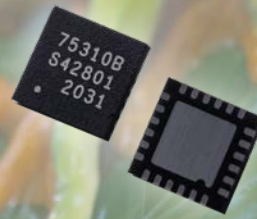


MLX75310

## RAIN-LIGHT SENSOR INTERFACE IC



The green tree frog represents our Rain-Light Sensors because they let us know when rain is on the horizon.

## RAIN-LIGHT SENSOR INTERFACE IC INCLUDING AN INTEGRATED LED DRIVER

### MLX75310

The MLX75310 is a Gen 2 rain-light sensor interface chip including an integrated LED driver offering higher system integration and cost optimization.

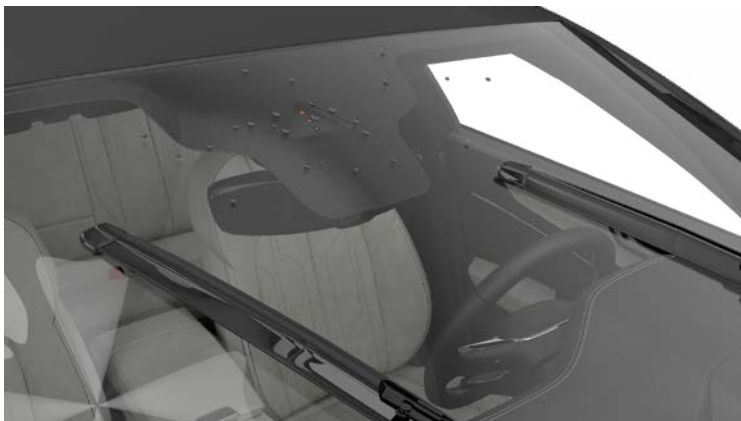
The IC provides various auxiliary circuit functions to support the main mission of the rain-light sensor, for example, a watchdog function, bias and reference sources, and clock generators to control and drive the various on-chip functions. In addition, an SPI interface is included to support data exchange between the IC and a microcontroller.

The IC consists of two optical sensor parts.

Part one is optimized for optical rain detection and is designed to transmit and receive modulated light signals used for optical rain detection. The rain detection feature is available in two independent operating measurements input-channels A and B. Part two consists of three logarithmic current sensors C, D, and E, which can measure the photocurrent of externally connected photodiodes. Simple operation is ensured by internal control logic, configurable user registers, and SPI communication.

Once added next to your microcontroller, the MLX7310 can be controlled via SPI commands.

### APPLICATIONS



- ✓ Optical rain-detection systems
- ✓ Optical liquid level metering
- ✓ Ambient light sensing
  - global irradiation
  - forefield sensor
  - head-up display

## KEY FEATURES

- ✓ Integrated LED driver saving not only cost but also space
- ✓ High safety design by several diagnostic and monitoring functions
- ✓ Minimum amount of external components
- ✓ QFN4x4 (24 pins) package
- ✓ Easy digital communication interface via SPI
- ✓ Two independently simultaneously operating rain measurement channels
- ✓ Integrated DC light cancellation circuitry for rain channel DC light suppression
- ✓ Integrated compensation for DC light induced photodiode gain modulation
- ✓ Up to three logarithmic ambient light channels with two different sensitivities
- ✓ Integrated battery voltage monitor
- ✓ Integrated LED temperature sensing circuitry
- ✓ High input capacitance tolerant input current terminals
- ✓ Extremely high degree of adaptability for different optical systems (transparency...)
- ✓ Stand-by and sleep modes for low power consumption
- ✓ Integrated 16 Bit ADC for high resolution A2D conversion
- ✓ Integrated Temperature Sensor
- ✓ Integrated watchdog timer

