

ISL58303

800mA Triple Output Laser Diode Driver

FN7555

Rev 3.00

September 1, 2016

The **ISL58303** is a high-speed triple output laser diode driver designed to support color field sequential laser light source Pico projection modules. Outputs can be ganged together to achieve peak total current greater than 3.6A. Output channels are designed with independent programmable bias and threshold adjustment to support a wide range of laser diode manufacturers. The ISL58303 offers exceptional power efficiency and a high degree of system integration allowing a compact and cost effective system design.

To assist with reduction of laser speckle, this laser diode driver has a high frequency modulation input to modulate laser pulses. This can be used to achieve outputs pulses of less than 1ns.

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.

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
- 1200mA peak 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<sub>OUT1</sub>, I<sub>OUT2</sub> and I<sub>OUT3</sub>) for common anode laser diode configurations
- Independent output channel enable
- Programmable threshold DACs and color DACs for each channel
- Supports High Frequency Modulation (HFM) that switches all 3 outputs in unison producing pulse widths of less than 1ns.
- Fast SPI serial interface
- Space saving package: 24 Ld 4mmx4mm TQFN

Applications

- RGB color field sequential laser projection system
- Time of flight measurement systems
- High speed/high current laser diode systems

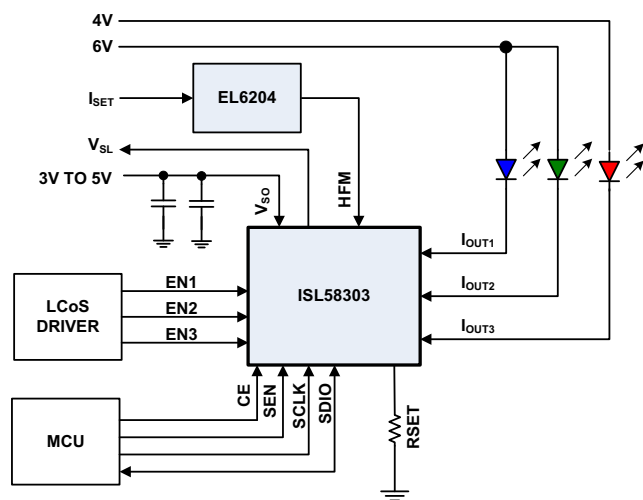


FIGURE 1. ISL58303 TYPICAL APPLICATION LCOS

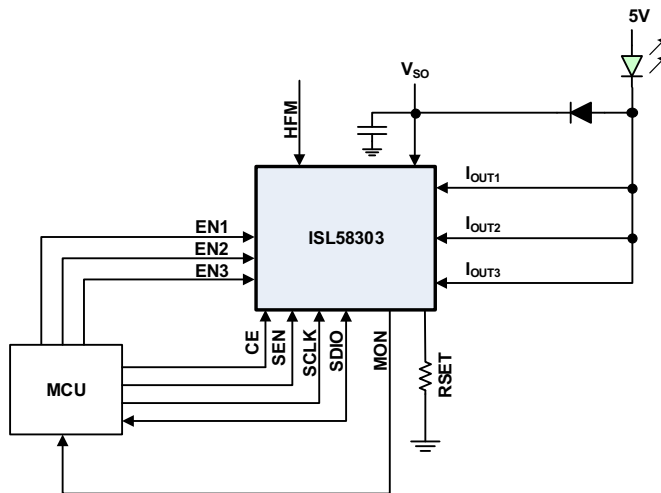


FIGURE 2. ISL58303 TYPICAL APPLICATION HIGH CURRENT

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