Product Information

MLX75023

QVGA Time-of-Flight sensor for Automotive Applications

- 320 x 240 pixels
- 1/3" sensor format (4.8 x 3.6 mm^2)
- High Ambient Light Robustness
- Spectral response range 800-900 nm
- Suitable for LED or laser illumination
- Demodulation up to 40 MHz
- Small glass BGA package
- Ambient temperature range −40 to +105 degC

Melexis
Microelectronic Integrated Systems

Description

The MLX75023 is a QVGA (320 x 240 pixel) resolution optical Time-of-Flight (TOF) camera sensor. Combined with a modulated light source, this sensor is capable of measuring distance and reflectivity at full resolution. The high dynamic range DepthSense™ pixels support up to 120 klux background light. The sensor is available in a chip scale glass BGA package and offers many integration possibilities.

The MLX75023 features 2 analog dual-ended outputs with 9 bit pixel row & 8 bit pixel column addressing up to 50 MHz. Two digital inputs control the DepthSense™ pixel demodulation, up to a frequency of 40 MHz. The remaining digital inputs are used to control the sensor integration and reset sequence. Supply rails of +3.3V and -3.3V should be provided to power the chip. MLX75023 engineering samples and reference application schematic are available on request.

The Most Cost-Effective Real-Time 3D Imaging Solution

Compared to other 3D imaging solutions available on the market, DepthSense™ TOF sensors are most cost-effective, thanks to

- **Standard CMOS process compatibility**
- **Compatibility with LED and laser illumination**
- **Inherently robust 3D imaging**
- **Scalability of resolution, range and field-of- view**
- **High frame rate**
- **Minimal post-processing**

Features & Benefits

- Full QVGA (320 x 240) pixel resolution in 1/3" format
- Small pixel size: 15 x 15 um^2
- Ambient Light Robust up to 120 klux (camera specific)
- Compatible with LED and laser illumination (800-900 nm range)
- Demodulation up to 40 MHz
- Sensor readout up to 50 MS/s
- Available in 6.6 x 5.5 mm^2 glass BGA package
- AEC-Q100 -40° to +105° Qualified

Block Diagram

Bus ICs

BLDC Motor
Control ICs

Pressure Sensors

Wireless ICs

Hall Effect ICs
And Sensors

Optoelectronic
Sensors

Sensor Interface ICs

InfraRed Sensors
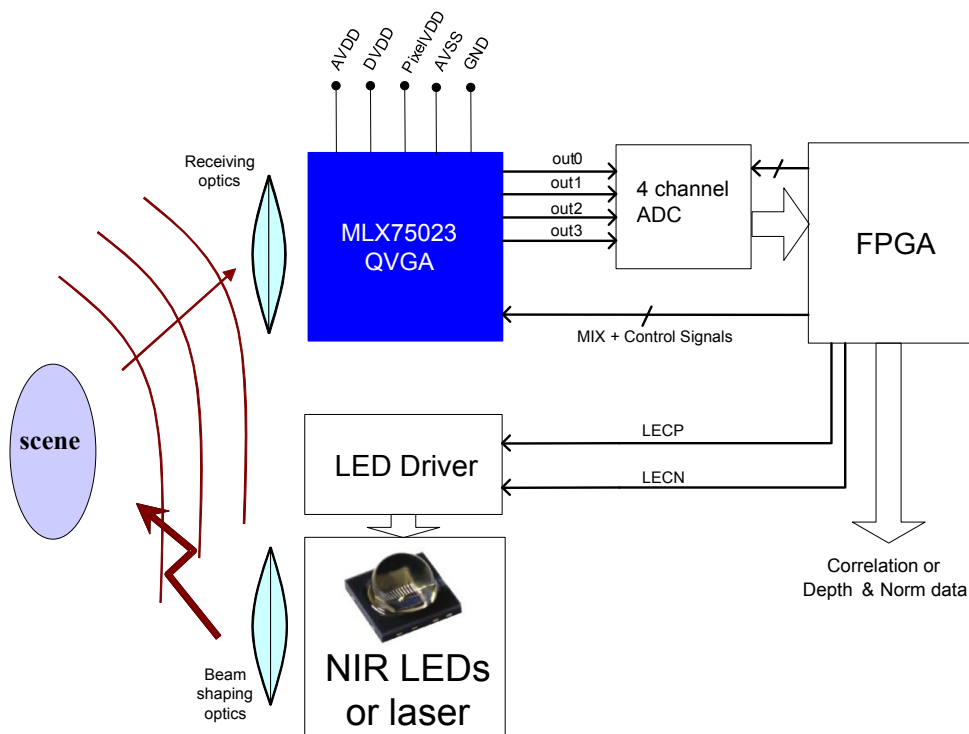
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