To:

Customer P/N:

UDE P/N: RTC-10FAAK1F

Description: RJ45 1X4 Tab Up Through Hole
10/100/1000 Base-T
Contact Area: 30μ” Gold
LED: without LED

Contact us
Company: Ceviconn.
Address: Striewitzweg 6E. 14513 Teltow, Brandenburg, Germany
Phone: +49-(0)30-67034913; +49-1575-6870327
Email: sales@ceviconn.com; vickie.liang@ceviconn.com
Http: www.ceviconn.com
1. MECHANICAL DIMENSION

1.1 Product Dimension

General Tolerance:
- $X.X : \pm 0.25$
- $X.XX : \pm 0.13$
- $X.XXX : \pm 0.08$

[Diagram of mechanical dimensions with measurements provided]
1.2 Recommended PCB Layout

Component Side of Board

All dimension tolerances are ±0.05mm unless otherwise specified.
1.3 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 : 30μ" min. Nickel overall)

2.2.1.1 RJ Terminal : PH. Bronze, Thickness=0.30mm

Finish : Contact Area : Gold Flash

2.2.1.2 Input Terminal : Brass, Thickness=0.35mm

Finish : 100μ" min. Tin

2.2.1.3 Case Terminal : Brass, Thickness=0.30mm

Finish : 100μ" min. Tin

2.2.2 Plastic Parts  <UL94V-0>

2.2.2.1 Housing : High Temperature Thermoplastic, Black

2.2.2.2 Case : High Temperature Thermoplastic, Black

2.2.2.3 Spacer : Thermoplastic, Black

2.2.2.4 Cover : Thermoplastic, Black

2.2.3 Shield Parts

2.2.3.1 Front Shield : Stainless, Thickness=0.20mm, unplating

2.2.3.2 Back Shield : Stainless, Thickness=0.20mm, Pre-soldering
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

3.1 Schematic

```plaintext
<table>
<thead>
<tr>
<th>INPUT</th>
<th>RJ45 OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT R5</td>
<td></td>
</tr>
<tr>
<td>TD1+ R1</td>
<td>C1 TX1+</td>
</tr>
<tr>
<td>TD1- R2</td>
<td>C2 TX1-</td>
</tr>
<tr>
<td>TD2+ R3</td>
<td>C3 TX2+</td>
</tr>
<tr>
<td>TD2- R4</td>
<td>C6 TX2-</td>
</tr>
<tr>
<td>TD3+ R7</td>
<td>C4 TX3+</td>
</tr>
<tr>
<td>TD3- R8</td>
<td>C5 TX3-</td>
</tr>
<tr>
<td>TD4+ R9</td>
<td>C7 TX4+</td>
</tr>
<tr>
<td>TD4- R10</td>
<td>C8 TX4-</td>
</tr>
<tr>
<td>CT R6</td>
<td>Shield 2KV</td>
</tr>
<tr>
<td></td>
<td>1000pF</td>
</tr>
</tbody>
</table>
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3.2 Transmitter filter & Receiver filter

Type: Balance low pass 100Ω impedance

Insertion loss: 1~100 MHz -1.0dB max.

Return loss: 1~30 MHz -18dB min. load 100Ω
            30~60MHz -16dB min. load 100Ω
            60~80MHz -12dB min. load 100Ω
            80~100MHz -10dB min. load 100Ω

3.3 Common Mode Rejection

@ 1~100 MHz -30dB min.

3.4 Cross Talk

@ 1~100 MHz -30dB min.

3.5 Inductance @ 100KHz, 0.1V, 8mA DC BIAS

Input(R1-R2), Input(R3-R4), Input(R7-R8), Input(R9-R10): 350 μH min.

3.6 HiPot Test

Input(R1-R2) To Output(C1-C2): 1500Vac 60s or 2250Vdc 60s
Input(R3-R4) To Output(C3-C6): 1500Vac 60s or 2250Vdc 60s
Input(R7-R8) To Output(C4-C5): 1500Vac 60s or 2250Vdc 60s
Input(R9-R10) To Output(C7-C8): 1500Vac 60s or 2250Vdc 60s
4. ORDER INFORMATION

RTC10FAAK1F

A. LED Code:

without LED. <Refer to Schematic of LED>

B. Mechanical Code:

w/ UDE Logo, w/ All Spring

C. Schematics Code:

AK1 : AK1 circuit

D. Plating Code:

<table>
<thead>
<tr>
<th>Underplating</th>
<th>30 μ&quot; min Nickel overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder Tail</td>
<td>100 μ&quot; min. Bright Tin</td>
</tr>
<tr>
<td>Contact Area</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Gold Flash</td>
</tr>
<tr>
<td>C</td>
<td>6 μ&quot; gold</td>
</tr>
<tr>
<td>B</td>
<td>10 μ&quot; goldld</td>
</tr>
<tr>
<td>D</td>
<td>15 μ&quot; gold</td>
</tr>
<tr>
<td>F</td>
<td>30 μ&quot; gold</td>
</tr>
<tr>
<td>G</td>
<td>50 μ&quot; gold</td>
</tr>
</tbody>
</table>

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5. DIPPING 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