Data Sheet | February 18, 2004 | FN7409

Laser Diode Driver w/ Waveform Generator

The EL6935 is a highly integrated laser diode driver designed to support multi-standard writable optical drives. It accomplishes this by incorporating a waveform generator wherein the diode currents and timing details can be programmed before operation. The data input circuitry inspects the NRZ serial data waveform and generates programmed waveforms in recognition of 3, 4, 5, or 6 or more clock periods of space changing to 3, 4, 5, or 6 or more clock periods of mark, and vice versa. The part also has an IV amplifier with concurrent read and write sampling. The gains of the IV amplifier are programmable, eliminating the need for external potentiometers.

The architecture allows reprogramming of the timers to support different media, Blue, DVD, or CD standards, and different speeds. The programming is accomplished through a serial interface port. Two outputs are provided to support dual-laser multi-standard optical heads. The clock and NRZ inputs can be either standard CMOS or LVDS, selectable through a program bit.

The EL6935 operates on a 5V supply for the analog circuits and a 2.5V supply for the digital circuits.

Ordering Information

PART NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL6935CL	38-Pin LPP	-	MDP0046
EL6935CL-T7	38-Pin LPP	7”	MDP0046
EL6935CL-T13	38-Pin LPP	13”	MDP0046

Features

- Complete programmable laser diode driver
- 450mA maximum total output
- 10-bit x 10-bit multiplying DAC output provides 10-bit full scale adjustment and 10-bit resolution at any full scale output
- 60psec timer resolution
- Two laser outputs allows read/ write DVD and CD combinations
- Programmable waveform values support CD-R, CD-RW, DVD-RAM, DVD-R, DVD-RW, DVD+R, DVD+RW, and Blue
- Two analog inputs support slope and read APC
- HFM oscillator programmable to $100mA_{P-P}$ from 100MHz to 500MHz
- PLL allows reduced-frequency clock on flex cable
- Separate serial input works up to 100MHz
- Dual sampled IV amplifier with programmable sample select and gain select
- Programmable HFM offset when HFM is off

Applications

- Combination DVD writable and CD writable drives
- DVD camcorders
- DVD video recorders