General Description

The HXT42100 is a single channel, low power, Direct Modulated Laser (DML) driver for LR4 parallel optical applications that supports data rates up to 28Gbps and optical reach up to 10km. In conjunction with a DFB laser diode an individual DFB laser diode, the device handles the complete digital-to-optical conversion, including CML input with equalization, laser driver, drive control, and supervision.

Designed for direct DC-coupled die in TOSA applications with a small number of additional components for cost-effective and compact assemblies. Available in die form.

Applications

• Up to 10km LR 100G-BASE Ethernet modules for datacenters
• Up to 2km CLR 100G-BASE Ethernet modules for datacenters
• 32G Fiber Channel modules to 10km
• InfiniBand EDR optical modules
• Proprietary single channel optical modules

Features

• 200mW total channel $P_{\text{Diss}}$ if configured for:
  o $I_{\text{MOD}} = 50mA_{\text{PP}}$
  o $I_{\text{BIAS}} = 50mA$
• Supports up to: $I_{\text{MOD}} = 50mA_{\text{PP}}$ & $I_{\text{BIAS}} = 50mA$
  with $V_{\text{CC}} = 2.5V$
• Programmable Input Equalization
• Input Signal Detect (SD) with Squelch
• Input Polarity Inversion
• Programmable Pulse Width Adjustment
• Programmable Laser Modulation Current Amplitude Peaking and Peaking Duration
• Integrated Temperature Sensor
• Interrupts with User selectable Mask control
• Laser Disable for $I_{\text{MOD}}$ and $I_{\text{BIAS}}$
• 2-wire interface control and symmetric pad design maximize module design flexibility
• QSFP MSA compliant

Ordering Information

<table>
<thead>
<tr>
<th>Part</th>
<th>Temp Range</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HXT42100-DNU¹</td>
<td>-5°C to +95°C</td>
<td>Bare Die Design Size: 1300μm x 1070μm</td>
</tr>
<tr>
<td>HXT42100-TNU²</td>
<td></td>
<td>Nominal Die Cut Size: 1350μm x 1120μm</td>
</tr>
<tr>
<td>HXT42100EVB</td>
<td>Room Temp</td>
<td>Evaluation Board</td>
</tr>
</tbody>
</table>

Notes:

¹ – Waffle Pack
² – Blue Tape

For price, delivery schedules, and to place orders, please contact IDT: [www.IDT.com/go/sales](http://www.IDT.com/go/sales)
Device Diagram

Figure 1: Functional block diagram
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