

IARPB® VERTICAL

Part No. V0145-910**-01

Test Report

Product Specification no. PSS-0041

2	T25035	April 22, 2025	K. Irahara	T. Takeda	J. Tateishi
1	RS1007	August 28, 2024	Y. Imae	H. Kurita	J. Tateishi
0	RS1002	July 8, 2024	Y. Imae	H. Kurita	J. Tateishi
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

We will conduct a performance verification evaluation for the IARPB® VERTICAL CONNECTOR based on product standard PSS-0041.

Regarding terminal evaluation (Table 2 No.6,7,8,14) and environmental performances (Table 3), performance will be confirmed representatively using the 10P.

2. Conclusion

All evaluation items met the required performance standards.

3. Sample

Table 1 Product Specifications

Parts	Material	P/N	Remarks
Housing	Glass Filled PBT (UL94-HB)	V0145-91002-01 (2P) V0145-91003-01 (3P) V0145-91004-01 (4P) V0145-91005-01 (5P) V0145-91006-01 (6P) V0145-91007-01 (7P) V0145-91008-01 (8P) V0145-91009-01 (9P) V0145-91010-01 (10P)	Black
Terminal	Brass , Sn (Reflow)	V0145-71001-01	-
Applicable cable	-	BEAMEX SS-ER500	0.3mm ²
Applicable PCB	FR-4	-	-



Fig. 1 Housing



Fig. 2 Terminal

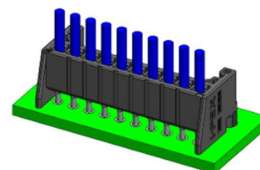


Fig. 3 Assembly

4. Test Results

Tables 2 and 3 below describe the evaluation results.

Table 2-1 Initial characteristics Result list (2P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	8	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	40	N	54.88	57.8	51.8	1.46	50.50	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	24	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	24	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	24	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	24	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	℃	15.69	16.6	15.0	0.61	17.52	Pass
		All poles	5	℃	21.10	21.5	20.6	0.38	22.24	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	40	N	2.42	3.3	2.0	0.28	3.26	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	10	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	24	N	144.55	154.8	135.1	5.25	128.80	Pass
		Direction ②	24	N	89.45	101.5	81.9	6.10	71.15	Pass
		Direction ③	24	N	135.74	152.1	107.6	15.91	88.01	Pass
		Direction ④	24	N	100.62	119.3	88.5	8.61	74.79	Pass
18	PCB insertion force	50N Max.	24	N	38.57	43.0	33.2	2.71	46.70	Pass

Table 2-2 Initial characteristics Result list (3P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	8	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	24	N	57.72	62.0	52.1	2.76	49.44	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	24	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	24	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	24	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	24	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	19.48	20.0	19.1	0.35	20.53	Pass
		All poles	5	°C	19.13	20.1	18.6	0.62	20.99	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	24	N	2.59	3.3	2.2	0.39	3.76	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	15	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	24	N	236.08	250.0	219.0	9.34	208.06	Pass
		Direction ②	24	N	93.33	99.0	87.5	3.67	82.32	Pass
		Direction ③	24	N	163.83	189.4	140.1	14.15	121.38	Pass
		Direction ④	24	N	170.54	197.9	141.7	11.95	134.69	Pass
18	PCB insertion force	50N Max.	24	N	38.35	44.7	32.6	3.44	48.67	Pass

Table 2-3 Initial characteristics Result list (4P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	8	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	40	N	55.50	58.8	52.5	1.52	50.94	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	24	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	24	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	24	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	24	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	14.33	15.0	13.8	0.51	15.86	Pass
		All poles	5	°C	20.94	22.3	18.2	1.68	25.98	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	40	N	2.94	4.0	2.3	0.37	4.05	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	20	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	24	N	279.71	296.8	254.6	10.05	249.56	Pass
		Direction ②	24	N	96.65	111.2	80.0	8.42	71.39	Pass
		Direction ③	24	N	224.73	288.1	185.9	28.39	139.56	Pass
		Direction ④	24	N	251.97	296.4	137.9	30.98	159.03	Pass
18	PCB insertion force	50N Max.	24	N	37.94	42.5	33.2	2.35	44.99	Pass

Table 2-4 Initial characteristics Result list (5P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	8	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	40	N	54.60	58.8	50.5	1.94	48.78	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	24	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	24	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	24	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	24	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	19.30	23.6	17.0	2.58	27.04	Pass
		All poles	5	°C	16.34	17.5	15.8	0.70	18.44	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	40	N	2.83	3.7	2.4	0.28	3.67	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	25	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	24	N	395.99	416.8	373.6	10.10	365.69	Pass
		Direction ②	24	N	106.47	115.0	94.8	4.10	94.17	Pass
		Direction ③	24	N	330.52	389.2	234.3	39.13	213.13	Pass
		Direction ④	24	N	327.39	355.3	301.3	16.80	276.99	Pass
18	PCB insertion force	50N Max.	24	N	37.69	43.8	31.3	3.39	47.86	Pass

Table 2-5 Initial characteristics Result list (6P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	4	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	24	N	50.53	53.8	47.3	1.85	44.98	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	12	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	12	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	12	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	12	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	20.70	21.9	19.2	1.14	24.12	Pass
		All poles	5	°C	15.58	16.2	14.8	0.56	17.26	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	24	N	2.62	3.6	2.1	0.39	3.79	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	30	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	12	N	468.60	476.5	454.1	8.79	442.23	Pass
		Direction ②	12	N	94.57	105.2	83.6	6.70	74.47	Pass
		Direction ③	12	N	243.72	275.9	212.3	23.20	174.12	Pass
		Direction ④	12	N	363.25	435.2	291.3	35.86	255.67	Pass
18	PCB insertion force	50N Max.	12	N	37.97	42.0	31.9	3.52	48.53	Pass

Table 2-6 Initial characteristics Result list (7P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	4	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	28	N	53.65	60.1	49.0	2.53	46.06	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	12	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	12	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	12	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	12	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	17.13	17.5	16.7	0.37	18.24	Pass
		All poles	5	°C	17.33	18.2	16.3	0.77	19.64	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	28	N	2.95	3.6	2.3	0.43	4.24	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	35	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	12	N	480.77	487.4	474.1	3.95	468.92	Pass
		Direction ②	12	N	103.14	114.1	96.7	4.44	89.82	Pass
		Direction ③	12	N	324.81	366.8	225.7	37.04	213.69	Pass
		Direction ④	12	N	436.23	506.1	385.5	39.19	318.66	Pass
18	PCB insertion force	50N Max.	12	N	36.44	41.5	33.1	2.82	44.90	Pass

Table 2-7 Initial characteristics Result list (8P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	4	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	32	N	50.34	55.4	41.2	3.08	41.10	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	12	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	12	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	12	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	12	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	18.11	18.9	17.4	0.67	20.12	Pass
		All poles	5	°C	17.15	17.6	16.6	0.37	18.26	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	32	N	2.70	3.5	2.0	0.39	3.87	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	40	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	12	N	612.68	648.3	583.7	20.90	549.98	Pass
		Direction ②	12	N	112.96	126.3	100.5	8.39	87.79	Pass
		Direction ③	12	N	248.95	262.7	202.9	15.56	202.27	Pass
		Direction ④	12	N	486.14	523.4	449.2	24.84	411.62	Pass
18	PCB insertion force	50N Max.	12	N	37.12	43.4	32.4	3.35	47.17	Pass

Table 2-8 Initial characteristics Result list (9P)

No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	4	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	36	N	52.27	57.3	46.6	2.43	44.98	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	12	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	12	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	12	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	12	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	19.15	19.9	18.7	0.53	20.74	Pass
		All poles	5	°C	16.08	17.5	14.7	1.02	19.14	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	36	N	2.66	3.3	2.0	0.38	3.80	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	45	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	12	N	701.87	751.5	638.0	31.90	606.17	Pass
		Direction ②	12	N	107.74	126.0	99.8	7.66	84.76	Pass
		Direction ③	12	N	235.16	265.1	210.1	17.24	183.44	Pass
		Direction ④	12	N	549.12	638.1	467.0	52.32	392.16	Pass
18	PCB insertion force	50N Max.	12	N	39.24	45.9	35.2	3.07	48.45	Pass

Table 2-9 Initial characteristics Result list (10P)

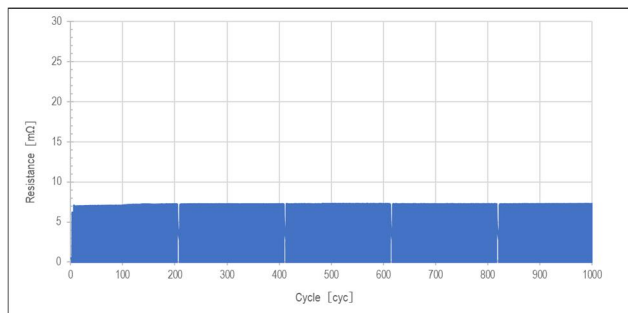
No.	Test name	Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	Terminal and Housing appearance	No detrimental deformation	4	-	No detrimental deformation					Pass
2	Terminal outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
3	Housing outer dimension	Satisfy drawing dimension	-	-	Satisfy drawing dimension					Pass
4	Terminal retention force	30N Min.	40	N	51.92	56.1	45.1	2.31	44.99	Pass
5	Solderability	The land area on both sides of the PCB is wet all around and fillets are formed.	5	-	The land area on both sides of the PCB is wet all around and fillets are formed.					Pass
6	Terminal crimp strength	50N Min.	5	N	73.54	75.3	70.0	2.09	67.27	Pass
7	Voltage drop	(a)1A	50	mV/A	0.404	0.69	0.12	0.172	0.920	Pass
		(b)3A	50	mV/A	0.370	0.70	0.11	0.173	0.889	Pass
8	Dry circuit resistance	(a)10mA	50	mΩ	0.404	0.69	0.11	0.193	0.983	Pass
		(b)1mA	50	mΩ	0.420	0.69	0.18	0.161	0.903	Pass
9	Insulation resistance	(a)between terminals	12	MΩ	100,000MΩ Min.					Pass
		(b)between terminal and earth	12	MΩ	100,000MΩ Min.					Pass
10	Dielectric withstanding voltage	(a)between terminals	12	-	No insulation breakdown or erosion					Pass
		(b)between terminal and earth	12	-	No insulation breakdown or erosion					Pass
11	Temperature rise	Single pole	5	°C	18.34	19.8	17.6	0.94	21.16	Pass
		All poles	5	°C	17.23	17.8	16.9	0.39	18.40	Pass
12	Leak current	3mA Max.	5	mA	0.01mA Max.					Pass
13	Short break monitor	Not exceed 1μs and 7Ω	5	-	Not exceed 1μs and 7Ω					Pass
14	Resistance variation	20mΩ Max.	5	mΩ	1.31	1.4	1.3	0.08	1.55	Pass
15	Insertion force of terminal to the housing	15N Max.	40	N	2.66	3.8	1.9	0.41	3.89	Pass
16	Terminal/Cavity polarization	Unable to insert terminal incorrectly at 49N	50	-	Unable to insert terminal incorrectly at 49N					Pass
17	PCB retention force	Direction ①	12	N	764.64	796.7	727.1	22.24	697.92	Pass
		Direction ②	12	N	108.42	123.9	99.1	6.92	87.66	Pass
		Direction ③	12	N	259.59	298.2	197.7	33.78	158.25	Pass
		Direction ④	12	N	623.15	674.4	540.6	38.13	508.76	Pass
18	PCB insertion force	50N Max.	12	N	35.56	40.2	31.1	2.50	43.06	Pass

Table 3-1 Environmental Performances Result list (10P)

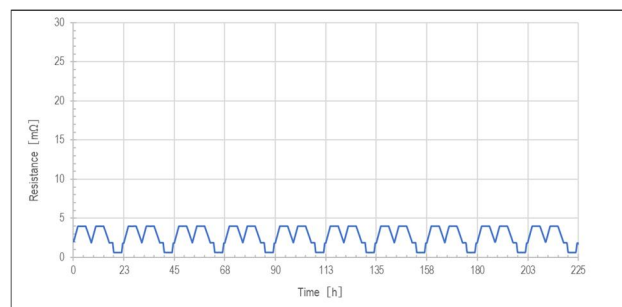
Item	Test name		Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.
1	High temperature aging	Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	52.23	58.4	46.7	2.07	46.02	Pass
		Voltage drop	(a)1A	50	mV/A	0.391	1.27	0.22	0.146	0.829	Pass
			(b)3A	50	mV/A	0.324	0.55	0.20	0.083	0.573	Pass
		Dry circuit resistance	(a)10mA	50	mΩ	0.270	0.52	0.17	0.075	0.495	Pass
			(b)1mA	50	mΩ	0.246	0.56	0.14	0.072	0.462	Pass
		Temperature rise	Single pole	5	°C	18.30	19.4	17.5	0.85	20.85	Pass
			All poles	5	°C	16.08	17.3	15.5	0.69	18.15	Pass
2	Low temperature aging	Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	52.50	56.7	48.5	1.91	46.77	Pass
		Voltage drop	(a)1A	50	mV/A	0.453	0.95	0.21	0.149	0.900	Pass
			(b)3A	50	mV/A	0.366	0.83	0.16	0.117	0.717	Pass
		Dry circuit resistance	(a)10mA	50	mΩ	0.273	0.56	0.19	0.067	0.474	Pass
			(b)1mA	50	mΩ	0.287	0.59	0.19	0.072	0.503	Pass
		Temperature rise	Single pole	5	°C	15.56	18.9	13.1	2.57	23.27	Pass
			All poles	5	°C	15.68	17.4	15.1	0.98	18.62	Pass
3	Thermal shock	Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	51.66	54.5	47.5	1.92	45.90	Pass
		Voltage drop	(a)1A	50	mV/A	0.465	0.67	0.21	0.073	0.684	Pass
			(b)3A	50	mV/A	0.551	0.78	0.42	0.067	0.752	Pass
		Dry circuit resistance	(a)10mA	50	mΩ	0.372	0.60	0.20	0.083	0.621	Pass
			(b)1mA	50	mΩ	0.429	1.14	0.25	0.168	0.933	Pass
		Temperature rise	Single pole	5	°C	17.93	19.1	16.4	1.13	21.32	Pass
			All poles	5	°C	16.87	17.8	15.7	0.92	19.63	Pass
4	Temperature/humidity cycle I	Resistance variation	20mΩ Max.	5	mΩ	7.17	7.3	7.1	0.08	7.41	Pass
		Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	52.07	56.0	47.0	1.92	46.31	Pass
		Voltage drop	(a)1A	50	mV/A	0.497	1.15	0.12	0.137	0.908	Pass
			(b)3A	50	mV/A	0.375	0.57	0.26	0.067	0.576	Pass
		Dry circuit resistance	(a)10mA	50	mΩ	0.276	0.40	0.22	0.046	0.414	Pass
			(b)1mA	50	mΩ	0.285	0.51	0.22	0.062	0.471	Pass
		Insulation resistance	between (a) terminals	5	MΩ	9160MΩ Min.					Pass
			between (b) terminal and earth	5	MΩ	100,000MΩ Min.					Pass
	Temperature/humidity cycle II	Dielectric withstanding voltage	between (a) terminals	5	-	No insulation breakdown or erosion					Pass
			between (b) terminal and earth	5	-	No insulation breakdown or erosion					Pass
		Leak current		5	mA	0.01mA Max.					Pass
		Resistance variation	20mΩ Max.	5	mΩ	3.98	4.0	3.9	0.05	4.13	Pass
		Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	52.70	56.7	48.2	1.86	47.12	Pass
		Voltage drop	(a)1A	50	mV/A	0.258	0.30	0.21	0.028	0.342	Pass
			(b)3A	50	mV/A	0.389	0.61	0.26	0.068	0.593	Pass
		Dry circuit resistance	(a)10mA	50	mΩ	0.424	0.66	0.23	0.082	0.670	Pass
			(b)1mA	50	mΩ	0.441	0.55	0.28	0.060	0.621	Pass
5	Humidity	Insulation resistance	between (a) terminals	5	MΩ	100,000MΩ Min.					Pass
			between (b) terminal and earth	5	MΩ	100,000MΩ Min.					Pass
		Dielectric withstanding voltage	between (a) terminals	5	-	No insulation breakdown or erosion					Pass
			between (b) terminal and earth	5	-	No insulation breakdown or erosion					Pass
		Leak current		5	mA	0.01mA Max.					Pass
		Resistance variation	20mΩ Max.	5	mΩ	4.07	4.1	4.0	0.06	4.25	Pass
		Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal retention force	30N Min.	40	N	52.47	55.7	48.9	1.96	46.59	Pass
		Voltage drop	(a)1A	50	mV/A	0.509	0.92	0.40	0.080	0.749	Pass
			(b)3A	50	mV/A	0.495	0.94	0.31	0.111	0.828	Pass
6	Corrosion gas	Dry circuit resistance	(a)10mA	50	mΩ	0.438	0.55	0.33	0.064	0.630	Pass
			(b)1mA	50	mΩ	0.417	1.15	0.20	0.136	0.825	Pass
		Insulation resistance	between (a) terminals	5	MΩ	100,000MΩ Min.					Pass
			between (b) terminal and earth	5	MΩ	100,000MΩ Min.					Pass
		Dielectric withstanding voltage	between (a) terminals	5	-	No insulation breakdown or erosion					Pass
			between (b) terminal and earth	5	-	No insulation breakdown or erosion					Pass
6	Corrosion gas	Leak current		5	mA	0.01mA Max.					Pass
		Terminal and Housing appearance	No detrimental deformation	5	-	No detrimental deformation					Pass
		Terminal crimp strength	40N Min.	10	N	74.18	77.9	68.8	3.19	64.61	Pass
		Voltage drop	(a)1A	35	mV/A	0.502	1.09	0.15	0.186	1.060	Pass
			(b)3A	35	mV/A	0.485	1.12	0.28	0.198	1.079	Pass
		Dry circuit resistance	(a)10mA	35	mΩ	0.521	0.91	0.32	0.157	0.992	Pass
			(b)1mA	35	mΩ	0.521	0.95	0.32	0.171	1.034	Pass

Table 3-2 Environmental Performances Result list (10P)

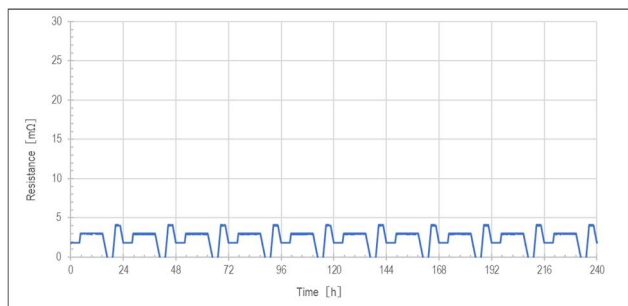
Item	Test name		Requirements	n	Unit	Avg.	Max.	Min.	s	Avg.±3s	Judge.	
7	Mechanical vibration I	Terminal and Housing appearance		No detrimental deformation	16	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	160	mV/A	0.799	1.91	0.18	0.349	1.846	Pass
			(b)3A	3mV/A Max.	160	mV/A	0.723	1.49	0.13	0.238	1.437	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	160	mΩ	0.302	1.39	0.15	0.202	0.908	Pass
			(b)1mA	3mΩ Max.	160	mΩ	0.312	1.59	0.16	0.197	0.903	Pass
		Temperature rise	Single pole	ΔT=40℃ Max.	10	℃	19.75	22.3	16.8	1.41	23.98	Pass
			All poles	ΔT=40℃ Max.	10	℃	20.63	22.3	17.2	1.43	24.92	Pass
	Mechanical vibration II	Short break monitor		Not exceed 1μs and 7Ω	16	-	Not exceed 1μs and 7Ω				Pass	
		Terminal and Housing appearance		No detrimental deformation	8	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	80	mV/A	0.507	1.15	0.28	0.120	0.867	Pass
			(b)3A	3mV/A Max.	80	mV/A	0.399	0.92	0.21	0.102	0.705	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	80	mΩ	0.346	0.51	0.13	0.093	0.625	Pass
			(b)1mA	3mΩ Max.	80	mΩ	0.382	0.52	0.20	0.082	0.628	Pass
		Temperature rise	Single pole	ΔT=40℃ Max.	5	℃	19.10	20.9	16.9	1.59	23.87	Pass
			All poles	ΔT=40℃ Max.	5	℃	16.31	18.4	14.7	1.73	21.50	Pass
8	Short break monitor		Not exceed 1μs and 7Ω	8	-	Not exceed 1μs and 7Ω				Pass		
	Mechanical shock I	Terminal and Housing appearance		No detrimental deformation	8	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	80	mV/A	0.500	0.78	0.27	0.077	0.731	Pass
			(b)3A	3mV/A Max.	80	mV/A	0.554	1.00	0.23	0.195	1.139	Pass
	Mechanical shock II	Short break monitor		Not exceed 1μs and 7Ω	8	-	Not exceed 1μs and 7Ω				Pass	
		Terminal and Housing appearance		No detrimental deformation	8	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	80	mV/A	0.447	1.36	0.30	0.120	0.807	Pass
	(b)3A		3mV/A Max.	80	mV/A	0.375	0.60	0.24	0.077	0.606	Pass	
	9	Over current	Short break monitor		Not exceed 1μs and 7Ω	8	-	Not exceed 1μs and 7Ω				Pass
Terminal and Housing appearance			No detrimental deformation	5	-	No detrimental deformation				Pass		
Voltage drop			(a)1A	3mV/A Max.	5	mV/A	0.484	0.59	0.41	0.078	0.718	Pass
			(b)3A	3mV/A Max.	5	mV/A	0.386	0.46	0.32	0.056	0.554	Pass
Dry circuit resistance			(a)10mA	3mΩ Max.	5	mΩ	0.411	0.48	0.36	0.049	0.558	Pass
			(b)1mA	3mΩ Max.	5	mΩ	0.432	0.52	0.39	0.060	0.612	Pass
10	Vibration with temperature change	Terminal and Housing appearance		No detrimental deformation	12	-	No detrimental deformation				Pass	
		Terminal retention force		30N Min.	40	N	55.69	65.0	48.5	3.17	46.18	Pass
		Voltage drop	(a)1A	3mV/A Max.	60	mV/A	0.629	0.91	0.28	0.098	0.923	Pass
			(b)3A	3mV/A Max.	60	mV/A	0.585	0.92	0.40	0.103	0.894	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	60	mΩ	0.654	1.08	0.16	0.150	1.104	Pass
			(b)1mA	3mΩ Max.	60	mΩ	0.678	1.07	0.42	0.128	1.062	Pass
		Insulation resistance	between (a) terminals	100MΩ Min.	6	MΩ	100,000MΩ Min.				Pass	
			between (b) terminal and earth	100MΩ Min.	6	MΩ	100,000MΩ Min.				Pass	
		Dielectric withstanding voltage	between (a) terminals	No insulation breakdown or erosion	6	-	No insulation breakdown or erosion				Pass	
			between (b) terminal and earth	No insulation breakdown or erosion	6	-	No insulation breakdown or erosion				Pass	
		Temperature rise	Single pole	ΔT=40℃ Max.	6	℃	20.99	22.0	19.0	1.08	24.23	Pass
			All poles	ΔT=40℃ Max.	6	℃	19.11	20.0	17.3	0.94	21.93	Pass
		Leak current		3mA Max.	6	mA	0.01mA Max.				Pass	
		Short break monitor		Not exceed 1μs and 7Ω	6	-	Not exceed 1μs and 7Ω				Pass	
11	Condensation	Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
		Insulation resistance	between (a) terminals	100MΩ Min.	5	MΩ	7,360MΩ Min.				Pass	
			between (b) terminal and earth	100MΩ Min.	5	MΩ	14,100MΩ Min.				Pass	
		Leak current		3mA Max.	5	mA	0.01mA Max.				Pass	
12	Rush current (a)	Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	50	mV/A	0.311	0.48	0.17	0.061	0.494	Pass
			(b)3A	3mV/A Max.	50	mV/A	0.291	0.52	0.14	0.083	0.540	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	50	mΩ	0.247	0.30	0.19	0.032	0.343	Pass
			(b)1mA	3mΩ Max.	50	mΩ	0.247	0.35	0.19	0.031	0.340	Pass
		Temperature rise	Single pole	ΔT=40℃ Max.	5	℃	19.77	20.6	19.5	0.44	21.09	Pass
			All poles	ΔT=40℃ Max.	5	℃	16.33	18.6	15.1	1.40	20.53	Pass
	Rush current (b)	Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
		Voltage drop	(a)1A	3mV/A Max.	50	mV/A	0.278	0.46	0.17	0.062	0.464	Pass
			(b)3A	3mV/A Max.	50	mV/A	0.211	0.36	0.13	0.047	0.352	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	50	mΩ	0.251	0.32	0.15	0.035	0.356	Pass
			(b)1mA	3mΩ Max.	50	mΩ	0.236	0.40	0.16	0.051	0.389	Pass
Temperature rise	Single pole	ΔT=40℃ Max.	5	℃	20.64	21.5	19.1	1.03	23.73	Pass		
Temperature rise	All poles	ΔT=40℃ Max.	5	℃	18.19	19.7	17.1	1.05	21.34	Pass		
13	High temperature operability	Insert terminal into housing		No breaking, damage etc.	5	-	No breaking, damage etc.				Pass	
14	Resistance to stress corrosion	Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
15	Current cycle	Terminal crimp strength		40N Min.	5	N	69.76	75.3	63.9	4.75	55.51	Pass
		Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
		Terminal retention force		30N Min.	40	N	53.04	57.3	47.0	2.23	46.35	Pass
		Terminal crimp strength		40N Min.	10	N	79.16	83.2	73.7	3.43	68.87	Pass
		Voltage drop	(a)1A	3mV/A Max.	50	mV/A	0.395	0.86	0.23	0.097	0.686	Pass
			(b)3A	3mV/A Max.	50	mV/A	0.302	0.53	0.15	0.094	0.584	Pass
		Dry circuit resistance	(a)10mA	3mΩ Max.	50	mΩ	0.233	0.34	0.16	0.048	0.377	Pass
			(b)1mA	3mΩ Max.	50	mΩ	0.245	0.44	0.17	0.050	0.395	Pass
		Temperature rise	Single pole	ΔT=40℃ Max.	5	℃	18.98	19.4	18.7	0.35	20.03	Pass
			All poles	ΔT=40℃ Max.	5	℃	16.24	17.9	14.9	1.10	19.54	Pass
16	Sulfur dioxide gas	Terminal and Housing appearance		No detrimental deformation	5	-	No detrimental deformation				Pass	
		Dry circuit resistance	(a)10mA	3mΩ Max.	35	mΩ	0.593	0.91	0.48	0.094	0.875	Pass
			(b)1mA	3mΩ Max.	35	mΩ	0.669	0.91	0.54	0.098	0.963	Pass



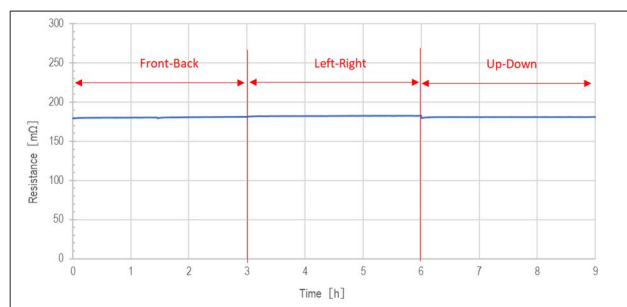
Graph 1 Thermal shock resistance variation



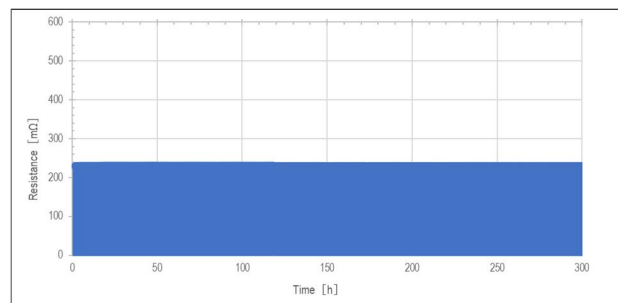
Graph 2 Temperature/humidity cycle I resistance variation



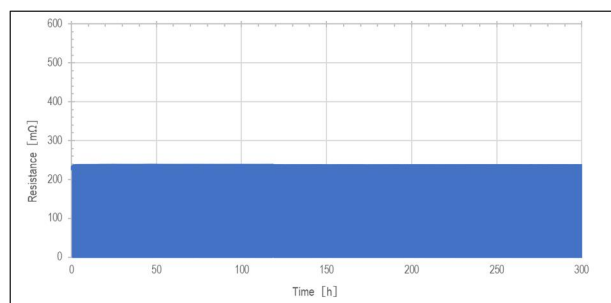
Graph 3 Temperature/humidity cycle II resistance variation



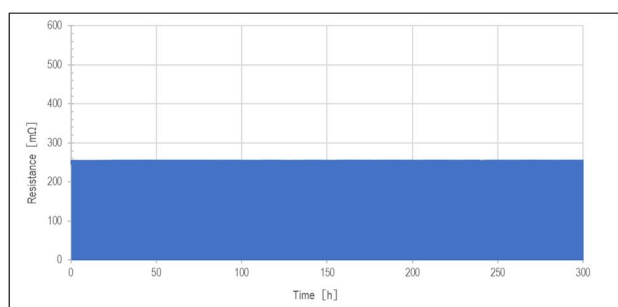
Graph 4 Mechanical vibration II resistance variation



Graph 5 Vibration with temperature change (Front-Back)
resistance variation



Graph 6 Vibration with temperature change (Left-Right)
resistance variation



Graph 7 Vibration with temperature change (Up-Down)
resistance variation