

MP-S03

Part No. 3112-0001

Test Report

Product Specification no. PRS-2228

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|------|--------|------------------|-------------|------------|-------------|
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| 0 | T19013 | January 31, 2019 | S.Kamada | - | T.Hirakawa |
| Rev. | ECN | Date | Prepared by | Checked by | Approved by |

MP-S03 Test Report

1. Purpose

MP-S03 コネクタの性能を PRS-2228 に基づいて評価する。

To evaluate the performance of MP-S03Connector in accordance with PRS-2228.

2. Specimen

MP-S03 (Part No. 3112-0001)

3. Test Sequence

全ての評価は表 1 の試験順序に従って行った。

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

4. Result

表 A～N、グラフ 1～9 参照。試験条件の詳細は PRS-2228 参照。n 数は測定データを意味する。

See Table A to N, Graph 1 to 9. For the details of the testing conditions and requirements, see PRS-2228.

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

5. Conclusion

全ての資料が製品規格（PRS-2228）の必要条件を満足した。

All the specimens met the requirements of PRS-2228.

Table 1 試験順序と試料数 / Test Sequence and Sample Quantity

| 試験項目 Test Item | グループ / Group | | | | | | | | | | | | |
|---|--------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| | A | B | C | D | E | F | G | H | J | K | L | M | N |
| 接触抵抗 Contact Resistance | | | 1,4 | 1,3 | 1,3 | 1,3 | 1,3 | 1,3 | 1,3 | 1,3 | 1,3 | | 2 |
| 定格電圧/電流 Rated Voltage/Current | 1 | | | | | | | | | | | | |
| 接圧 Contact Force | | 1 | 3 | | | | | | | | | | |
| 耐久性 Durability | | | 2 | | | | | | | | | | |
| 耐振動性 Vibration | | | | 2 | | | | | | | | | |
| 耐衝撃性 Shock | | | | | 2 | | | | | | | | |
| 低温寿命 Cold Test | | | | | | 2 | | | | | | | |
| 高温試験 Heat Test | | | | | | | 2 | | | | | | |
| 熱衝撃 Thermal Shock | | | | | | | | 2 | | | | | |
| 湿度 (定常状態) Humidity (Steady State) | | | | | | | | | 2 | | | | |
| 硫化水素ガス H2S Gas | | | | | | | | | | 2 | | | |
| 塩水噴霧 Salt Water Spray | | | | | | | | | | | 2 | | |
| 半田付け性 Solder ability | | | | | | | | | | | | 1 | |
| 半田耐熱性 Soldering Heat Resistance | | | | | | | | | | | | | 1 |
| 試料数 Sample QTY. | 5 pcs. | 10 pcs. | 10 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 10 pcs. | 10 pcs. | 10 pcs. |

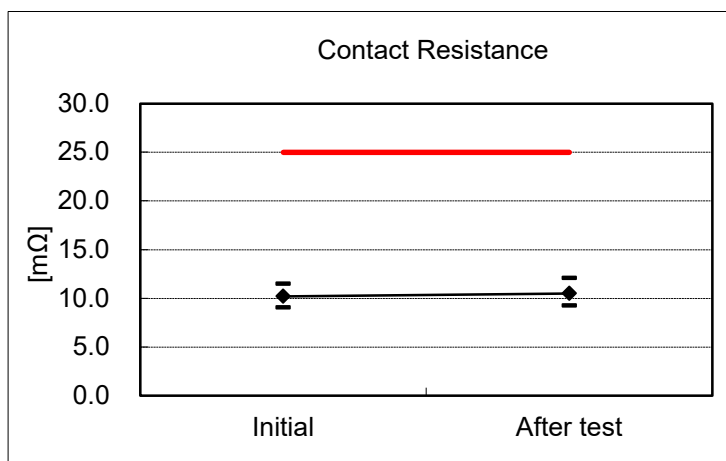
※グループ表中の番号は、試験順序を示す。 / Numbers indicate sequence in which tests are performed.

Table 2-1. 試験結果 / Table.2-1 Test result

| Group | Contents of measurement | | Spec. | Unit | n | Data | | | | Judge. |
|-------|--------------------------|---------------------|--------------------|------|------------------|----------------|--------|-------|-------|--------|
| | | | | | | AVE. | MAX. | MIN. | S | |
| A | Rated Voltage/Current | | | | | | | | | |
| | Temperature | | ΔT 30 MAX. | ℃ | 5 | 20.5 MAX | | | | OK |
| B | Contact Force | | | | | | | | | |
| | | Working Height MAX | 0.30N MIN. | N | 10 | 0.451 | 0.48 | 0.43 | 0.017 | OK |
| | | Working Height MIN. | 1.10N MAX | | | 0.816 | 0.85 | 0.80 | 0.019 | OK |
| C | Durability | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 5 | 10.208 | 11.150 | 9.060 | 0.631 | OK |
| | | After 10 cycles | | | | 10.511 | 12.090 | 9.250 | 0.910 | OK |
| | Contact Force | Working Height MAX | 0.30N MIN. | N | | 0.422 | 0.444 | 0.410 | 0.011 | OK |
| | | Working Height MIN. | 1.10N MAX | | | 0.797 | 0.833 | 0.780 | 0.019 | OK |
| | Apearance | After test | No abnormality | - | | No abnormality | | | | OK |
| D | Shock | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 10.487 | 10.636 | 10.397 | 0.096 | OK | |
| | | After 10 cycles | | | 10.125 | 10.623 | 9.495 | 0.411 | OK | |
| | Electrical discontinuity | During test | 1μs MAX | - | No discontinuity | | | | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| E | Vibration | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 9.713 | 10.070 | 9.138 | 0.389 | OK | |
| | | After 10 cycles | | | 10.311 | 10.992 | 9.370 | 0.757 | OK | |
| | Electrical discontinuity | During test | 1μs MAX | - | No discontinuity | | | | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| F | Cold Test | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 10.298 | 10.846 | 9.480 | 0.569 | OK | |
| | | After 10 cycles | | | 10.287 | 10.961 | 9.912 | 0.402 | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| G | Heat Test | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 11.184 | 12.271 | 10.393 | 0.797 | OK | |
| | | After 10 cycles | | | 9.929 | 10.500 | 9.346 | 0.451 | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| H | Thermal Shock | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 9.890 | 10.278 | 9.463 | 0.343 | OK | |
| | | After 10 cycles | | | 10.352 | 10.656 | 10.055 | 0.240 | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| J | Humidity(steady state) | | | | | | | | | |
| | Contact resistance | Initial | 70 MAX | mΩ | 9.762 | 10.309 | 9.349 | 0.466 | OK | |
| | | After 10 cycles | | | 10.164 | 10.712 | 9.823 | 0.331 | OK | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |

Table 2-2. 試験結果 / Table.2-2 Test result

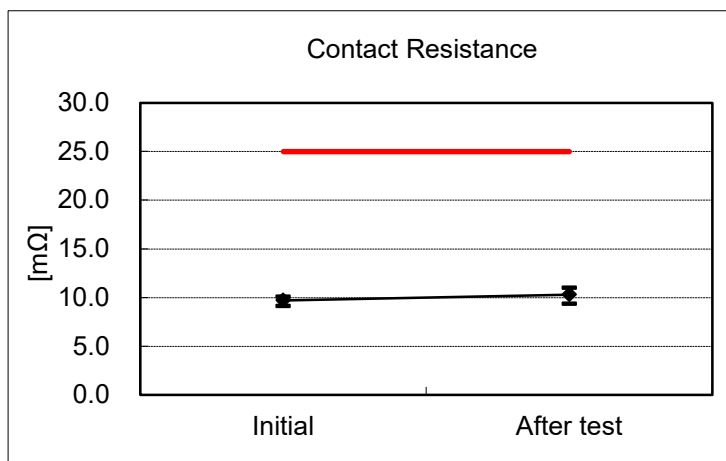
| Group | Contents of measurement | | Spec. | Unit | n | Data | | | | Judge. |
|-------|----------------------------------|-----------------|----------------|--------|----------------|---------|--------|-------|-------|--------|
| | | | | | | AVE. | MAX. | MIN. | S | |
| K | H2S Gas | | 70 MAX | mΩ | 5 | 10.097 | 10.447 | 9.611 | 0.302 | OK |
| | Contact resistance | Initial | | | | | | | | |
| | | After 10 cycles | 10.330 | 10.604 | | 10.094 | 0.230 | OK | | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| L | Salt water spray | | 70 MAX | mΩ | 5 | 10.327 | 10.844 | 9.811 | 0.392 | OK |
| | Contact resistance | Initial | | | | | | | | |
| | | After 10 cycles | 10.642 | 10.892 | | 9.958 | 0.387 | OK | | |
| | Apearance | After test | No abnormality | - | No abnormality | | | | OK | |
| M | Surface Mount Solderability Test | | No abnormality | % | 5 | 95 MIN. | | | | OK |
| | Solder Wetting Area | After test | | | | | | | | |



Graph-1.Durability



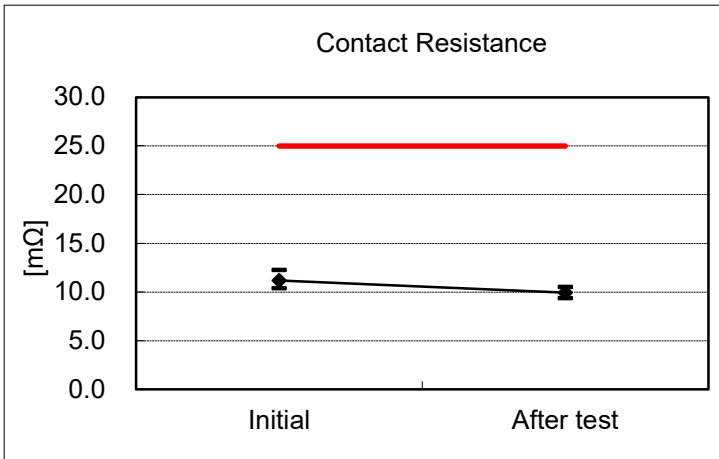
Graph-2.Shock



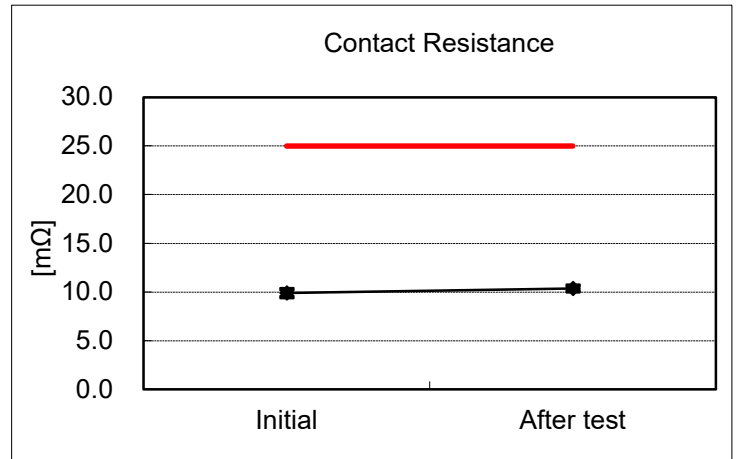
Graph-3.Vibration



Graph-4.Cold Test



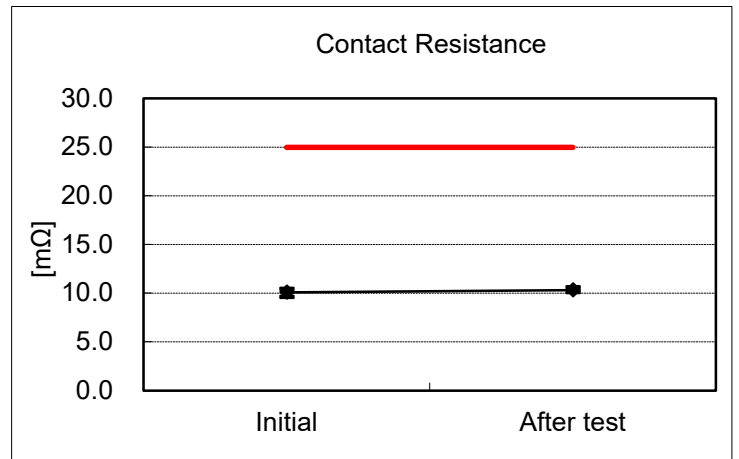
Graph-5.Heat Test



Graph-6.Thermal Shock



Graph-7.Humidity(steady state)



Graph-8.H2S Gas



Graph-9.Salt Water Spray