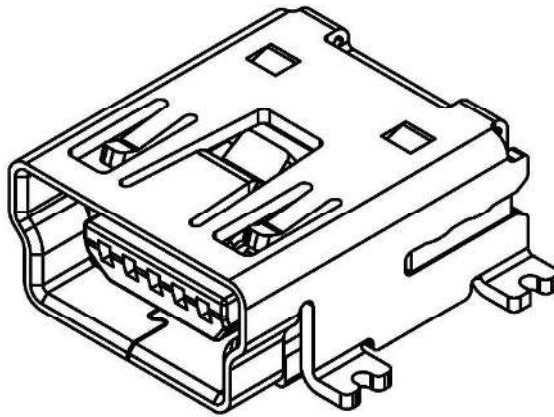


# PRODUCT SPECIFICATION

|                            |   |            |    |             |          |          |    |
|----------------------------|---|------------|----|-------------|----------|----------|----|
| <b>Part Number</b>         | USB2066   | <b>Rev</b> | C  | <b>Date</b> | 11/06/09 |          |    |
| <b>Product Description</b> | Mini USB Receptacle, Type B, 5 Pin, SMT, Horizontal, with Post. |            |    | <b>Page</b> | 1        |          |    |
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## 1.0 SCOPE.

This specification covers performance, tests and quality requirements for the Mini USB Receptacle USB 2066 (Type B, 5-Pin, SMT, Horizontal).

## 2.0 PRODUCT NAME AND PART NUMBER.

Mini USB Receptacle, 5 Pin, Type B: USB 2066.

## 3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL.

Please refer to drawings.

## 4.0 RATINGS.

- 4.1 Current rating ..... 1.0 A Max.
- 4.2 Voltage rating ..... 30 Volts AC RMS Max.
- 4.3 Operating Temperature Range ..... -50°C to 85°C

## 5.0 TEST AND MEASUREMENT CONDITIONS.

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed in ambient conditions unless otherwise specified.

## 6.0 PERFORMANCE.

| Item                   | Test Condition   | Requirement   |
|------------------------|--|---|
| Examination of Product | Visual, dimensional and functional inspection as per quality plan. | Product shall meet requirements of product drawing and specification. |

# PRODUCT SPECIFICATION

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## 6.1 Electrical Performance.

| Item                  | Test Condition   | Requirement  |
|-----------------------|--|--|
| Contact Resistance    | Measure and record contact resistance of mated connector using test current of 100mA max and 20 mV open circuit voltage in accordance with EIA-364-23. | 40 mΩ Initial<br>Less than 50 mΩ at end of test                          |
| Insulation Resistance | Apply 100Volts DC between adjacent contacts of mated connectors for one minute in accordance with EIA-364-21.  | Greater than 100 MΩ  |
| Dielectric Strength   | Apply 100 V AC for 1 minute between adjacent terminal ground in accordance with EIA-364-20.  | No creeping discharge or flash over.<br>Current leakage less than 0.5 mA |
| Capacitance           | Test between adjacent circuits of unmated connectors at 1KHz in accordance with EIA-364-30.  | 2pF Max  |

## 6.2 Mechanical Performance.

| Item           | Test Condition   | Requirement   |
|----------------|--|---|
| Mating force   | Operation Speed : 12.5mm/min.<br>Measure the force required to mate connector. EIA-364-13  | 35N (3.57Kgf) Max.  |
| Unmating Force | Operation Speed : 12.5mm/min.<br>Measure the force required to unmate connector. EIA-364-13  | Initial: 7N (0.71Kgf) Min.<br>1 <sup>st</sup> mating cycle<br>Final: 3N (0.31Kgf) Min.<br>5001 <sup>st</sup> mating cycle |
| Durability     | The connector should be mated and unmated for 5000 cycles at a rate of 200 cycles per hour (manual cycle) in accordance with EIA-364-09.                                 | No evidence of physical damage.<br><br>Contact Resistance<br>≤50mΩ at end of test .                                       |
| Vibration      | Subject mated connectors to 10-55-10 Hz traversed in 1minutes at 1.52mm amplitude, for 2 Hours each, on 3 mutually perpendicular planes. 100mA Max. Applied. EIA-364-28D | No electrical discontinuity greater than 1 μ sec. shall occur. No damage to product.                                      |

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|                            |   |                 |           |                 |           |
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| Item             | Test Condition   | Requirement   |
|------------------|--|---|
| Mechanical Shock | Subject mated parts to 30G half-sine shock pulses for 11 ms. Apply three shocks in each direction applied along three mutually perpendicular planes in accordance with EIA-364-27. | No electrical discontinuity greater than 1 $\mu$ sec. shall occur. No damage to product.<br>Contact Resistance $\leq 100m\Omega$ at end of test . |

### 6.3 Environmental Performance and Others.

| Item                         | Test Condition  | Requirement   |
|------------------------------|---|---|
| Thermal Shock                | Mate Connector and perform the following thermal cycle:-<br>-55 $\pm$ 3 $^{\circ}$ C to +85 $\pm$ 2 $^{\circ}$ C.<br><br>Repeat for 5 cycles in accordance with EIA-364-32, condition I.  | No evidence of physical damage, discharge, flashes or corrosion in contact areas. |
| Humidity Test                | Mate connector and expose to temperature of 40 $^{\circ}$ C and 90 to 95% RH for 96 hours in accordance with EIA-RS-364-31.   | Contact Resistance less than 50m $\Omega$ at end of test.                         |
| Salt Water Spray             | Subject mated connectors to 35 $\pm$ 2 $^{\circ}$ C and 5 $\pm$ 1% salt condition for 48hours. Test in accordance with EIA-364-26.  | No evidence of physical damage, discharge, flashes or corrosion in contact areas. |
| Temperature Life (High)      | Subject the mated connectors to temperature environment at +85 $^{\circ}$ C for 250 hours and in accordance with EIA-364-17 Test condition III, method A.   | No evidence of physical damage, discharge, flashes or corrosion in contact areas. |
| Temperature Life (Low)       | Subject product to -55 $\pm$ 2 $^{\circ}$ C for 96 hours continuously.  | No evidence of physical damage, discharge, flashes or corrosion in contact areas. |
| Solderability                | Dip solders tails into molten solder, held at a temperature of 265 $\pm$ 5 $^{\circ}$ C   | 95% of immersed area must show no voids of pin holes.                             |
| Resistance to Soldering Heat | Pre-soak condition, 85 $^{\circ}$ C, 85% RH for 168 hours.<br>Pre Heat: 150 $^{\circ}$ C ~180 $^{\circ}$ C, 90+30sec.<br>Heat: 230 $^{\circ}$ C Min., 30+10sec.<br>Peak Temp.: 260 $^{\circ}$ C +0/-5, 20~40sec.<br>Duration: 3cycles | No physical damage shall occur.<br>(Lead-Free)                                    |

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## 7.0 PRODUCT QUALIFICATION AND TEST SEQUENCE

| Test Item                       | Test Group |      |      |      |      |      |      |   |
|---------------------------------|------------|------|------|------|------|------|------|---|
|                                 | A          | B    | C    | D    | E    | F    | G    | H |
| Examination of Product          | 1, 4       | 1, 9 | 1, 9 | 1, 3 | 1, 5 | 1, 9 | 1, 9 | 1 |
| Contact Resistance              |            | 4, 8 | 4, 8 |      | 2, 4 | 4, 8 | 3, 7 |   |
| Dielectric Withstanding Voltage |            | 2, 6 | 2, 6 |      |      | 2, 6 |      |   |
| Insulation Resistance           |            | 3, 7 | 3, 7 |      |      | 3, 7 |      |   |
| Mating Force                    |            |      |      |      |      |      | 2, 6 |   |
| Unmating Force                  |            |      |      |      |      |      | 4, 8 |   |
| Durability                      |            |      |      |      |      |      | 5    |   |
| Capacitance                     |            |      |      |      |      |      |      | 2 |
| Vibration                       | 2          |      |      |      |      |      |      |   |
| Physical Shock                  | 3          |      |      |      |      |      |      |   |
| Thermal Shock                   |            |      | 5    |      |      |      |      |   |
| Solderability                   |            |      |      | 2    |      |      |      |   |
| Temperature Life                |            | 5    |      |      |      |      |      |   |
| Humidity Test                   |            |      |      |      |      | 5    |      |   |

# PRODUCT SPECIFICATION

|                            |   |                 |           |                |           |
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|                            |   | <b>Approved</b> | <b>DR</b> |                |           |

Revision details :-

| Revision | Information  | Page | Release Date |
|----------|--|------|--------------|
| A        | Specification Released   | -    | 11/06/2009   |
| B        | Operating Temperature:<br>Was 0°C to +50°C<br>Now -20°C to 60°C    | 2    | 18/10/2010   |
|          | Mating and unmating force replaces contact force                   | 3    |              |
|          | Vibration test conditions updated                                  | 3    |              |
|          | Mechanical shock test conditions updated                           | 4    |              |
|          | Humidity Test, test conditions updated                             | 4    |              |
|          | Temperature Life - split into High and Low                         | 4    |              |
|          | Solderability temperature updated                                  | 4    |              |
|          | Resistance to Soldering Heat added                                 | 4    |              |
|          | Product Qualification and Test Sequence updated                    | 5    |              |
| C        | Operating Temperature:<br>Was -20°C to +60°C<br>Now -50°C to +85°C | 2    | 07/12/2011   |