75V Buck-Boost LED Driver Exceeds Automotive Market Requirements for High Power LED Lighting

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AMS, Analog Mixed-Signal division of ISSI, announces the IS32LT3957 to complement their recent introduction of the IS32LT395x family of switching Buck LED drivers for automotive and industrial applications. The IS32LT3957 addresses the market need for an LED driver that operates across the wide battery voltages present in a typical automotive environment; it provides a constant LED current even when the battery voltage is above, below or equal to the output LED voltage. The buck-boost switching capability makes the IS32LT3957 ideal for motorcycle (6V), automotive (12V) and truck (24V) Headlight, Front and Rear Fog lights, Daytime Running lights and other LED lighting applications.

The IS32LT3957 is a high-frequency configurable switching controller that outputs a constant LED current independent of the battery voltage in the range of 5V to 75V. When the battery voltage is lower than the LED string voltage it is configured for boost mode operation, when the battery voltage is higher than the LED string voltage it is configured for buck mode operation or when the battery state of charge voltage varies above and below the output LED string voltage it is configured for buck-boost mode operation. In either operating mode, the LED string brightness is modulated by applying a digital PWM or a DC voltage level signal.

All switching converters such as the IS32LT3957 operate on a fast cycle-by-cycle basis to transfer and convert power from the input to the output. This conversion will create large components of EMI noise at the frequency of operation as well as its harmonics that may interfere with radios and fail EMI compliance for the automotive electronic market. The IS32LT3957 incorporates programmable spread spectrum technology that dithers and spreads this switching noise over a range of frequencies, thus significantly reducing the radiated peak emission and improving EMI performance.

“LEDs Headlights are fast replacing halogen bulbs in auto’s and motorcycles. They consume much less power, turn instantly on and are environmentally friendly, key driving factors for rapid growth in the market”, said Ven Shan, VP of AMS Products at ISSI. “The IS32LT3957 has all the optimized features and functions to enable up to a 50W buck boost drive required to provide a very stable, rugged and reliable drive scheme for this safety critical function”. Extensive protection features of the IS32LT3957 include cycle-by-cycle peak current limit, hiccup mode short-circuit protection, output short protection, under voltage lockout, and thermal shutdown. Once a fault is detected, a fault output signal is generated to report the fault condition to the system monitor.

Pricing and availability
The IS32LT3957 is AEC-Q100 automotive qualified and is available in an eTSSOP-16 package with exposed pad for enhanced thermal dissipation.

For more information on AMS LED products, visit the AMS Analog products website at ams.issi.com/US/product-analog-hbled-driver.shtml

About AMS
AMS is the analog mixed signal 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. AMS’ primary products are LED drivers for low to mid-power RGB color mixing and high power lighting applications. Other products include audio, sensor and micro controller MCU semiconductor ICs. ISSI/AMS 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://ams.issi.com/

CONTACT:
Integrated Silicon Solution, Inc.
Ven Shan 408.969.4622
vshan@issi.com

Aaron Reynoso 408.969.5141
areynoso@issi.com