

## Features

- “Shrink-Small” Outline Package
- Voltage controlled output current source, requiring one external set resistor per channel
- Auto Oscillator On-Off with OUTEN Signals
- Rise time = 0.8ns
- Fall time = 0.8ns
- On chip oscillator with frequency and amplitude control by use of external resistors to ground
- Oscillator to 500MHz
- Oscillator to 100mA pk/pk
- Single +5V supply ( $\pm 10\%$ )
- Current amplification = 100
- Disable feature for power-up protection and power savings
- CMOS control signals

## Applications

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

## Ordering Information

Part No.	Temp. Range	Package	Outline #
EL6249CU	0°C to +70°C	16-Pin QSOP	MDP0040

## General Description

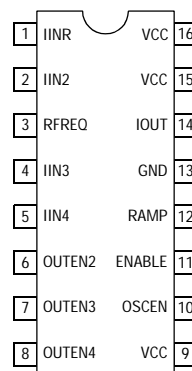
The EL6249C is a four channel laser diode current amplifier that provides controlled current to a grounded laser diode. Channels 2, 3, and 4 should be used as the write channels, with switching speeds of approximately one nanosecond rise/fall time. All four channels are summed together at the I<sub>OUT</sub> 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<sub>IN</sub> pin (virtually ground). The current seen at this pin is then amplified to become a current source at pin I<sub>OUT</sub>.

Output current pulses are enabled when an ‘L’ signal is applied to the OUTEN pin. 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<sub>OUT</sub> shutoff is also achieved by holding the ENABLE pin low, which will override the OUTEN control pins.

An on-chip 500MHz oscillator is provided to allow output current modulation when in read mode. The oscillator is enabled when the OSCEN pin is held high. If any of channels 2, 3, or 4 are active, the oscillator is switched off. 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 external I<sub>IN</sub> resistors allow the user to accurately and independently set each amplifier transconductance by applying a voltage to each resistor, without restriction on the voltage range, thus ensuring broad voltage DAC compatibility. Alternatively, the I<sub>IN</sub> pin can be biased from a current DAC or other current source.

## Connection Diagram



Note: All information contained in this data sheet has been carefully checked and is believed to be accurate as of the date of publication; however, this data sheet cannot be a “controlled document”. Current revisions, if any, to these specifications are maintained at the factory and are available upon your request. We recommend checking the revision level before finalization of your design documentation.

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# ***EL6249C - Product Brief***

***4-Ch Laser Diode Driver + Oscillator***

## **General Disclaimer**

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HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

## **Elantec Semiconductor, Inc.**

675 Trade Zone Blvd.

Milpitas, CA 95035

Telephone: (408) 945-1323

(888) ELANTEC

Fax: (408) 945-9305

European Office: +44-118-977-6020

Japan Technical Center: +81-45-682-5820

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