

IS32LT3365 LED Matrix Manager for Adaptive Beam Headlamps

Twelve integrated bypass switches with EMI reduction and ISO26262 ASIL-B compliance

Milpitas, California – November 12, 2024 - Lumissil Microsystems introduces the IS32LT3365 LED Matrix Manager, an integrated circuit (IC) designed for Adaptive Driving Beam (ADB) headlamp systems. It is a scalable solution for controlling many high brightness LEDs to create innovative LED headlamps that dynamically adjust beam patterns and intensity for improved road illumination and safety.

The IS32LT3365 features twelve floating NFET switches that allow for precise management of LED arrays in automotive lighting systems. These switches function as bypass shunts, enabling individual or grouped LEDs to be on, off, or dimmed as needed. The device supports a high-speed 30kHz PWM with 10-bit resolution, offering 1,024 unique brightness levels per LED, facilitating the creation of precise beam patterns. Additionally, the IS32LT3365 employs a fast CAN lite or UART interface with Cyclic Redundancy Check (CRC) to connect with the vehicle's Advanced Driver Assistance Systems (ADAS). This connectivity ensures efficient synchronization and control of extensive LED arrays, allowing for coordinated management of potentially hundreds of LEDs.

Electromagnetic interference (EMI) is a significant challenge in the design of matrix ADB headlamps, primarily due to the high-frequency PWM used for controlling numerous LEDs. The IS32LT3365 effectively tackles this issue by incorporating spread spectrum and slew rate control features on the PWM base clock to significantly reduce EMI. Furthermore, its compliance with ISO 26262 ASIL-B safety standards, along with the integration of advanced performance features, leads to more compact, efficient, and reliable ADB headlamp designs.

"We are pleased to introduce the IS32LT3365 marking a significant advancement in automotive lighting technology," said Ven Shan, VP of Marketing. "This IC enables lighting engineers to design ADB headlamps with light patterns that adapt to real-time road conditions, greatly improving nighttime driving safety. Furthermore, we provide the IS32PM3510 voltage converter and the IS32LT3961 LED driver, which function as the power stage for driving matrix LEDs. Lumissil is your comprehensive solution for ADAS-enabled ADB modules."

The IS32LT3365 is AEC-Q100 qualified for automotive applications and operates from -40°C to +150°C. It is packaged in an eLQFP-48 format, providing a compact footprint for space-constrained designs.

About Lumissil Microsystems

Lumissil Microsystems specializing in analog/mixed-signal products for automotive, communications, industrial, and consumer markets. Lumissil's primary products are LED drivers for low to mid-power RGB color mixing and high-power lighting applications. Other products include audio, sensors, high-speed wire communications, optical networking, and application specific microcontrollers. Lumissil Microsystems has worldwide offices in the US, Taiwan, Japan, Singapore, mainland China, Europe, Hong Kong, India, and Korea. Website: <https://www.lumissil.com>

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IS32LT3365
LED Matrix Manager

- ▲ Twelve integrated floating FET shunt switches bypass 1.5A
- ▲ 10-bit PWM @ 30kHz for precise 1,024 dimming levels
- ▲ Spread spectrum and slew rate control to reduce EMI
- ▲ ISO 26262 ASIL-B compliant
- ▲ CRC on CAN or UART bus interface to ADAS

