
Low Cost 3.3 V 125/250 Mbps Transmitter IC for RCLED based applications over Optical Fiber

Main Features

- Up to 25 mA modulation current
- Fabricated in standard high-volume, low cost, 'digital' CMOS process
- Less than 14.5 mA total current consumption (excluding drive current)
- Sleep Current less than 30 μ A (sleep mode can be disabled)
- Differential LVDS input with AC-coupled CML compatibility
- Supports RCLED emitters, with mask-programmed on-chip Temperature Compensation and Pulse Width Adjust
- 3.3 V supply
- High temperature operation (up to 125 °C junction temperature)
- No external components within FOT required

Applications

- Fast Ethernet
- 250 Mbps transmitter

General Description

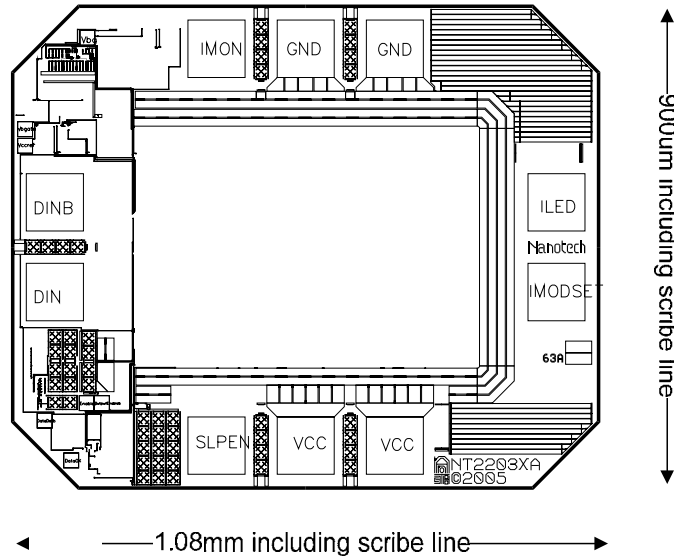
The NT22031 is a full-custom CMOS IC designed for high-speed RCLED drive for applications such as Fast Ethernet and 250 Mbps over POF.

The drive current can be set by an external resistor (defined as two 15 k Ω resistors in parallel) using the I_{MODSET} pad or using an on-chip resistor by connecting I_{MODSET} to GND. 3dB optical power reduction functionality is also supported by connecting this pad to VCC.

The NT22031 driver IC will be supplied in die form, with a clearly visible orientation.

For full datasheet, pricing, ordering and delivery information, please email Nanotech Semiconductor at sales@nanosemi.co.uk or visit our website at www.nanosemi.co.uk.

Chip Padout



**Figure 1 - Bare die – 1000 μm x 820 μm plus 80 μm scribe lane
150 μm pad pitch, 96 μm pads (86 μm passivation opening)**

Pad Descriptions

Pad No.	Name	Function
1	DINB	LVDS Complimentary Data Input. Also supports AC-coupled CML.
2	DIN	LVDS Data Input. High for maximum emitter illumination. Also supports AC-coupled CML.
3	SLPEN	Sleep pad. Floating for normal operation. Take to GND to disable sleep mode.
4	VCC	Power pad. Connect to most positive supply.
5	VCC	Power pad. Connect to most positive supply.
6	IMODSET	Multifunction control pin: Bonded to GND – internal preset modulation current, Resistor to GND [2* 15 kΩ in parallel] – programmable modulation current, Bonded to V _{CC} – internal preset current / 2 (3 dB reduction)
7	ILED	Driver output. Connect RCLED’s cathode to this pad. Sinks current when DIN is taken high, holds a predetermined voltage wrt V _{CC} when DIN is taken low.
8	GND	Ground pad. Connect to the most negative supply.
9	GND	Ground pad. Connect to the most negative supply.
10	IMON	Current source equal to RCLED drive current / 25. Used to measure actual drive current through RCLED during FOT test using resistor to GND. For Boost bond to GND – this enables a 10 % increase in drive current @ RT