

LED5000

High-performance DC-DC LED driver



3 A, 48 V step-down, constant-current switching with high dimming capability, supporting multiple topologies

The LED5000 is a monolithic buck switching regulator specifically designed to drive long LED strings, since it can operate with an input voltage range from 5.5 to 48 V, providing an output current up to 3 A, with a very low feedback voltage (200 mV). It embeds high-performance PWM circuitry for LED brightness. The possibility to implement other topologies such as buck-boost (positive or negative) or floating boost gives the highest design flexibility.

KEY FEATURES

- High switching frequency (850 kHz)
- PWM dimming for brightness control
- Other topologies supported (buck boost, floating boost)
- Very low feedback voltage (200 mV)

KEY BENEFITS

- Very low-pass output filter
- Wide brightness control
- High design flexibility

MAIN APPLICATIONS

- Automotive LED lighting
 - High beam
 - Low beam
 - DTRL
 - Interior lighting
- Street lighting
- Architectural lighting
- Halogen bulb replacement



DEVICE SUMMARY

Part number	Package	Input voltage range (V)	Max output current (A)	Feedback voltage accuracy (%)	Feedback voltage (V)	Dimming control	Other features	Operating junction temperature (T _J °C)	Switching frequency (kHz)
LED5000	HSOP 8	5.5 to 48	3	±3	0.2	PWM	Alternative topology supported	-40, 150	850

DESIGN SUPPORT

4 types of demo-board are available, with related technical documents, one for each topology, in order to provide the best-in-class support for your design.



EVALED5000



EVALE5000B-B



EVALE5000FB



EVALE5000NB-B

EVALUATION BOARDS

Part number	Topology	I _{LED} (A)	LEDs	V _{in} range (V)	V _{out} max (V)
EVALED5000 ²	Buck	0.7	Up to 11	5.5 to 48	0.9 V _{in}
EVALED5000B-B ²	Buck boost	0.7	Up to 11	5.5 to 48	Depending on I _{LED} ¹
EVALED5000FB ²	Floating boost	0.7	Up to 11	5.5 to (48 - V _{SENSE})	48
EVALED5000NB-B ²	Inverting buck boost	0.7	Up to 11	V _{in} - V _{out} = 5.5 to 48	V _{in} - 48

Note: 1. The max V_{out} is related to the max I_{sw} = 3 A

2. Board in development, available on ST.com starting from end of Q3 2013

For further information on LED5000, please visit www.st.com/led5000



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