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3V Wide Optical Spectrum Laser Power Monitor IC

ISL58334

The ISL58334 photo sensor IC has a wide optical spectral sensitivity from 400nm to 1000nm. It is good for multiple light sources application, such as laser based projectors. ISL58334 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 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 ISL58334 is a single die device that has a photo detector of 0.7mm diameter in the center of the die. Photo current signal is amplified through TIA, fine gain amplifier, and output drivers to convert from current to voltage. The output of the ISL58334 can be configured to be either differential or single-ended. Gain changing according to each wavelength is done through 3-wire interface. Registers can be updated in real time while the device is in operation.

The ISL58334 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
- Single +3.3V Power Supply
- 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)
- SPI 3-wire serial interface

Applications

- Optical Power Monitoring
- Laser Based Pico-Projectors or Projection TV
- Laser Auto Power Control for laser based application

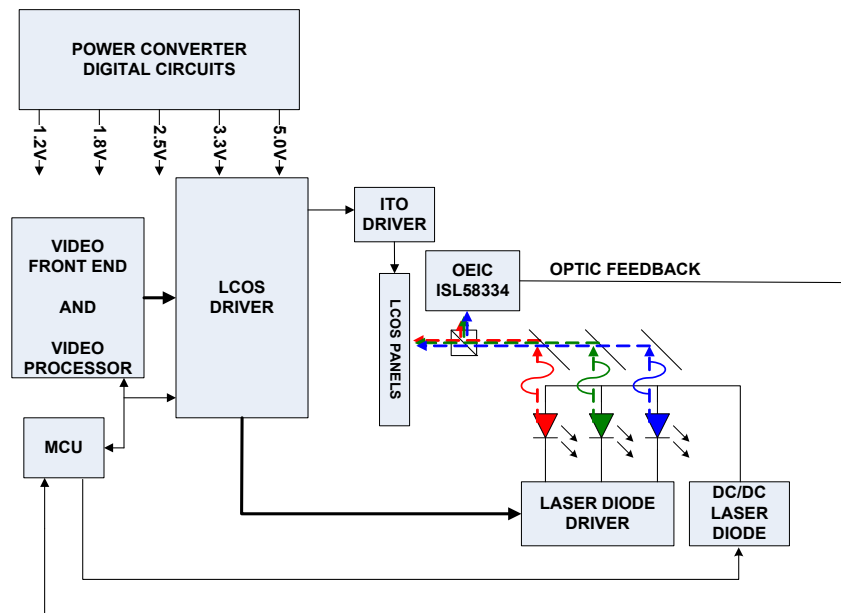


FIGURE 1. APPLICATION BLOCK DIAGRAM

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