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800mA Triple Output Laser Diode Driver

ISL58303, ISL58304

The ISL58303, ISL58304 are high-speed triple output laser diode drivers designed to support color field sequential laser light source Pico projection modules. Output channels are designed with independent programmable bias and threshold adjustment to support a wide range of laser diode manufacturers. Both laser diode drivers offer exceptional power efficiency and a high degree of system integration allowing a compact and cost effective system design.

Interface to the system is accomplished via a high-speed serial bus that is made up of SEN, SCLK and SDIO. Initialization of internal registers after power-on reset, operational setup, and laser intensity data for each output channel are communicated through this bus.

To assist with reduction of laser speckle, this laser diode driver has a high frequency modulation input to modulate laser pulses.

For laser operational safety, a hardware enable signal (CE) is ANDed with an internal register bit. Both have to be asserted to enable the device. This prevents an accidental fault causing an unwanted laser output.

Features

- Complete Triple Programmable Laser Diode Driver
- 800mA Maximum Output Current per Channel
- Ganging of Multiple Channels as well as Multiple Chips can be done to Meet the Highest Current Demands
- ISL58303 has all N-MOS Output Channels (I_{OUT1}, I_{OUT2} and I_{OUT3}) for Common Anode (Floating) Red, Green, and Blue Laser Diode Configuration
- ISL58304 Supports 2 N-MOS Output Channels (I_{OUT1} and I_{OUT3}) for Floating Red/Blue Lasers and 1 P-MOS Output (I_{OUT2}) for Grounded Green SxG Laser
- Independent Output Channel Enable
- Programmable Threshold DACs and Color DACs for each Channel
- Supports HFM (High Frequency Modulation) for Speckle Reduction Function
- Fast SPI Serial Interface
- Space Saving Package: 24 Ld 4mmx4mm TQFN

Applications

- RGB Color Field Sequential Laser Projection System
- Hand Held Projector
- Smart Phone

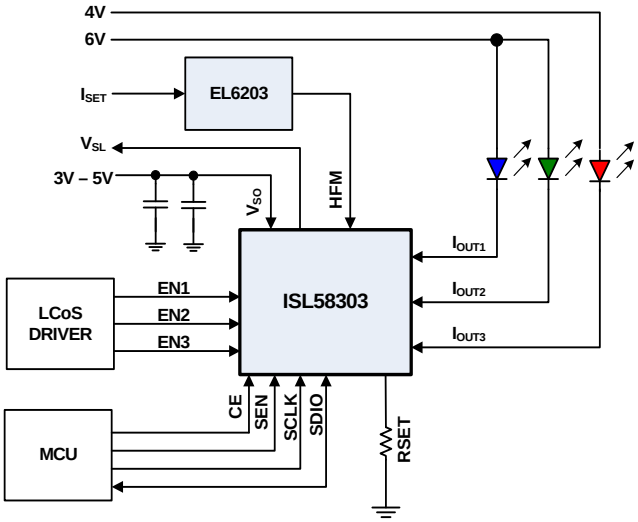

FIGURE 1. ISL58303 TYPICAL APPLICATION

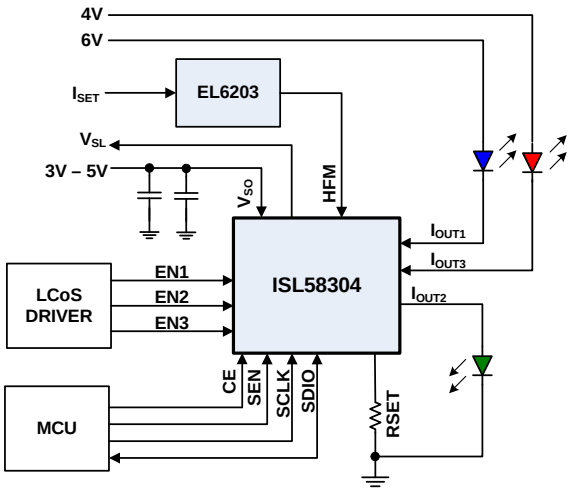

FIGURE 2. ISL58304 TYPICAL APPLICATION

CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
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