élantec
HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

EL6255C - Product Brief

4-Channel Laser Diode Driver + Oscillator

Features

- Shrink-small package outline
- Voltage-controlled output current source to 150 mA per channel, requiring one external set resistor per channel
- Current-controlled output current source to 150 mA per channel
- Rise time = 1.0 ns
- Fall time = 1.1 ns
- On chip oscillator with frequency and amplitude control by use of external resistors to ground
- Oscillator to 500 MHz
- Oscillator to 100 mA pk/pk
- Single +5V supply (±10%)
- Current amplification = 100
- Disable feature for power-up protection and power savings
- TTL/CMOS control signals

Applications

- DVD drives
- CD-RW applications
- Writable optical drives
- Laser diode current switching

Ordering Information

Part No	Temp. Range	Package	Outline #
EL6255CU	0°C to +70°C	QSOP-16	MDP0040

Complete Product Specifications
Elantec Technical Support:

North America: 1-888-352-6832 X 311
Asia: +85-45-682-5820
Europe: +44-18-977-6020

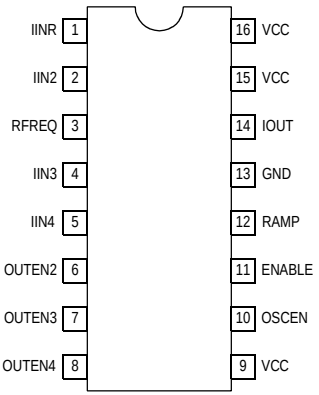
General Description

The EL6255C is a high-performance four channel laser diode current amplifier that provides controlled current to a grounded laser diode. The four amplifiers can provide up to 150 mA per channel of DC or pulsed current. Channels 2, 3, and 4 must be used as the write channels, with switching speeds of one nanosecond rise/fall time. All four channels are summed together at the I_{OUT} output, allowing the user to create multilevel waveforms in order to optimize laser diode performance. The level of the output current is set by an analog voltage applied to an external resistor which converts the voltage into a current at the I_{IN} pin (virtually ground). The current seen at this pin is then amplified by 100X to become a current source at pin I_{OUT}.

An on-chip 500 MHz oscillator is provided to allow current modulation when in the read mode. This is turned on when the OSCEN pin is held high (floating not recommended). Complete control of amplitude and frequency is set by two external resistors connected to ground at pins RFREQ and RAMP (see graphs in this data sheet for further explanation). The oscillator will also turn off whenever any of the OUTEN pins for channels 2, 3, and 4 (the write channels) are low (see truth table).

Output current pulses are enabled when an 'L' signal is applied to the OUTEN pins. No output current flows when OUTEN is 'H', and additional laser diode protection is provided since the OUTEN input will float high when open. Complete I_{OUT} shut-off is also achieved by holding the ENABLE pin low, which will override the OUTEN control pins.

Connection Diagram



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General Disclaimer

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Elantec Semiconductor, Inc.
675 Trade Zone Blvd.
Milpitas, CA 95035
Telephone: (408) 945-1323
(888) 352-6832 (toll free)
Fax: (408) 945-9305
European Office: 44-18-977-6020
Japan Office: 85-45-682-5820

WARNING - Life Support Policy