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

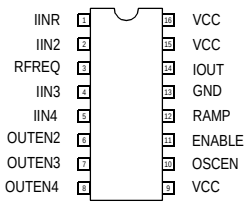
The EL6279C is a four channel laser diode current amplifier that provides controlled current to a grounded laser diode. The four amplifiers can provide up to 100 mA per channel of DC or pulsed current. Channels 2, 3, and 4 should be used as the write channels, with switching speeds of approximately three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



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General Disclaimer

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