

4x24 Automotive LED Matrix Driver with UART Interface

MAX25630

General Description

The MAX25630 is a 4x24-channel modular matrix driver. The integrated current outputs can sink up to 72mA LED current each. The source drive pins provide current to the columns of the matrix on a multiplexed basis. Device power comes from an external 3.3V or 5V supply, while the LED current-sink outputs can operate at up to 14V.

A feedback output pin (FB) is provided to control an external DC-DC converter so that voltage headroom can be optimized and the overall system power dissipation reduced.

The device is highly flexible due to its programmability using the UART interface. The interface allows the control of up to 16 devices in a star configuration. Among the programmable parameters are the LED current, individual PWM settings, and multiplex ratio.

The MAX25630 is available in TQFN and TSSOP packages and operates in the -40°C to +125°C temperature range.

Applications

- Welcome/Goodbye Lighting
- Exterior Rear Lighting
- Interior Lighting

Benefits and Features

- Flexible Configuration
 - Programmable Multiplex Ratio Between 4:1 and 1:1
 - Integrated Column Drivers
 - Programmable Dither for Enhanced Resolution
 - Optional Individual Programmable Delays
 - Optional Pseudorandom Spread-Spectrum on Each Output
- 24 Row Drivers
 - Up to 72mA Peak Output Current
 - Very Narrow Minimum Current Pulse for Maximum Dimming Ratio
 - Optional Ghosting Elimination
- ASIL B Compliant
 - Shorted or Open LEDs
 - Programmable V_{LED} Overvoltage Detection
 - SNK_ to SNK_ Shorts
 - Shorted SNK_ or SRC_ to GND
 - ISET Out of Range
 - Internal Clock Out-of-Range Detection
 - Bandgap Reference Out of Range
 - CRC on Internal Memory Contents
 - Thermal Warning/Shutdown
- FB Output to Control External DC-DC Converter
- UART Interface
- V_{SYNC} Synchronization Input
- 48-Lead TQFN and TSSOP Packages
- AEC-Q100 Grade 1

[Ordering Information](#) appears at end of data sheet.

Simplified Application Diagram



