

1.5A Synchronous Buck LED Driver IC for reduced EMI in Automotive Lighting *IS32LT3965's FCCM Switcher comes in tiny low-profile flip-chip package*

MILPITAS, Calif., April 10, 2023 -- Lumissil Microsystems, a division of Integrated Silicon Solution, Inc. (ISSI), announces the release of its latest high-performance synchronous Buck LED driver IC. The IS32LT3965 is designed for automotive applications requiring stable LED brightness over a wide operating voltage and temperature range. It is a 1.5A synchronous switching LED driver with advanced features such as integrated high and low-side FET switches, high side current sensing, ultra-low 1 μ A shutdown current, quick output response, spread spectrum for low EMI, guaranteed -40°C to 150°C operation and housed in a low-profile flip-chip package. These features make it ideal for automotive lighting applications such as dual brightness daytime running lights (DRL), fog lights, welcome lighting, logo lamps and motorcycle headlights.

By implementing synchronous rectification, the IS32LT3965 eliminates the need for an external diode and improves the system's operating efficiency. Replacing the external diode with an integrated FET switch increases a system's efficiency by minimizing the output loss. The IS32LT3965 also implements Forced Continuous Conduction Mode (FCCM) to ensure it operates with a fixed frequency under light or full load conditions. Operating at a fixed FCCM frequency of up to 2.2MHz along with spread spectrum significantly reduces EMI energy peaks. This allows for smaller and lower cost filter circuits, making it easier to pass Class-5 EMI tests.

The IS32LT3965 is available in an ultra-miniature 3x4mm WFCQFN package with wettable flanks that has many benefits, including better EMI performance with reduced switch node ringing. The flip chip construction results in extremely low parasitic resistance and inductance that minimize switch node ringing that further reduces EMI. The 14 pin WFCQFN package is designed to provide a direct thermal path from the silicon die to the printed circuit board. The IS32LT3965 has an integrated die temperature monitor and a thermal roll off function to protect it from any possible effects of high-power dissipation.

"The IS32LT3965 is our latest AEC-Q100 compliant LED driver delivering performance features to the automotive market." Said Ven Shan, Vice President of Marketing. "This driver demonstrates our commitment for integrating advanced technology addressing lighting requirements at lower implementation costs. The IS32LT3965 comes in an innovative low-profile flip chip package yet it is packed with the latest features such as FCCM and synchronous switching that increase performance while simplifying LED lamp designs."

The IS32LT3965 1.5A synchronous Buck converter supports a fast transient response over a wide output voltage range without the need for external compensation. A cycle-by-cycle current limit on the high-side FET switch protects the device during over current situations. High-side current sensing makes it possible to drive a remote LED board with only a single wire since the LED cathode is referenced to ground making it possible to use the chassis ground and eliminate the return wire.

The IS32LT3965's flip chip package without an external diode and FCCM with spread spectrum help simplify EMI design, reduce PCB area and minimize BOM, making the IS32LT3965 an ideal choice for demanding lamp designs where space is at a premium.

Availability and pricing

The IS32LT3965 is available now in production quantities, with AEC-Q100 qualification and supporting PPAP documentation. The device comes in a WFCQFN-14 package and is priced at \$0.94 each in 1k pcs quantities.

About Lumissil Microsystems

Lumissil Microsystems is a division of ISSI 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 wired communications, optical networking and application-specific microcontrollers. ISSI and Lumissil Microsystems have worldwide offices in the US, Taiwan, Japan, and Singapore, mainland China, Europe, Hong Kong, India, and Korea. Website: <http://www.lumissil.com>

About Integrated Silicon Solution, Inc. (ISSI)

(ISSI) ISSI is a fabless semiconductor company that designs, develops and markets high performance SRAM, DRAM, Flash memory (including NOR flash, NAND flash and managed NAND solutions (eMMC)), and Analog/Mixed-signal integrated circuits. ISSI provides high-quality semiconductor products and has been a committed long-term supplier to its customers. ISSI has worldwide offices in the US, Taiwan, Japan, Singapore, mainland China, Europe, Hong Kong, India, and Korea. Visit our website at <http://www.issi.com/>

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LUMISSIL Microsystems
A Division of ISSI

**IS32LT3965 High Efficiency, 1.5A,
2.2MHz Synchronous Buck LED Driver**

Flip-Chip Package with Built-In Spread
Spectrum Reduces Conducted Emissions