

## Family of Constant-Current Dimmable Buck LED Drivers

### 1.5A, 3A Buck LED Drivers Target ISO26262 automotive and industrial applications

AMS, the Analog Mixed-Signal division of ISSI, has introduced a family of switching buck LED Drivers for automotive and industrial applications. This family of highly integrated switching constant current buck LED Drivers are targeted for 12V/24V battery connected, space-constrained, electromagnetic (EMC) sensitive applications such as Headlight, Front and Rear Fog lights, Day time Running lights to name a few.

The device family supports a wide DC voltage input range of 4.5V to 38V and outputs a 5% regulated current of 1.5A or 3A; depending on the particular device, see table. The integrated power MOSFET is configured to switch in the constant on-time mode delivering true average current. Switching at a frequency of up to 2MHz which is adjustable with an external resistor, these buck LED Drivers can use smaller output inductor and capacitor values thereby reducing total size and cost. The frequency adjust capability allows the designer flexibility in selecting the optimum switching frequency to avoid disrupting the AM broadcast or sensitive vehicle RF components.

The family of switching regulators also features a spread spectrum function to modulate the internal oscillator about the configured operating frequency. This modulation or dithering of the frequency will optimize EMI (Electromagnetic Interference) to spread the total electromagnetic emitting energy into a wider range that significantly degrades the peak energy of EMI. With spread spectrum, EMI tests can be passed with a smaller size and lower cost filter circuit.

The devices come in a small space-saving and thermally enhanced SOP-8-EP package. An external control pin accepts a PWM signal to enable the dimming of high brightness LEDs. Comprehensive protection against possible fault conditions caused by short or open circuits is also included, along with over-temperature protection. “Our feature rich family of buck LED drivers are optimized for ease of system design and improved system reliability in critical automotive lighting applications such as Headlights, DRL’s, and Front and Rear Fog Lamps,” remarked Venkatesh Shan, VP of Analog Products at ISSI. “Our family of high power LED drivers provide the notification of a fault condition so as to adhere to the ISO26262 standard for functional safety in road vehicles.”

4.5~38V Buck LED Regulator PWM Dimmable				
Part Number	AEC-Q100	LED Current	Fault Report	Spread Spectrum
IS32LT3951	Y	1.5A	Y	Y
IS32LT3952	Y	1.5A	N	Y
IS32LT3953	Y	3A	N	Y
IS32LT3954	Y	3A	Y	Y
IS31LT3952	N	1.5A	N	Y
IS31LT3953	N	3A	N	Y
IS31LT3954	N	3A	Y	Y
IS31LT3954A	N	3A	Y (shared)	Y

Table 1 Family of Constant-Current PWM Dimmable Buck Regulator LED Drivers

The IS32LT3951, IS32LT3952, IS32LT3953 and IS32LT3954 are all AEC-Q100 qualified and Production Part Approval Process (PPAP) capable. The IS31LT3952, IS31LT3953, IS31LT3954, IS31LT3954A are lower cost versions for non-automotive industrial applications with pricing starting at \$0.33 for quantities of 100K for the IS31LT3952. For pricing on the rest of the family contact ISSI Sales.

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

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## Family of Automotive & Industrial LED Drivers with Spread Spectrum Technology

4.5~38V Buck LED Regulator PWM Dimmable				
Part Number	AEC-Q100	LED Current	Fault Report	Spread Spectrum
IS32LT3951	Y	1.5A	Y	Y
IS32LT3952	Y	1.5A	N	Y
IS32LT3953	Y	3A	N	Y
IS32LT3954	Y	3A	Y	Y
IS31LT3952	N	1.5A	N	Y
IS31LT3953	N	3A	N	Y
IS31LT3954	N	3A	Y	Y
IS31LT3954A	N	3A	Y (shared)	Y

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