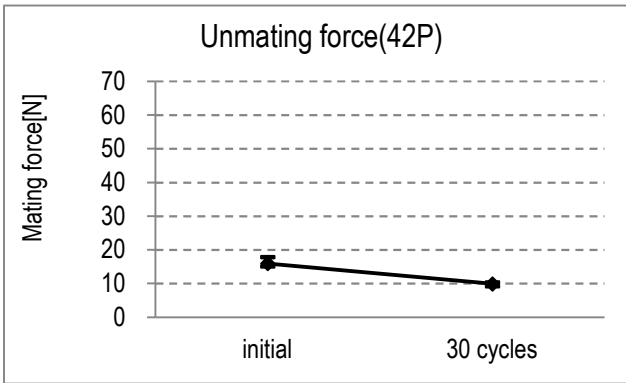
Graph-4-5. A change of mating force 62P



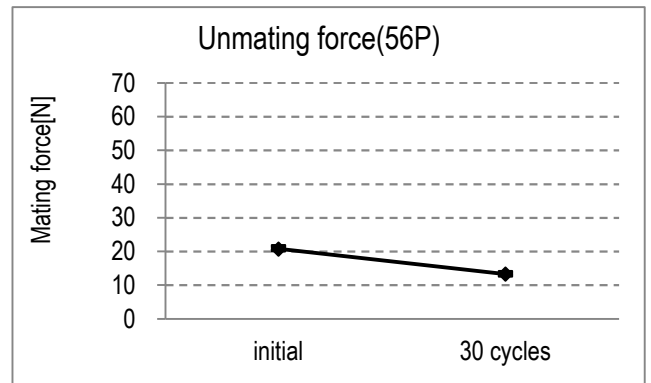
Graph-5-1. A change of unmating force 28P



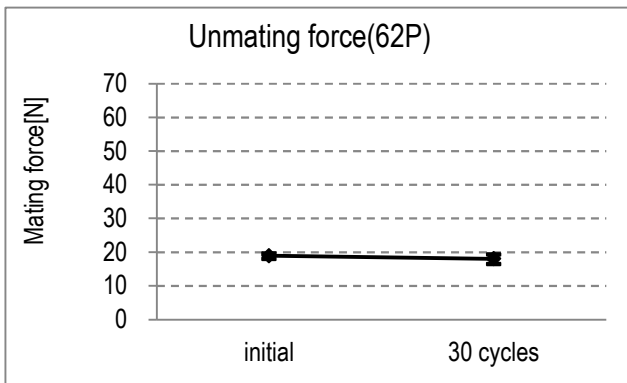
Graph-5-2. A change of unmating force 34P



Graph-5-3. A change of unmating force 42P

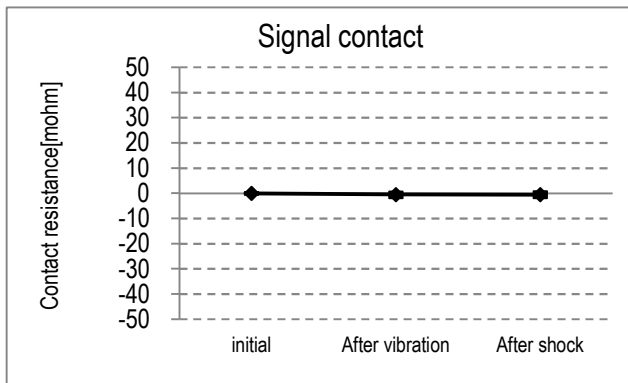


Graph-5-4. A change of unmating force 56P

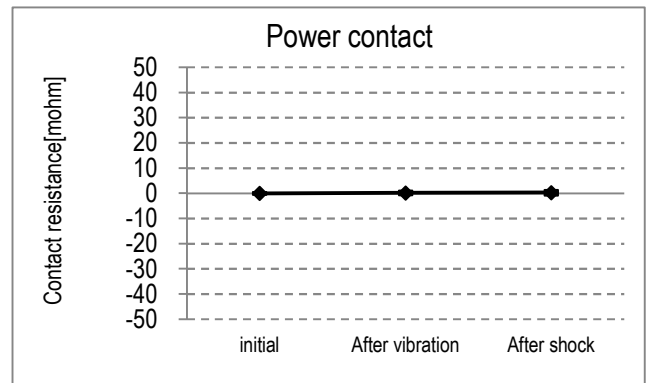


Graph-5-5. A change of unmating force 62P

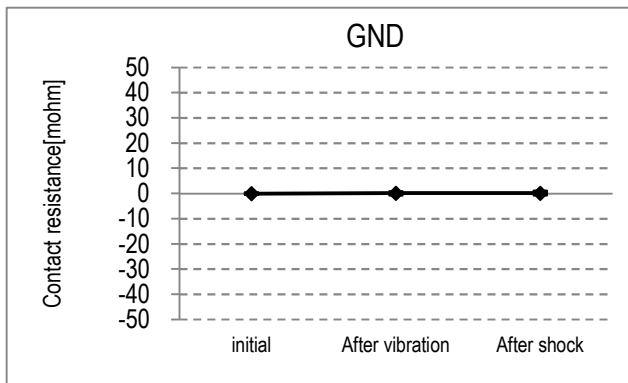
C Group / Vibration → Shock



Graph-6. A change of signal contact resistance

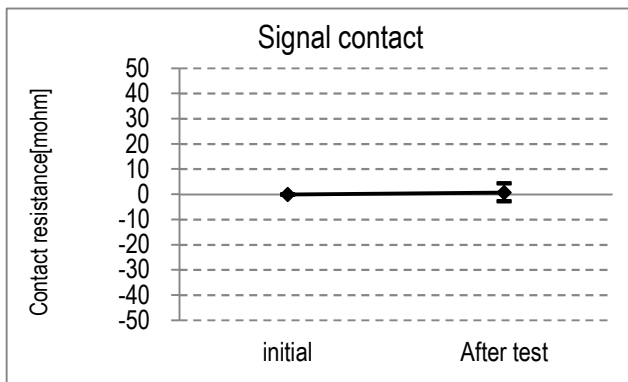


Graph-7. A change of power contact resistance

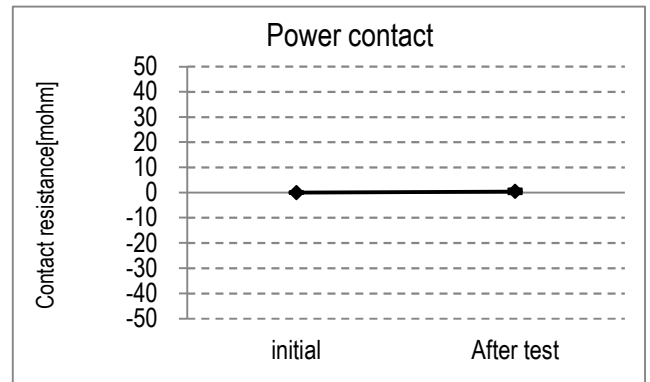


Graph-8. A change of GND contact resistance

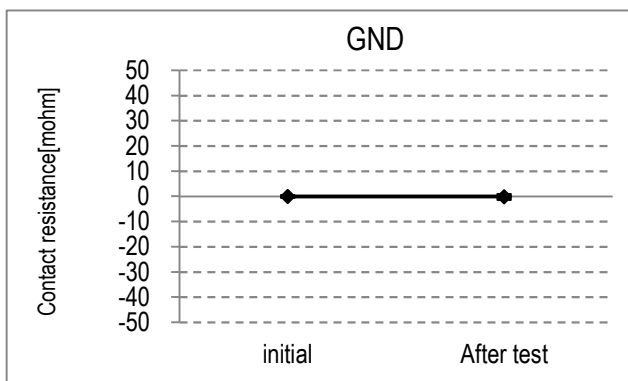
D Group / Thermal Shock



Graph-9. A change of signal contact resistance

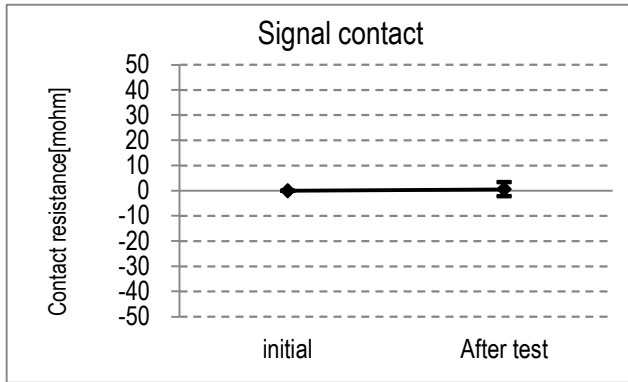


Graph-10. A change of power contact resistance

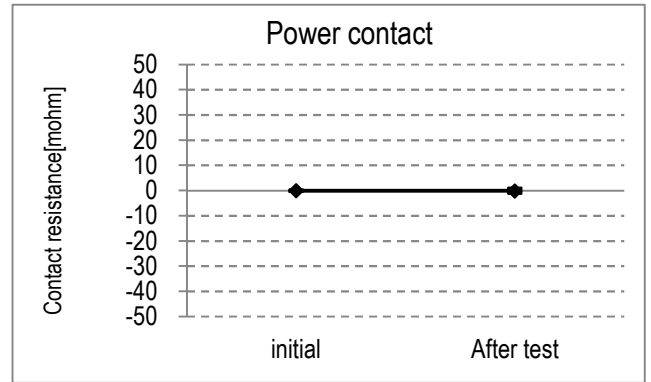


Graph-11. A change of GND contact resistance

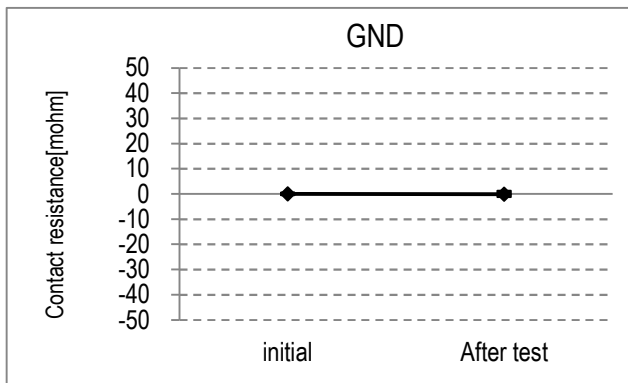
E Group / High Temperature Life



Graph-12. A change of signal contact resistance

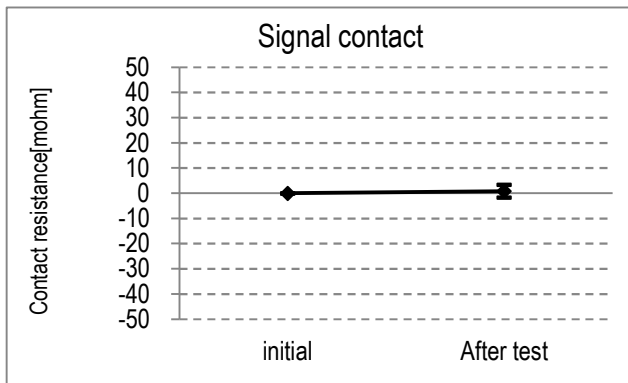


Graph-13. A change of power contact resistance

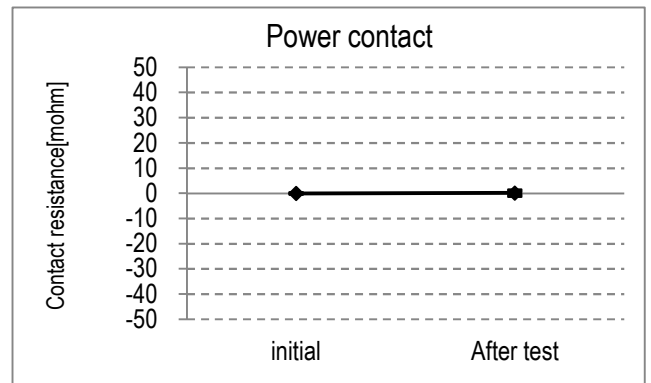


Graph-14. A change of GND contact resistance

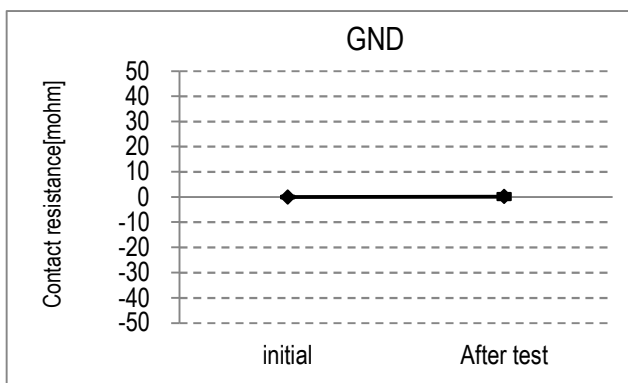
F Group / Humidity (Steady State)



Graph-15. A change of signal contact resistance

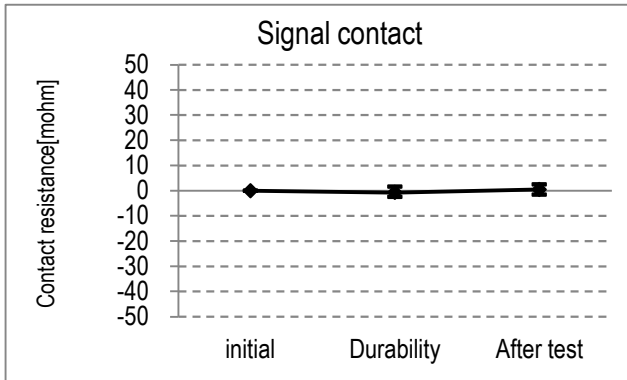


Graph-16. A change of power contact resistance

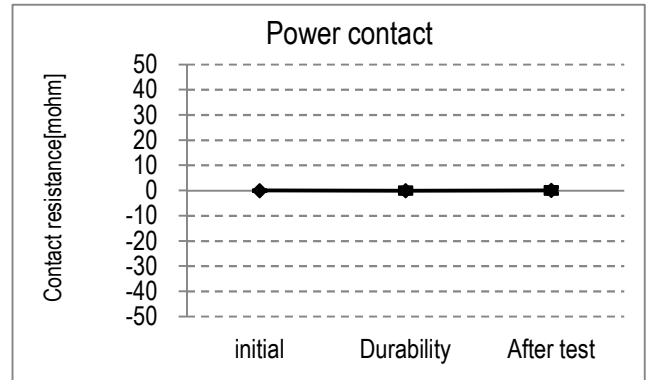


Graph-17. A change of GND contact resistance

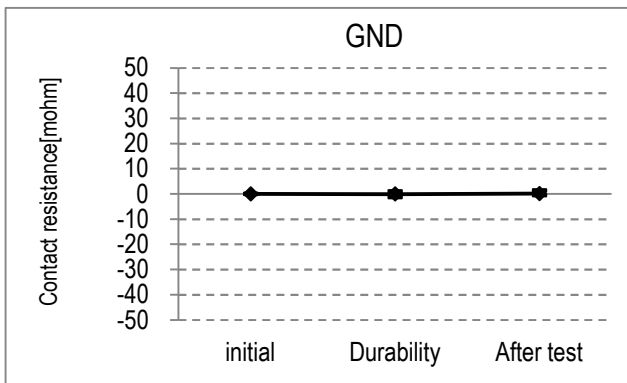
G Group / Humidity (Cycling)



Graph-18. A change of signal contact resistance

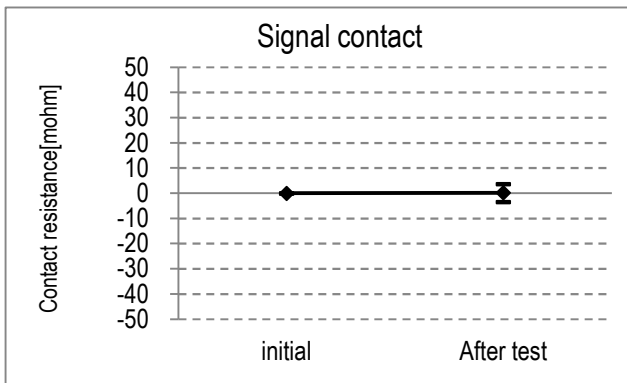


Graph-19. A change of power contact resistance

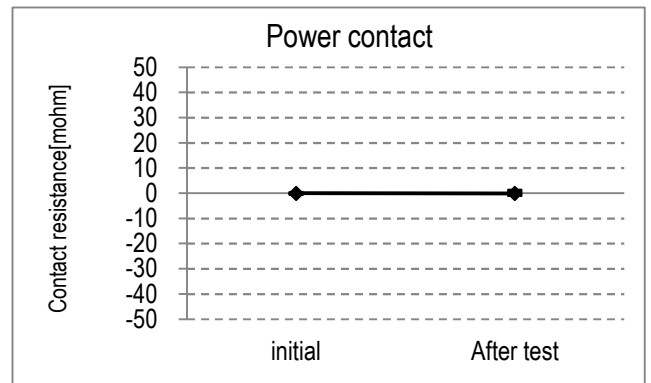


Graph-20. A change of GND contact resistance

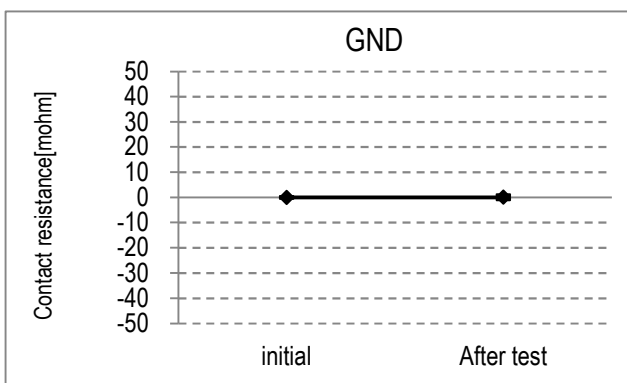
H Group / Salt Water Spray



Graph-21. A change of signal contact resistance

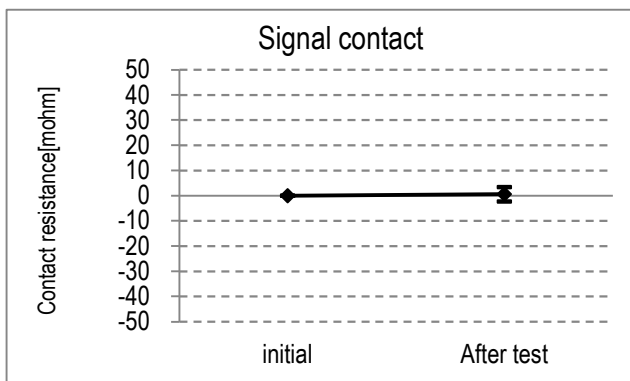


Graph-22. A change of power contact resistance

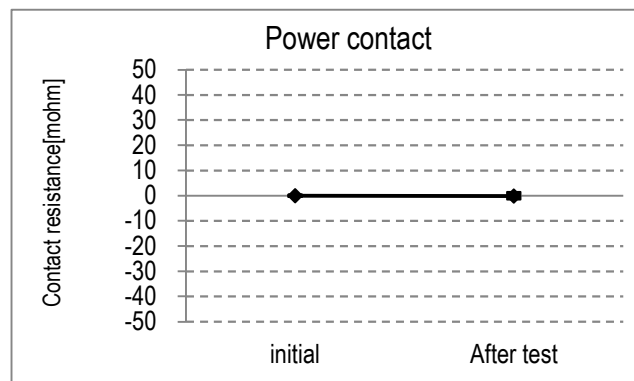


Graph-23. A change of GND contact resistance

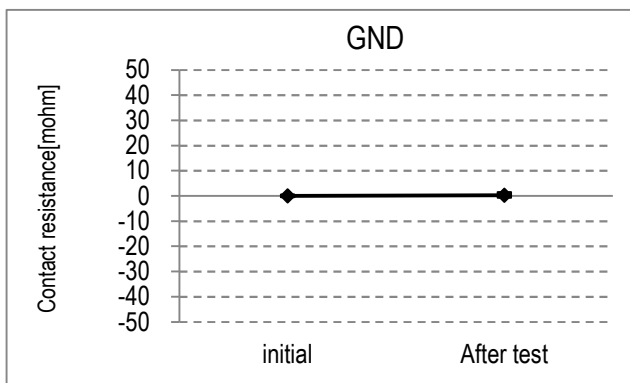
J Group / Gas



Graph-24. A change of signal contact resistance



Graph-25. A change of power contact resistance



Graph-26. A change of GND contact resistance