Nanotech Semiconductor

Short-Form Datasheet
NT22030

Low Cost 3.3 V Transmitter IC for LED based Fast Ethernet applications over Optical Fiber

Main Features

- Up to 25 mA modulation current
- Fabricated in standard high-volume, low cost, 'digital' CMOS process
- Compatible with the latest Fast Ethernet specification
- Less than 14.75 mA total current consumption (excluding drive current)
- Differential LVDS input with AC-coupled CML compatibility
- Supports LED 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

Application

- Fast Ethernet

General Description

The NT22030 is a full-custom CMOS IC designed for high-speed LED drive for applications such as Fast Ethernet over POF.

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

The NT22030 driver IC will be supplied in die form, with a clearly visible orientation.

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

Chip Padout

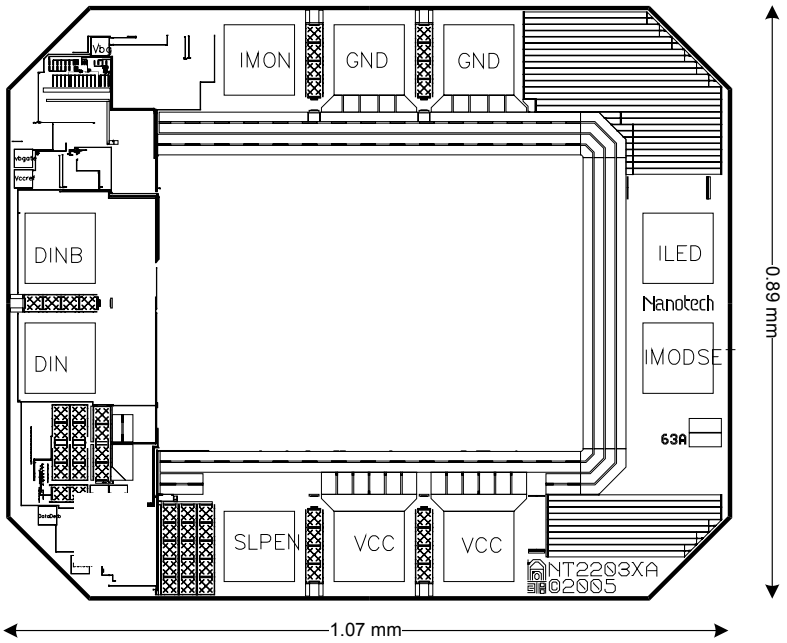

Figure 1 - Bare die – 990 µm x 810 µm plus 80 µm scribe lane
150 µm pad pitch, 96 µm pads (86 µm passivation opening)

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. .Take to GND for normal operation to disable sleep mode. Floating to enable 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 LED 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 LED drive current / 25. Used to measure actual drive current through LED during FOT test using resistor to GND. For Boost bond to GND – this enables a 20 % increase in drive current