

3-Channel Laser Diode Driver w/ Oscillator



The EL6224 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 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 to become a current source at pin I_{OUT}.

An on-chip 600MHz oscillator is provided to allow output current modulation when in any mode. This is turned on when the OSCEN pin is held high. Complete control of amplitude and frequency is set by two external resistors connected to ground at pins R_{FREQ} and R_{AMP} (see graphs in this datasheet 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} shutoff is also achieved by holding the ENABLE pin low, which will override all other control pins.

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_{IN} pin can be biased from a current DAC or other current source.

Ordering Information

PART NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL6224CU	16-Pin QSOP	-	MDP0040
EL6224CU-T7	16-Pin QSOP	7"	MDP0040
EL6224CU-T13	16-Pin QSOP	13"	MDP0040

Features

- "Shrink-Small" outline package
- Voltage-controlled output current source requiring one external set resistor per channel
- Current-controlled output current source
- CH2 to 300mA 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 600MHz
- Oscillator to 100mA_{PK/PK}
- Single +5V supply (±10%)
- Disable feature for power-up protection and power savings

Applications

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

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