



PRODUCT SPECIFICATION

USB A TYPE UPRIGHT REVERSE CONNECTOR

1.0 SCOPE

This specification covers the requirements for product performance and test methods of USB A TYPE UPRIGHT REVERSE (Universal Serial Bus Revision 2.0) CONNECTOR.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

2.1.1 PRODUCT NAME: USB A TYPE UPRIGHT REVERSE CONNECTOR

2.1.2 SERIES NUMBER: 48204

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See drawing no: SD-48204-001

3.0 RATINGS

4.1 VOLTAGE

30 Volts AC (RMS) {or 30 Volts DC}

4.2 CURRENT

1.5Amps

4.3 TEMPERATURE

Operating: - 55°C to + 85°C

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| DOCUMENT NUMBER: PS-48204-001 | CREATED / REVISED BY: COLIN DUAN | CHECKED BY: Allen Lin | APPROVED BY: Wilson Chang |



PRODUCT SPECIFICATION

4.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|------|---------------------------------|---|--|
| 1 | Low Level Contact Resistance | EIA 364-23 Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA . | 30 milliohms MAXIMUM |
| 2 | Insulation Resistance | EIA 364-21 Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground | 1000 Megohms MINIMUM |
| 3 | Dielectric Withstanding Voltage | EIA 364-20 Un-mate connectors: apply a voltage of 500 volts VAC for 1 minute between adjacent terminals and between terminals to ground. | No breakdown; current leakage < 0.5 mA |
| 4 | Contact Capacitance | EIA-364-30 Test between adjacent circuits of unmated connector at 1 MHz. The object of this test is to detail a standard method to determine the capacitance between conductive elements of a USB connector. | 2 pF Maximum per Contact |
| 5 | Contact Current Rating | EIA 364-70 Method B Mate connectors : measure the temperature rise at the rated current (1.5A). | Temperature rise : 30 ° maximum |

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5.2 MECHANICAL REQUIREMENTS (continued)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|------|-----------------------------------|---|---|
| 6 | Connector Mate And Un-mate Forces | EIA 364-13 Mate and un-mate connector (male to female) at a rate of 20 mm (1 ± ¼ inch) per minute. | Mating Force: 35 N MAXIMUM |
| | | | Un-mating Force: 10 N MINIMUM |
| 7 | Durability | EIA-364-09 Mate and un-mate Connector assemblies for 1500 cycles at maximum rated of 300 cycles per hour. | Shall meet visual requirement, show no physical damage |
| 8 | Vibration (Random) | EIA 364-28, test condition VII. Mate connectors and vibrate per | 1). No discontinuities of 1 microsecond or longer duration 2). Shall meet visual requirement, show no physical damage. |
| 9 | Mechanical Shock | EIA 364-27 Test Condition H Subject mated connectors to 30G's half-sine shock pulses of 11ms duration. Three shocks in each direction applied along three mutually perpendicular planes, 18 total shock. | 1). No discontinuities of 1 microsecond or longer duration 2). Shall meet visual requirement, show no physical damage. |

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5.3 ENVIRONMENTAL REQUIREMENTS

| TEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|-----|---------------------------|--|--|
| 10 | Humidity | EIA 364-31 Test condition A method III Subject mated connectors to 60 cycles temperature between -25°C to +65°C with 90 to 95% RH | 1). Dielectric Withstanding Voltage: No Breakdown at 500 VAC 2). Insulation Resistance: 1000 Megohms MINIMUM 3). Visual: No Damage |
| 11 | Shock (Thermal) | EIA 364-32, Test Condition I Subject mated connectors to ten cycles between -55°C to +85°C. | 1). Dielectric Withstanding Voltage: No Breakdown at 500 VAC 2). Insulation Resistance: 1000 Megohms MINIMUM 3). Visual: No Damage |
| 12 | Temperature Life | EIA 364-17 Test Condition 2 Method A Subject mated connectors to temperature life at 85°C for 500hours | 1). 30 milliohms MAXIMUM 2). Shall meet visual requirement, show no physical damage. |
| 13 | Solderability | EIA 364-52 After one hour steam aging. | The surface of the portion to be soldered shall at least 95% covered with new solder coating |
| 14 | Resistance To Solder Heat | MIL-STD-202F, Method 210A, Test Condition B. for WAVE SOLDERING Pre-heat: 80°C, 60 Seconds Temperature: 265 ± 5 °C Immersion duration: 10 ± 1 sec. | No mechanical defect on housing or other parts. |

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TEST SEQUENCES IDENTIFICATION

| Test Group | | | | | | | |
|----------------------------------|---------------------------------|-----|-----|-----|-----|-----|-----|
| Test Item | Test Description | A | B | C | D | E | F |
| | Examination of product | 1 9 | 1 5 | 1 9 | 1 3 | 1 3 | 1 3 |
| 1 | Low Level Contact Resistance | 3 7 | 2 4 | | | | |
| 2 | Insulation Resistance | | | 3 7 | | | |
| 3 | Dielectric Withstanding Voltage | | | 4 8 | | | |
| 4 | Contact Capacitance | | | 2 | | | |
| 5 | Contact Current Rating | | | | | 2 | |
| 6 | Mating & Un-mating Force | 2 8 | | | | | |
| 7 | Durability | 4 | | | | | |
| 8 | Random Vibration | 6 | | | | | |
| 9 | Mechanical Shock | 5 | | | | | |
| 10 | Humidity | | | 5 | | | |
| 11 | Thermal Shock | | | 6 | | | |
| 12 | Temperature Life | | 3 | | | | |
| 13 | Solder ability | | | | 2 | | |
| 14 | Resistance to solder heat | | | | | | 2 |
| Number of Test Samples (Minimum) | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

Note:

- Samples shall be prepared in accordance with applicable manufacturer's instructions and shall be selected at random from current production.
- Precondition samples with 3 cycles durability.
- All the tests shall be performed in the sequence.

5.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

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