USB 3.1 Gen 1 Circular

Electrical-Mechanical Specifications

- **Performance:** Product family tested to and passed or exceeded the performance specifications of Table VIII of MIL-DTL-32139
- **Contact Resistance (Nano):** 71 Milliohm Max (71 mV Drop Max) @ 1.0 Amps per MIL-DTL-32139
- **Contact Resistance (Micro):** 26 Milliohm Max (65 mV Drop Max) @ 2.5 Amps per MIL-DTL-32139
- **Current Rating (Nano):** 1 Amp per MIL-DTL-32139
- **Current Rating (Micro):** 3 Amps per MIL-DTL-83513
- **Operating Temperature:** -55°C to 85°C
- **Durability:** >2000 mating cycles min
- **Insulation Resistance:** 5000 megohms @ 500 VDC
- **Shock:** 50 g's with no discontinuities > 10 nanosecond
- **Vibration:** 20 g's with no discontinuities > 10 nanosecond
- **Thermal Vacuum Outgassing (Space Class):** 1.0% max TML, 0.03% max CVCM
- **Mating/Unmating Force:** 2.5 oz (71 g) typical per contact

Material Specifications

- **Contact:** Copper Alloy Per MIL-DTL-32139
- **Contact Finish:** Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
- **Insulator:** Thermoplastic per MIL-M-24519
- **Overmold:** Black Thermoplastic Polyurethane
- **O-Ring:** BUNA-N
- **Cable (Shielded):** 30 AWG (7-38) SPC, FEP / 26 AWG (19-38) SPC, FEP color coded, Black Polyurethane Jacket
- **Shield:** Foil wrap with braid - 38 AWG tin plated copper

Shell Options

- **Brass Alloy 360 1/2 Hard:** Electroless Nickel per SAE-AMS-2404
- **Stainless Steel, 300 Series:** Black Oxide Finish per MIL-DTL-13924, Class 4*, Passivated per SAE-AMS-2700

* less resistance to salt spray test.
## Electrical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Spec</th>
<th>1-Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Differential Impedance</td>
<td>$Z_{\text{MIN}}$ 75 Ω</td>
<td>$Z_{\text{MIN}}$ 72 Ω</td>
</tr>
<tr>
<td></td>
<td>$Z_{\text{MAX}}$ 105 Ω</td>
<td>$Z_{\text{MAX}}$ 100 Ω</td>
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<tr>
<td>Differential Insertion Loss</td>
<td>Loss @ 7.5 GHz &lt; 25 dB</td>
<td>Loss @ 7.5 GHz 16 dB</td>
</tr>
<tr>
<td>Differential Far-End Crosstalk</td>
<td>FEXT @ 7.5 GHz &lt;-23 dB</td>
<td>FEXT @ 7.5 GHz -28 dB</td>
</tr>
<tr>
<td>Diff-to-Common Mode Conversion</td>
<td>DCM @ 7.5 GHz &lt;-20 dB</td>
<td>DCM @ 7.5 GHz -20 dB</td>
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</tbody>
</table>

Various cable options are available. Measurements shown above with cables manufactured in Asia.