

**Features**

- Split Supply for Blue Laser diode capability
- High-performance laser diode driver
- Voltage-controlled output current source to 150mA per channel, requiring one external set resistor per channel
- Current-controlled output current source to 150mA per channel
- Rise time = 2.0ns
- Fall time = 2.0ns
- 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 ( $\pm 10\%$ )
- Disable feature for power-up protection and power savings
- CMOS control signals

**Applications**

- Writable optical drives
- Laser diode current switching
- General blue laser usage

**Ordering Information**

| Part No  | Temp. Range  | Package | Outline # |
|----------|--------------|---------|-----------|
| EL6250CU | 0°C to +70°C | QSOP-24 | MDP0040   |

**General Description**

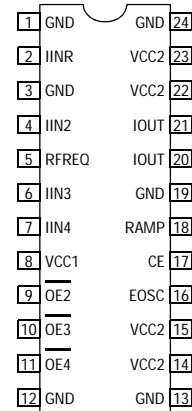
The EL6250C is a split supply, four channel laser diode current amplifier that provides controlled current to a grounded laser diode. Channels 2, 3, and 4 must be used as the write channels, with switching speeds of approximately two nanoseconds rise/fall time. All four channels are summed together at the I<sub>OUT</sub> output, allowing the user to create multi-level 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 pin I<sub>IN</sub>. The current seen at this pin is then amplified to become a current source at pin I<sub>OUT</sub>.

An on-chip 500MHz oscillator is provided to allow current modulation when in the read mode. This is turned on when the EOSC 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).

Output current pulses are enabled when an 'L' signal is applied to the OE pin. No output current flows when OE is 'H', and additional laser diode protection is provided since the OE input will float high when open. Complete I<sub>OUT</sub> shut-off is also achieved by holding the CE pin low, which will override the OE control pins. VCC2 should be set to about 1.5V above the maximum laser voltage, while VCC1 should be set to +5V to minimize chip dissipation.

The external 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.

# ***EL6250C - Product Brief***

## ***Split Supply Laser Driver and Oscillator***

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***élantec***

HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

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