

Wide Optical Spectrum Laser Power Monitor IC

ISL58333

The ISL58333 photo sensor IC has a wide optical spectral sensitivity from 400nm to 1000nm. It is good for multiple light source applications, such as laser based projectors. The ISL58333 has two banks of three sets of gain registers. For a Pico-Projector application, the two banks of gain resistors can be used to monitor bias level and peak level of each wavelength. Bank switching is done by applying a TTL compatible logic signal to the HL pin. The three sets of gain registers can be used to adjust optical-to-electrical conversion gain for each RED, GREEN, and BLUE laser or any wavelength in a spectral range for application. The ISL58333 is a single die device that has a photo detector of 0.7mm diameter in the center of the die. The photo current signal is amplified through the TIA, fine gain amplifier, and the output drivers to convert from current to voltage. The output of ISL58333 can be configured to be either differential or single-ended. Gain changing according to each wavelength is done through the I²C serial interface. Registers can be updated in real time while the device is in operation.

The ISL58333 operates from a single +3.3V supply. It is available in a space-saving 9-ball glass top BGA package.

Related Literature

- See TB478 “PCB Assembly Guidelines for Shell-Op 3D Package”

Features

- High Sensitivity from 400nm to 1000nm with Patented Technology for Improved Blue Photo Response
- Differential Voltage Output or Single-Ended Output
- Internal Output Reference or External Output Reference
- Serial Interface for Gain Calibration
- Fast Settling Time < 20ns
- Wide Signal Bandwidth > 80MHz
- Wide Signal Gain Dynamic Range > 20dB
- Low Power Consumption
- Low Output Offset < 50mV
- Small 9-Ball Optical Chip Scale Package (OCSP) (2.2mmx2.2mm)
- I²C Serial Interface

Applications

- Optical Power Monitoring
- Laser Based Pico-Projectors or Projection TV
- Laser Auto Power Control for Laser Based Application
- White Balance for LED Based LCoS and DLP Pico Projectors

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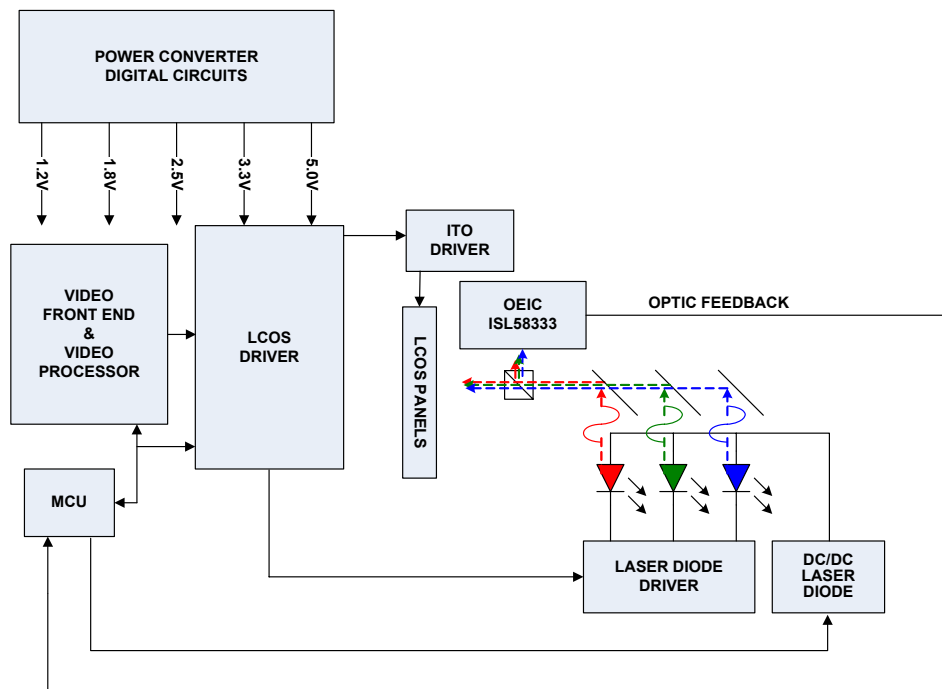


FIGURE 1. APPLICATIONS BLOCK DIAGRAM

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