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ISL58831

Dual Laser Driver with APC Amplifier and Spread Spectrum Oscillator

DATA SHEET



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KEY FEATURES

- "Shrink-small" outline package
- Voltage-controlled output current source requiring one external set resistor per channel
- Current-controlled output current source
- CH2 to 235mA max
- CH3 to 170mA max
- CH4 to 100mA 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_{P-P}
- Single +5V supply ($\pm 10\%$)
- Disable feature for power-up protection and power savings
- 200V/ μ s I/V amplifier
- Internal spread spectrum modulation to reduce peak EMI
- Pb-free plus anneal (RoHS compliant)

TYPICAL DIAGRAM

Diagram Not Shown

DESCRIPTION

The ISL58831 is a combination read + 3 write level laser driver and I/V amplifier, with an extra read + oscillator ROM channel for use in dual-laser 'Combo' drivers. A separate (amplitude and frequency) oscillator modulates the selected output for laser noise reduction during read or write. All these functions are provided in a 24 Ld QFN package.

The SEL1 pin, when high, selects the DVD (write) laser. Positive current supplied to the IIN lines, through a userselected resistor, allow the full scale range of each amplifier to be matched to the full scale range of the users control DACs. When the write laser is selected, and the WEN pins are switched low, the respective current is summed to the output with 1ns rise and fall times. Write channel 2 has 240mA output capability with an 250X gain amplifier.

The 100mA_{P-P} (max) oscillator is switched on and off by the OSCEN line. The SEL1 line allows the oscillator to operate at different amplitudes and frequencies for each laser.

The entire chip is powered down when ENABLE is low. The user can define the gain of the I/V amplifier. With a slew rate of 200V/ μ s, the I/V amplifier can normally settle to 1% within 30ns.

An internal spread spectrum circuit modulates the oscillator frequency to help reduce peak EMI.

APPLICATIONS

- Combo CD-R + DVD-R
- DVD \pm RW to 8X
- Writable optical disk drives



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