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Quad Channel High Current Linear LED Controller for Automotive Exterior Lighting Applications

Drive 1A LEDs for Tail /Stop Rear Combination Lamps and Daytime Running Lamps with integrated PWM

MILPITAS, CA: September 8, 2020 – Lumissil Microsystems, a division of ISSI, today announced the release of a 4-channel linear current controller for automotive RCL (Rear Combination Lamp), DRL (Daytime Running Lamp) and “Welcome” LED lighting applications. The IS32LT3123 is an AEC-Q100 controller which integrates a programmable PWM dimming engine to achieve two brightness levels for the “Tail” (PWM dimming) and “Stop” (full brightness) intensities in RCL applications or day/night intensities for DRL applications. It controls four external MOSFETs for extended reliability at high currents with optimum thermal dissipation of each LED channel.

The controller provides engineers with flexibility in the design of dual intensity lights tuned to the lamp’s optical and thermal constraints. The integrated PWM engine’s duty cycle and operating frequency can be programmed with external resistors while a single-pin selects between full brightness and PWM dimming levels. Selecting and sizing the external MOSFETs along with their associated sense resistors add current-level tuning flexibility for each of the four channels while spreading out the resulting thermal heat.

“Automotive lighting engineers using the IS32LT3123 will find that it fully addresses their design concerns with high current, thermal dissipation, dimming control, and system EMI” said Ven Shan, VP of Marketing at Lumissil Microsystems. “The advanced features of the IS32LT3123 controller will provide designers with the ease and flexibility to quickly realize their automotive lighting applications over a wide power level.”

Multiple IS32LT3123 controllers can be linked together, all sharing a common PWM timing reference generated from a single controller or from an external source. Furthermore, the controller’s four PWM outputs have adjustable slew rate control for optimized EMI performance. For robust system reliability, the IS32LT3123 integrates fault detection and reporting circuit for LED open and short circuit, input over voltage and over temperature conditions.

The IS32LT3123 addresses thermal issues by providing a control interface for external MOSFETs which sustain the bulk of the thermal dissipation. For added thermal reliability, the controller also enables thermal management of the LED strings themselves. An external NTC thermistor placed close to the LEDs and monitored by the IS32LT3123 will provide an adjustable current roll off to protect the LEDs should they reach a predefined thermal stress level.

Availability, Packaging and Pricing

The IS32LT3123-ZLA3-TR is an AEC-Q100 qualified controller, comes in an eTSSOP-24 package and operates from a 5.0V to 40V voltage supply. The IS32LT3123 is sampling and is available for production with pricing beginning at \$0.75 for quantities of 10K pcs.



About Lumissil

Lumissil 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's primary products are LED drivers for low to mid-power RGB color mixing and high power lighting applications. Other products include 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 web site at <http://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 web site at <http://www.issi.com/>

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