Laser Diode Driver with Waveform Generator

The EL6900 is a highly integrated laser diode driver designed to support Blu-Ray 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 2, 3, 4, or 5 or more clock periods of space changing to 2, 3, 4, or 5 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 all output waveform parameters. The programming is accomplished through a serial interface port. The clock and NRZ inputs can be either standard CMOS or LVDS, selectable through a program bit.

The EL6900 operates on a 5V supply for the analog circuits and a 3.3V supply for the digital circuits.

Ordering Information

PART NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL6900CL	38-Pin QFN	-	MDP0046
EL6900CL-T7	38-Pin QFN	7”	MDP0046
EL6900CL-T13	38-Pin QFN	13”	MDP0046

Features

- Complete programmable laser diode driver
- 350mA maximum total output
- 8-bit x 8-bit multiplying DAC output provides 8-bit full scale adjustment and 8-bit resolution at any full scale output
- 120ps timer resolution
- Blu-Ray Disc standard
- 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 25MHz
- Dual sampled IV amplifier with programmable sample select and gain select
- Programmable HFM offset when HFM is off

Applications

- Blu-Ray ultra-density optical (UDO) drives
- Blu-Ray consumer HDTV video recorders

Pinout

EL6900
(38-PIN QFN)
TOP VIEW