

Features

- “Shrink-Small” Outline Package
- Voltage-controlled output current source requiring one external set resistor per channel
- Current-controlled output current source
- CH2 to 250mA max
- CH3 to 150mA max
- 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
- Auto-oscillator for read
- Single +5V supply ($\pm 10\%$)
- Disable feature for power-up protection and power savings
- Fast Settling APC Amplifier

Applications

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

Ordering Information

Part No	Temp. Range	Package	Outline #
EL6248CU	0°C to +70°C	24-Pin QSOP	MDP0040

General Description

The EL6248C is a high-performance three channel laser driver that provides controlled current to a grounded laser diode. Channels 2 and 3 should be used as the write channels, with switching speeds of approximately one nanosecond rise/fall time. All three channels are summed together at the I_{OUT} 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 the I_{IN} pin (virtually ground). The current seen at this pin is then amplified to become a current source at pin I_{OUT}.

An on-chip 500MHz oscillator is provided to allow output current modulation when in any mode. This is turned on when the OSCEN and OUTEN pins are held high. 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 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} shut-off is also achieved by holding the ENABLE pin low, which will override all other control pins.

The EL6248C also includes a fast settling APC amplifier designed to interface directly with the front end monitor diode and the sample-and-hold amplifier for read and write power control. Its 100MHz bandwidth and 30ns settling time enable up to 16X CD-RW design.

Connection Diagram

1	VOUT	PDIN	24
2	VREF	VCC	23
3	IINR	VCC	22
4	IIN2	IOUT	21
5	RFREQ	IOUT	20
6	IIN3	GND	19
7	OUTENR	RAMP	18
8	OUTEN3	ENABLE	17
9	OUTEN2	OSCEN	16
10	GND	VCC	15
11	NC	GND	14
12	NC	NC	13

EL6248C - Product Brief

3-Channel Laser Diode Driver w/Oscillator & APC Amplifier

General Disclaimer

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