



SPECIFICATION

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SPEC. NO.: PS-51902-XXXXX-XXX REVISION: A

PRODUCT NAME: SERIAL ATTACHMENT 2X 24Gb/s UNSHIELDED
CONNECTOR

PRODUCT NO: 51902 SERIES

| | | |
|---|--|--|
| PREPARED: HUANG, WEN YING DATE: 2022/03/08 | CHECKED: LEE, I HUNG DATE: 2022/03/08 | APPROVED: WANG, CHUN SHENG DATE: 2022/03/08 |
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TITLE: **SERIAL ATTACHMENT 2X 24 Gb/s UNSHIELDED CONNECTOR**

RELEASE DATE: 2022/03/08

REVISION: A

ECN No: 008098

PAGE: **2** OF **9**

| | | |
|---|--|---|
| 1 | REVISION HISTORY | 3 |
| 2 | SCOPE..... | 4 |
| 3 | APPLICABLE DOCUMENTS | 4 |
| 4 | REQUIREMENTS | 4 |
| 5 | PERFORMANCE..... | 5 |
| 6 | INFRARED REFLOW CONDITION | 8 |
| 7 | PRODUCT QUALIFICATION AND TEST SEQUENCE..... | 9 |



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PAGE: **3** OF **9**

1 Revision History

| Rev. | ECN # | Revision Description | Prepared | Date |
|------|------------|----------------------|----------|------------|
| A | ECN-008098 | NEW PRODUCT RELEASE | WY.HUANG | 2022/03/08 |
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TITLE: **SERIAL ATTACHMENT 2X 24 Gb/s UNSHIELDED CONNECTOR**

RELEASE DATE: 2022/03/08

REVISION: A

ECN No: 008098

PAGE: **4** OF **9**

2 SCOPE

This specification covers performance, tests and quality requirements for **SERIAL ATTACHMENT 2X 24 Gb/s UNSHIELDED CONNECTOR**

3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION
TS-1000: ENVIRONMENTAL TEST METHODOLOGY
SFF-8681: SFF SPECIFICATION

4 REQUIREMENTS

4.1 Design and Construction

- 4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
- 4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

- 4.2.1 Contact: High performance copper alloy (**Phosphor Bronze**)
Finish: (a) Contact Area: **Refer to the drawing.**
(b) Under plate: **Refer to the drawing.**
(c) Solder area: **Refer to the drawing.**
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.3 CAP: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.4 Fit Nail: High performance copper alloy (**Brass**)
Finish: (a) Under plate: **Refer to the drawing.**
(b) Solder area: **Refer to the drawing.**

4.3 Ratings

- 4.3.1 Working Voltage Less than **30 Volts AC (per pin)**
- 4.3.2 Voltage : **30 Volts AC (per pin)**
- 4.3.3 Current : **1.5 Amperes (per pin)**
- 4.3.4 Operating Temperature : **0°C to +55°C**
- 4.3.5 Non-Operating Temperature : **-40°C to +85°C**

4.4 Mates

- 4.4.1 This receptacle conn. is mates with SFF-8681 plug side.

TITLE: **SERIAL ATTACHMENT 2X 24 Gb/s UNSHIELDED CONNECTOR**

RELEASE DATE: 2022/03/08

REVISION: A

ECN No: 008098

PAGE: **5** OF **9**

5 Performance

5.1. Test Requirements and Procedures Summary

| Item | Requirement | Standard |
|---------------------------------|--|--|
| Examination of Product | Product shall meet requirements of applicable product drawing and specification. | Visual, dimensional and functional per applicable quality inspection plan. |
| ELECTRICAL | | |
| Item | Requirement | Standard |
| Low Level Contact Resistance | Initial: 30 mΩ Max. After test: 15 mΩ Max. change allowed | Mate connectors, measure by dry circuit, 20mV DC Max., 100mA Max. (EIA-364-23) |
| Insulation Resistance | 1000 MΩ Min. | Unmated connectors, apply 500V DC between adjacent terminals. (EIA-364-21) |
| Dielectric Withstanding Voltage | No discharge, flashover or breakdown. Current leakage: 1 mA max. | 500V AC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20) |
| Temperature Rise | 30°C Max. Change allowed | Wire contact pins P1,P2,P8 and P9 in parallel for power Wire contact pins P4,P5,P6,P10 and P12 in parallel for return Supply 6 Amp total DC current to the power pins in parallel,returning from the parallel ground pins Measure and record the temperature after 96 hours(45 minutes ON and 15minutes OFF per hours) in ambient condition of 25°C still air (EIA-364-70,Method2) |

TITLE: **SERIAL ATTACHMENT 2X 24 Gb/s UNSHIELDED CONNECTOR**

RELEASE DATE: 2022/03/08

REVISION: A

ECN No: 008098

PAGE: **6** OF **9**

| MECHANICAL | | |
|-------------------------------------|---|---|
| Item | Requirement | Standard |
| Durability | 500 Cycles for Backplane Receptacle After test: 15 mΩ Max. change allowed | The sample should be mounted in the tester and fully mated and unmated the number of cycles. (EIA-364-09) |
| Durability(precondition) | Perform 50 mate/un-mate cycles if the application requires 500 cycles. | No evidence of physical damage (EIA-364-09) |
| Mating Un-mating Force | Mating Force: 25N Max. Un-mating Force: 5N Min. | Measure the force required to mate/un-mate connector. (EIA-364-13 Method A) |
| Contact & Fit Nail Retention | Retention Force: 2N Min. | Measure the retention force of contact and Fit Nail in the housing. |
| Vibration | No discontinuity longer than 1 microsecond allowed. 15 mΩ Max. change from initial contact resistance. | Subject mated specimens to 3.10 G's RMS between 20-500 Hz for 15 minutes in each of 3 mutually perpendicular planes. (EIA-364-28 Condition VII) |
| Mechanical Shock | No discontinuity longer than 1 microsecond allowed. 15 mΩ Max. change from initial contact resistance. | Subject mated specimens to 50G's half-sine shock pulses of 11 milliseconds duration 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. (EIA-364-27) |
| Resistance to Reflow Soldering Heat | No discharge | Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40 sec Min. Peak Temp. : 260°C Max, 10 sec Max. |
| Reseating | Appearance: No damage | Manually mated/unmated the connector or socket perform 3 cycles. |

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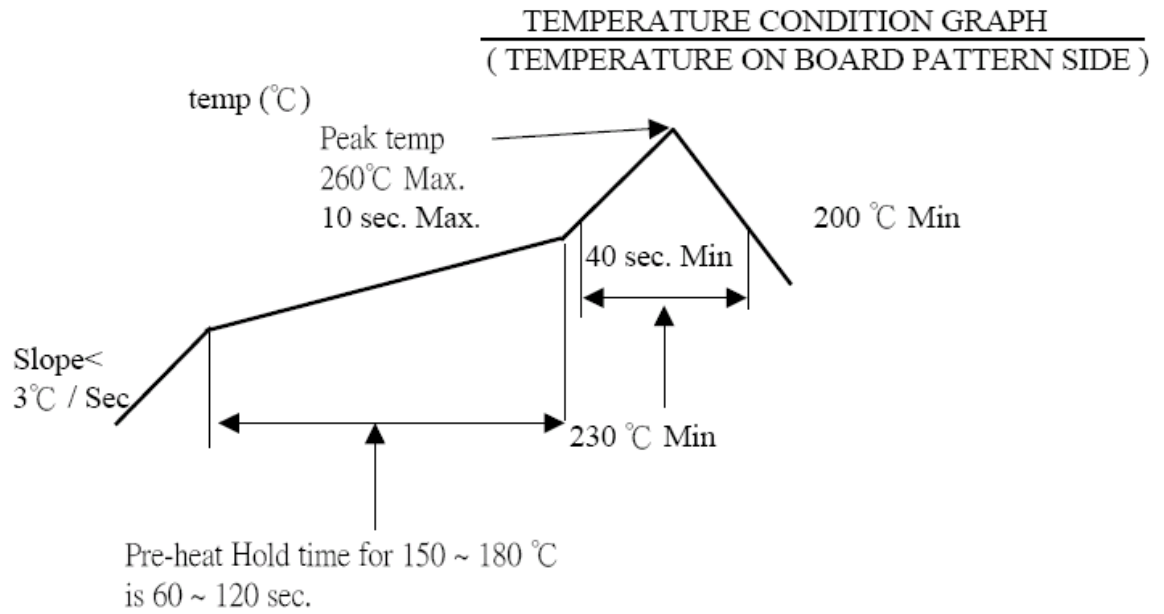
ECN No: 008098

PAGE: **7** OF **9**

| ENVIRONMENTAL | | |
|---------------------------------|--|--|
| Item | Requirement | Standard |
| Thermal Shock | See Product Qualification and Test Sequence Group 5 | Mate module and subject to follow condition for 10 cycles. 1 cycles: -55°C and +85°C each 30min. (EIA-364-32, Test condition I) |
| Temperature Life | See Product Qualification and Test Sequence Group 3 | Subject mated connectors to temperature life at 85°C for 500 hours. (EIA-364-17, Test condition III ,method A, Test time condition C) |
| Temperature Life (precondition) | No physical damage | Subject mated connectors to temperature life at 105°C for 72 hours. (EIA-364-17, method A) |
| Salt Spray | See Product Qualification and Test Sequence Group 1 | Subject mated connectors to 5% salt-solution concentration, 35°C Gold plating 30 u" for 96 hours. (EIA-364-26) |
| Humidity | No Physical damage Initial: 30 mΩ Max. After test: 15 mΩ Max. change allowed | Subject mated connectors to temperature and humidity of 40°C with 90% to 95% RH for 96 hours. (EIA-364-31 Method II Test Condition A) |
| Solder Ability | Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage | Add then into solder bath, Temperature at 245±5°C , for 4-5 sec. (EIA-364-52) |

Note. Flowing Mixed Gas shall be conduct by customer request.

6 INFRARED REFLOW CONDITION



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RELEASE DATE: 2022/03/08

REVISION: A

ECN No: 008098

PAGE: **9** OF **9**

7 PRODUCT QUALIFICATION AND TEST SEQUENCE

| Test or Examination | Test Group | | | | | | | |
|-------------------------------------|---------------|-----------|-------------|-----|--------------|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Test Sequence | | | | | | | |
| Examination of Product | 1、5 9 | 1、6 10 | 1、5 8、11 | 1、6 | 1、8 11、14 | 1、7 | 1、3 | 1、4 |
| Low Level Contact Resistance | 2、4 6、8 | 2、5 9 | 2、4 7、10 | | 2、7 10、13 | 3、6 | | |
| Insulation Resistance | | | | | 3、15 | | | |
| Dielectric Withstanding Voltage | | | | | 4、16 | | | |
| Temperature Rise | | | | 5 | | | | |
| Durability | 3 | | | | | 4 | | |
| Durability(precondition) | | 3 | 3 | 2 | 5 | | | |
| Mating / Un-mating Forces | | | | | | 2、5 | | |
| Contact & Fit Nail Retention | | | | | | | | 3 |
| Vibration | | 7 | | | | | | |
| Mechanical Shock | | 8 | | | | | | |
| Resistance to Reflow Soldering Heat | | | | | | | | 2 |
| Reseating | | | 9 | 4 | 12 | | | |
| Thermal Shock | | | | | 6 | | | |
| Temperature Life | | | 6 | 3 | | | | |
| Temperature Life(precondition) | | 4 | | | | | | |
| Salt Spray | 7 | | | | | | | |
| Humidity | | | | | 9 | | | |
| Solder Ability | | | | | | | 2 | |
| Sample Size | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |