

# ABRIDGED DATA SHEET

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## MAX25613

## Automotive Infrared LED Controller

### General Description

The MAX25613 is a single-channel, high-current IR LED driver for automotive Driver Monitoring Systems (DMS). It can take an input voltage from 5V to 48V and can drive a string of LEDs with a maximum output voltage of 55V. The MAX25613 operates using a Maxim proprietary architecture to achieve high LED drive capability while minimizing the peak current on the battery harness.

The MAX25613 senses output current at the high side of the LED string. High-side current sensing is required to protect against shorts from the output to the ground or battery input. The PWM input provides LED dimming ratios of up to 5000:1, and the ICTRL input provides additional analog dimming capability in the device. The MAX25613 also includes a fault flag that indicates LED short to battery, LED short to ground, LED open, and thermal shut-down. The MAX25613 has built-in spread-spectrum modulation for improved electromagnetic compatibility performance. The MAX25613 is available in a space-saving (4mm x 4mm) 20-pin side-wettable TQFN or a 20 pin TSSOP package, and is specified to operate over the -40°C to +125°C automotive temperature range.

### Applications

- Driver Monitoring Systems
- IR LED Drivers

### Benefits and Features

- High-Current IR LED Driver with Reduced Peak Current on the Battery Harness
  - Maxim Proprietary Control Architecture
- Protection Features Increase System Reliability
  - LED Short-to-Battery, Short-to-Ground Protection
  - LED String Open Protection
  - Thermal Protection
  - Fault Diagnosis through Fault Flag
- Automotive Ready
  - -40°C to +125°C Operating Temperature Range
  - AEC-Q100 Qualified

*Ordering Information appears at end of datasheet.*

### Simplified Typical Operating Circuit

