

ISL58797

Laser Diode Driver with Write Current DAC and PDIC Control Outputs

FN7984
Rev 0.00
April 26, 2012

The ISL58797 is a highly integrated, single supply laser diode driver designed to support multi-standard writable optical drives in CD, DVD, and Blu-Ray formats at various speeds. It is a 'hybrid' part having an interface compatible with a conventional LDD, but an internal architecture similar to a write strategy LDD. This combination adds versatility to the conventional interface. The ISL58797 also features PDIC (OEIC) control pins; which help reduce the signal lines on the Flex cables.

The rise time, fall time and overshoot of all outputs are adjustable to compensate for high and low resistance lasers.

The ISL58797 architecture includes dual write current banks, which can be selected using the bank select line, BSEL. This eliminates the need to synchronize the serial port to the media.

The oscillator is internally activated through program assignment to attach to any WEN state.

The WEN lines have internal 100Ω termination resistors. There is a skew detector on the WEN receiver outputs.

Applications

- Combination DVD, CD, and Blue Writable Drives
- BD Camcorders
- BD Video Recorders

Features

- Compatible with all Conventional Controllers Having a Serial Port, with Some Programming
- Programmable Snubber on all Outputs
- PDIC (OEIC) Control Pins
- Compatible with Controllers Having Gray Coded WEN Lines for Glitchless High-Speed Operation
- WEN Line Skew Detection
- 1000mA Maximum Total Write Output Current
- 10-bit x 10-bit Multiplying DAC Output Provides 10-bit Full-Scale Adjustment and 10-bit Resolution at any Full-Scale Output
- Three Laser Outputs Allow Read/Write DVD, CD, and Blue Combinations
- Single +5V Supply
- Analog Inputs Supports Slope and Read APC
- HFM Oscillator Programmable to 100mA_{p-p} and Range from 100MHz to >1GHz
- Programmable HFM On, Off and Cooling Levels
- Programmable Spread Spectrum for Low EMI
- Built-in ADC to Sample Laser Voltage Allows Power Reduction by Optimizing Headroom
- Built-in Thermal Sensor Aids in Thermal Design
- Serial Input Works up to 50MHz
- Pb-Free (RoHS Compliant)

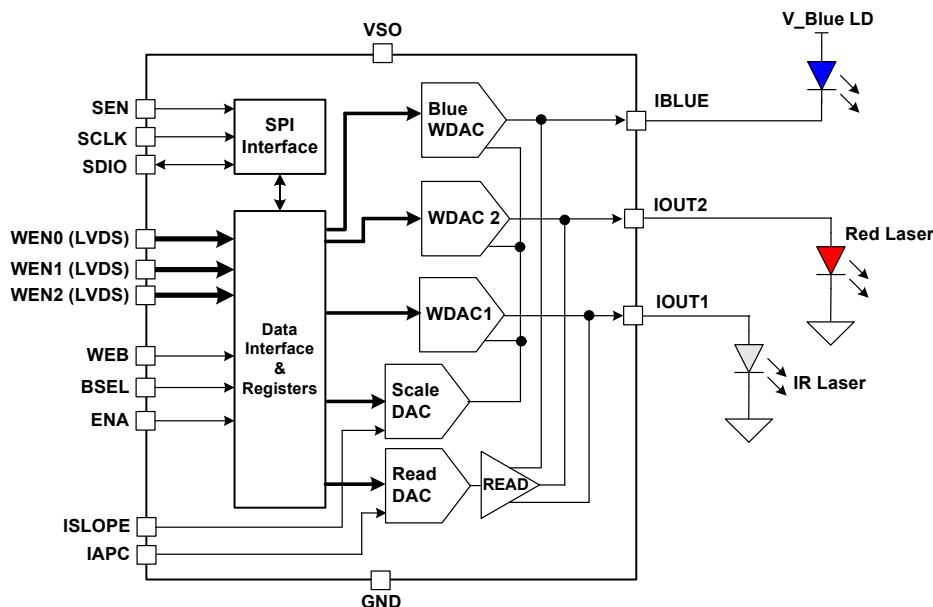


FIGURE 1. SIMPLIFIED BLOCK DIAGRAM

© Copyright Intersil Americas LLC 2005-2017. All Rights Reserved.
All trademarks and registered trademarks are the property of their respective owners.

For additional products, see www.intersil.com/en/products.html

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted
in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

Intersil products are sold by description only. Intersil may modify the circuit design and/or specifications of products at any time without notice, provided that such modification does not, in Intersil's sole judgment, affect the form, fit or function of the product. Accordingly, the reader is cautioned to verify that datasheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com