

Switchable Constant Current Laser Diode Driver



Features:

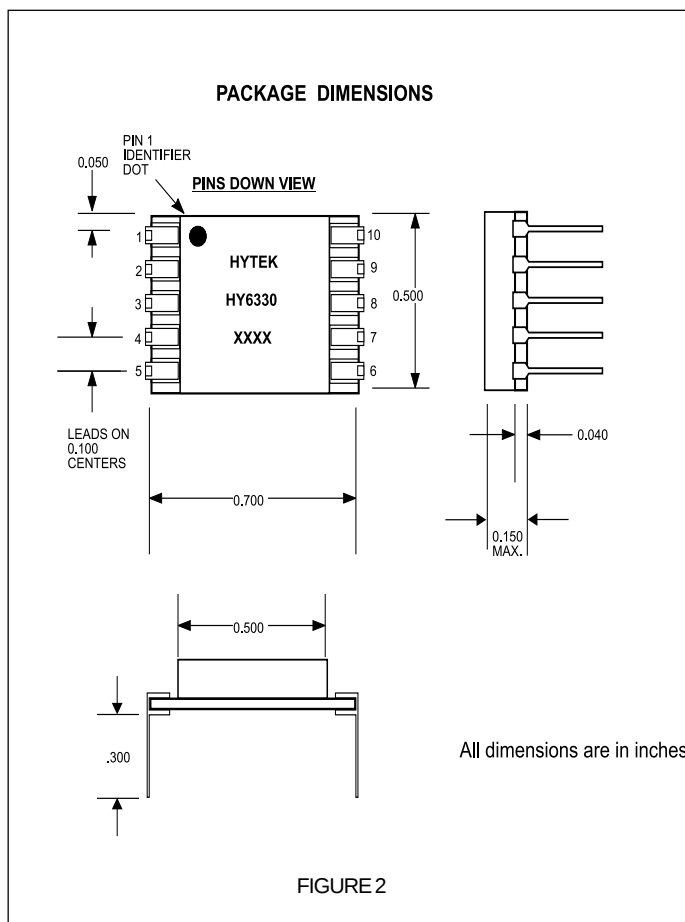
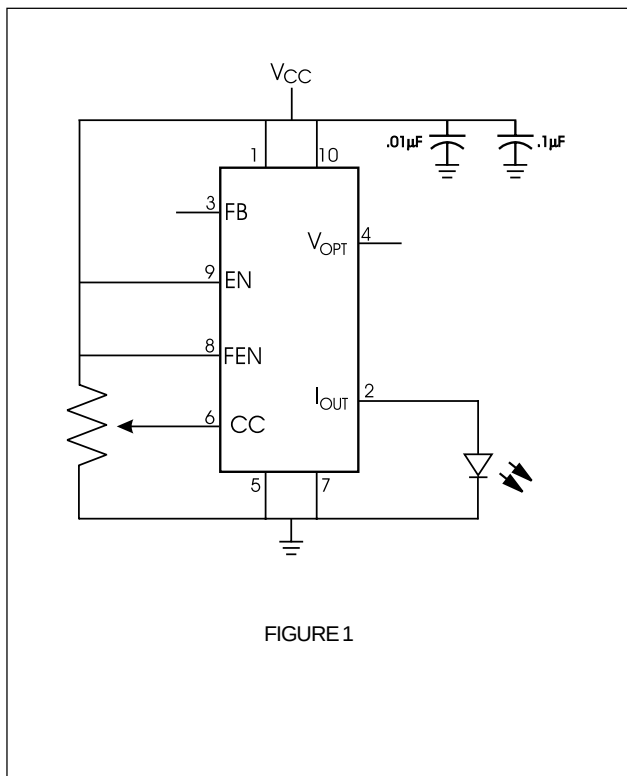
- ◆ Adjustable current to 170mA @ 5Volts
- ◆ Enable/disable pin
- ◆ For common cathode or isolated laser diode current drive
- ◆ Very small size
- ◆ Thru-hole or surface-mount package option

Description:

The HY6330 Laser Diode Driver is a programmable voltage controlled constant current transconductance amplifier with optical feedback.

The HY6330 is used in applications that require a stable, selectable current source to drive a laser diode. The current is selectable from zero to over 170mA. Constant optical output power can be maintained using feedback from a back facet photodetector. Optical output can also be monitored using the voltage proportional output provided. The HY6330 comes in 10-pin thru-hole or surface mount packages.

The HY6330 is designed for applications requiring constant current drive for the operation of laser diodes such as pump sources for EDFA's telecom lasers, and diode pumped semiconductors.



Input Specifications

Power Supply Input (V _{CC}): Pins 1, 10	+5 to +8V @250mA max.
Drive Enable (EN): Pin 9	GND (off, disable), V _{CC} or open (on, enable)
Current Control (CC): Pin 6	0 to 200mA for input voltage 0 to V _{CC}
Ground (GND): Pins 5, 7	Power supply ground
Feedback-Optical (FB): Pin 3	0 <FB <V _{CC}
Feedback-Enable (FEN): Pin 8	V _{CC} (disable), GND or open (enable)

Output Specifications

Laser Diode Current Drive (I _{OUT}): Pin 2	0 to 170mA @ 5V, 0 to 250mA @ 8V
Optical Output Monitor (V _{OPT}): Pin 4	Range 0–4V

Environmental Conditions

Operating Temperature	–20°C to 100°C (case)
Storage Temperature	–65°C to 150°C (case)

Signal Descriptions

V _{CC}	Input power supply, +5 Volts typical
EN	The Enable pin is used to enable/disable the output. When the Enable pin is connected to ground, the output is disabled. When this pin is connected to V _{CC} or left open, the laser current is enabled, allowing current to flow through the laser diode.
CC	The current is set by the voltage at the current control input. The voltage, on the current control input, programs the laser diode drive current, I _{OUT} . When the input is at GND the modulation current is zero. Maximum laser current occurs when this voltage is V _{CC} .
GND	Ground return for V _{CC} (input power supply).
FB	This high impedance input is used with a photodetector to control Output Current.
FEN	At V _{CC} this input disables Feedback on Pin 3, which allows diode current to be set by Pin 6.
I _{OUT}	This Output provides drive current to the laser diode; (anode/positive; connect cathode to ground). Maximum drive current is dependent upon laser diode impedance and power supply input voltage.
V _{OPT}	The optical monitor voltage is proportional to the optical output power of the laser diode as sensed by a backfacet photodetector over the range of 1μA to 1mA.