élantec
HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

EL6279C - Product Brief

4-Ch Laser Diode Driver + Oscillator

Features

- Ultra-Small Package Outline
- Current-controlled output current source to 100 mA per channel, requiring one external set resistor per channel
- Auto Oscillator On-Off with OUTEN Signals
- Rise time = 3.0 ns
- Fall time = 3.5 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
- CMOS control signals

Applications

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

Ordering Information

Part No.	Temp. Range	Package	Outline #
EL6279CU	0°C to +70°C	QSOP-16	MDP0040

General Description

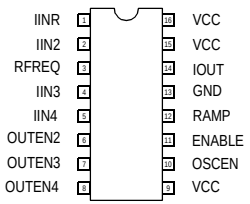
The EL6279C is a four channel laser diode current amplifier that provides controlled current to a grounded laser diode. The four amplifiers can provide up to 100 mA per channel of DC or pulsed current. Channels 2, 3, and 4 should be used as the write channels, with switching speeds of approximately three 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}.

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_{OUT} shutoff is also achieved by holding the ENABLE pin low, which will override the OUTEN control pins.

An on-chip 500 MHz 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_{IN} 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_{IN} pin can be biased from a current DAC or other current source.

Connection Diagram



© 1998 Élantec, Inc.

EL6279C - Product Brief

4-Ch Laser Diode Driver + Oscillator

General Disclaimer

Specifications contained in this data sheet are in effect as of the publication date shown. Elantec, Inc. reserves the right to make changes in the circuitry or specifications contained herein at any time without notice. Elantec, Inc. assumes no responsibility for the use of any circuits described herein and makes no representations that they are free from patent infringement.

élantec

HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

Élantec, Inc.
675 Trade Zone Blvd.
Milpitas, CA 95035
Telephone: (408) 945-1323
(888) ÉLANTEC
Fax: (408) 945-9305
European Office: +44-118-977-6080

WARNING - Life Support Policy

Elantec, Inc. products are not authorized for and should not be used within Life Support Systems without the specific written consent of Elantec, Inc. Life Support systems are equipment intended to support or sustain life and whose failure to perform when properly used in accordance with instructions provided can be reasonably expected to result in significant personal injury or death. Users contemplating application of Elantec, Inc. Products in Life Support Systems are requested to contact Elantec, Inc. factory headquarters to establish suitable terms & conditions for these applications. Elantec, Inc.'s warranty is limited to replacement of defective components and does not cover injury to persons or property or other consequential damages.