To:

Customer P/N:

UDE P/N: GM8-ZZ-0002

Description: RJ45 multiport 2X8
Through Hole
10G Base-T
Contact Area : 30μ" min. Gold
LED:Without LED

Spec No. Update Date Revision
GM8-ZZ-0001 2018/4/25 B

<table>
<thead>
<tr>
<th>Approved</th>
<th>Checked</th>
<th>Prepared</th>
</tr>
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<tbody>
<tr>
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</table>
1. MECHANICAL DIMENSION

1.1 Product Dimension

<table>
<thead>
<tr>
<th>Unit:mm</th>
<th>General Tolerance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>X.X</td>
<td>± 0.38</td>
</tr>
<tr>
<td>X.XX</td>
<td>± 0.20</td>
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</tbody>
</table>

Part Number & Date Code

Pre-soldering

Detail B

Detail A
1.2 Recommended PCB Layout

Component Side of Board

All dimension tolerances are ±0.05mm unless otherwise specified.

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**Detail A**

- Upper port light pipe profile
- Lower port light pipe profile
- 25X 0.157 Shell PTH
- 2X 3.25 Post PTH
- Recommended Component Side Keep Out Area Of Any Via Hole, Pad, Component Or Circuit Trace. Layout Keepout Area See Table 1
- Standoff
- Product profile

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Light Pipe Profiles
The Designed Gap Between Light Pipe And PC Board is 1.80±0.10mm
Table 1

<table>
<thead>
<tr>
<th>Layer</th>
<th>Trace</th>
<th>Component</th>
<th>Grounding</th>
<th>Test Point</th>
<th>Via Hole</th>
<th>PTH</th>
<th>NPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component side</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Inner layer</td>
<td>O</td>
<td>NA</td>
<td>O</td>
<td>NA</td>
<td>O</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Bottom side</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>O</td>
</tr>
</tbody>
</table>

X--Forbid; O--OK; NA--Not Applicable.

1.3 Recommended Panel Cutout

1.4 Packing Information

12 pcs finished goods per tray

4 trays(48 pcs finished goods) per inner box

4 Inner boxes(192 pcs finished goods) per master carton
1.5 Standard RJ45 Plug Specification

- All dimensions follow:
  FCC subpart F, 68,500, Figure (C)(2)(i) & (C)(2)(ii) & (C)(3)(i)
  IEC 60603-7

- All plugs must be meeting the requirements of plug Go & No-Go gauge.
  Gauge follow: FCC subpart F, 68,500, Figure (C)(4)(i) & (C)(5)(i)

- There must be no damage to Housing and Locking Latch.

- There must be no nicks and cuts in cable.

- Durability: 750 cycles generally
2. REQUIREMENTS

2.1 Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable.

2.2 Material

2.2.1 Terminal Parts (Underplating: 50μ" min. Nickel overall)

2.2.1.1 RJ Terminal: Phosphor Bronze, Thickness=0.25mm

Finish: Contact Area: 30μ" min. Gold

2.2.1.2 Input Terminal: Brass, Thickness=0.35mm

Finish: 100μ" min. Matte Tin

2.2.1.3 Case Terminal: Brass, Thickness=0.30mm

Finish: 100μ" min. Matte Tin

2.2.1.4 Ground Terminal: Phosphor Bronze, Thickness=0.30mm

Finish: 100μ" min. Matte Tin

2.2.2 Plastic Parts

2.2.2.1 Housing: PA6T, Black, <UL94V-0>

2.2.2.2 Lower Case: PA6T, Nature, <UL94V-0>

2.2.2.3 Upper Case: PA6T, Black, <UL94V-0>

2.2.2.4 Spacer: PA6T, Black, <UL94V-0>

2.2.2.5 RJ IM: PA6T, Black, <UL94V-0>

2.2.2.6 Ground IM: PA6T, Black, <UL94V-0>

2.2.2.7 Light Pipe: PC, Transparent <UL94 HB>

2.2.3 Shield Parts

2.2.3.1 GND Spring: Phosphor Bronze, Thickness=0.20mm

Finish: 100μ" min. Matte Tin
2.2.3.2 Front Shield : Stainless steel, Thickness=0.20mm, Pre-soldering
2.2.3.3 Back Shield : Stainless steel, Thickness=0.20mm, Pre-soldering
2.2.3.4 Gasket Shield : Stainless steel, Thickness=0.30mm

2.3 Operating and Storage Temperature

    Operating Temperature : 0°C to +70°C
    Storage Temperature : -40°C to +85°C

2.4 RJ45 specifications

    Insulation Resistance : 500MΩ min.
    Insertion force with the latch depressed : 22N max
    Removal force with the latch depressed : 44N max
    Locking Force of Plug Latch : 50N min. @ 60+/-5 sec
    Durability : 2500 cycles

2.5 Performance and Test Description

    Product is designed to meet electrical, mechanical and environmental performance requirements specified in below table. All tests are performed at ambient environmental conditions per MIL-STD-1344A and EIA-364 unless otherwise specified.

2.6 Packaging and Packing

    All parts shall be packaged and packed to protect against physical damage, corrosion and deterioration during shipment and storage.
3. ELECTRICAL CHARACTERISTICS @ 25°C

3.1 Schematic

PHY Side (Input)  Cable Side (RJ45 Output)

<table>
<thead>
<tr>
<th>PHY Side</th>
<th>Cable Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRD1+ R1</td>
<td>C1 TRP1+</td>
</tr>
<tr>
<td>TRCT1 R3</td>
<td>C2 TRP1-</td>
</tr>
<tr>
<td>TRD1- R2</td>
<td></td>
</tr>
<tr>
<td>TRD2+ R4</td>
<td>C3 TRP2+</td>
</tr>
<tr>
<td>TRCT2 R6</td>
<td>C4 TRP3+</td>
</tr>
<tr>
<td>TRD2- R5</td>
<td>C5 TRP3-</td>
</tr>
<tr>
<td>TRD3+ R7</td>
<td>C6 TRP2-</td>
</tr>
<tr>
<td>TRCT3 R9</td>
<td>C7 TRP4+</td>
</tr>
<tr>
<td>TRD3- R8</td>
<td>C8 TRP4-</td>
</tr>
<tr>
<td>TRD4+ R10</td>
<td></td>
</tr>
<tr>
<td>TRCT4 R12</td>
<td></td>
</tr>
<tr>
<td>TRD4- R11</td>
<td></td>
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</tbody>
</table>

75Ω  2KV, 1000pF  Shield
3.2 Transmitter filter & Receiver filter

Type : Balance low pass 100Ω impedance

Insertion Loss

1MHZ  -0.8 dB Max
20MHZ -0.8 dB Max
50MHZ -1.0 dB Max
200MHZ -1.2 dB Max
400MHZ -2.0 dB Max
500MHZ -3.0 dB Max

3.3 Return Loss

1MHz  -20 dB Min  load 100Ω
100MHz -20 dB Min  load 100Ω
200MHz -18 dB Min  load 100Ω
300MHz -15 dB Min  load 100Ω
400MHz -10 dB Min  load 100Ω
500MHz  -8 dB Min  load 100Ω

3.4 Reflected CM to Diff Conversion  (REF)

50MHZ  -30 dB Min
100MHZ -27 dB Min
200MHZ -24 dB Min
300MHZ -22 dB Min
400MHZ -21 dB Min
500MHZ -20 dB Min
3.5 Reflected Diff to CM Conversion (REF)

- 1MHZ: -48 dB Min
- 100MHZ: -35 dB Min
- 400MHZ: -24 dB Min
- 500MHZ: -24 dB Min

3.6 Diff to CM Conversion (REF)

- 50MHZ: -48 dB Min
- 100MHZ: -42 dB Min
- 200MHZ: -36 dB Min
- 300MHZ: -33 dB Min
- 400MHZ: -30 dB Min
- 500MHZ: -28 dB Min

3.7 CM to CM Attenuation

- 1MHZ: -22 dB Min
- 500MHZ: -20 dB Min
- 800MHZ: -20 dB Min
- 1000MHZ: -17 dB Min

3.8 Cross Talk

- 1MHZ: -34 dB Min
- 350MHZ: -23 dB Min
- 500MHZ: -23 dB Min
3.9 Inductance @ 100KHz, 0.1V 8mA DC BIAS

Input (R1-R2), Input(R4-R5), Input (R7-R8), Input(R10-R11): 160 μH min.

3.10 HiPot Test

Input(R1-R2) To Output(C1-C2): 1500Vac 60s or 2250Vdc 60s
Input(R4-R5) To Output(C3-C6): 1500Vac 60s or 2250Vdc 60s
Input(R7-R8) To Output(C4-C5): 1500Vac 60s or 2250Vdc 60s
Input(R10-R11) To Output(C7-C8): 1500Vac 60s or 2250Vdc 60s
4. WAVE SOLDERING TEMPERATURE PROFILE

**Note:**
The measuring point for the specified temperature shall be on the soldered part of the lead.

Temperature Decrease:
10 °C/sec or more

Temperature:
- 265 ± 3°C
- 140°C
- 100°C

Time (sec):
- 40 sec
- 10 ± 1 sec
5. Revision History

<table>
<thead>
<tr>
<th>Issue Date</th>
<th>Revision</th>
<th>Comments</th>
<th>Operator</th>
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<tbody>
<tr>
<td>2016/6/6</td>
<td>A</td>
<td>Initial Release .</td>
<td>Ray</td>
</tr>
<tr>
<td>2018/4/25</td>
<td>B</td>
<td>Update PCB Layout And RJ Terminal Plastic Parts</td>
<td>Max</td>
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