Automotive-Compliant Switching LED Driver for Exterior Head Lamps and DRL Lamps

55V Configurable Buck, Boost or Buck-Boost LED Driver with Dual Brightness Control

MILPITAS, Calif., October 11, 2021 -- Lumissil Microsystems, a division of Integrated Silicon Solution, Inc. (ISSI), announced today an LED driver to further expand its portfolio of automotive exterior lighting solutions. The IS32LT3959 is a single inductor, multi-topology controller with constant on-time for driving a ground referenced high-voltage LED string. This single channel switching LED driver integrates a PWM engine with external control to achieve dual brightness capability for Rear Combination Lamp (RCL), Daytime Running Lamp (DRL) and headlights.

The IS32LT3959 switching LED driver supports advanced features such as ultra-low 1.5µA shutdown current to conserve battery power, 3% output current accuracy for optimal LED brightness control, programmable Pulse-Width Modulation (PWM) engine for standalone LED dimming capability and spread spectrum to minimize the device EMI profile. Other key features are programmable single LED short detection, both analog and digital dimming, LED current monitoring pins, device and LED temperature monitoring, single inductor requirement for all switching topologies and comes in a thermally enhanced eTSSOP-28 package. It operates from a wide 4.5 to 55V supply voltage and is guaranteed to meet specifications over the -40°C ~ +150°C operating temperature range.

“The IS32LT3959 is our latest automotive-compliant, AEC-Q100 LED driver designed to meet the demands of next generation exterior vehicle lighting designs.” Said Ven Shan, Vice President of Marketing. “This driver incorporates the latest features in a compact 28-pin package to provide power and space savings; while at the same time lowering the overall system costs due to its many integrated functions.”

The integrated PWM engine can be configured to operate up to 2kHz with a 5 to 95% duty cycle. A single pin will enable or disable the PWM engine so that when enabled the LED current level is subject to the PWM duty cycle and when disabled the maximum current is output to the LED string. This support for two LED current levels enables cost effective lighting systems since the same LEDs can be used for both tail and brake lamps. This dual brightness capability can also be used with DRL for higher brightness during the daytime and a lower brightness level at nighttime.

Availability and pricing

The IS32LT3959 is available now in production quantities, with AEC-Q100 qualification and supporting PPAP documentation. The device comes in a thermally enhanced 28-pin TSSOP package is priced at $0.95 each in 10k pcs quantities.

About Lumissil Microsystems

Lumissil Microsystems is the analog/mixed-signal product division of ISSI, a fabless semiconductor company that designs and markets high performance integrated circuits for the following key markets: (i) automotive, (ii) communications, (iii) industrial/medical, and (iv) digital consumer. Lumissil Microsystems’ primary products include LED drivers for low to mid-power RGB color mixing and high power lighting applications, audio, sensor, high-speed wired communications, optical networking ICs and application-specific microcontrollers. ISSI/Lumissil is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our website at https://www.lumissil.com

About Integrated Silicon Solution, Inc. (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 is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our website at http://www.issi.com/

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