

NCL30388

Power Factor Corrected Quasi-Resonant Primary Side Current-Mode Controller for LED Lighting with thermal foldback

Product Overview

For complete documentation, see the data sheet.

The NCL30388 is a power factor corrected flyback controller targeting isolated constant current LED drivers. The controller operates in a quasi-resonant mode to provide high efficiency. Thanks to a novel control method, the device is able to tightly regulate a constant LED current from the primary side. This removes the need for secondary side feedback circuitry, its biasing and for an optocoupler. The device is highly integrated with a minimum number of external components. A robust suite of safety protection is built in to simplify the design.

Features

- Integrated HV start up current source
- Digital PSR CC loop control
- Digital PSR CV loop control
- Digital PFC loop algorithm
- Valley Lock out and Frequency Foldback
- Secondary Diode and Output Short Protection
- Open and Shorted LED Protection
- VCC Undervoltage and overvoltage protection

Applications

- Integral LED Bulbs
- Integrated LED Drive Electronics
- LED Light Engines
- LED Driver Power Supplies

Benefits

- Fast startup, Low standby power & Wide output operation range
- Constant Brightness Regulation - $< \pm 2\%$
- Good start up performance at cold temperature condition
- Over 0.9 PF at half load 230 Vac and Under 10% THD at half load universal input
- High efficiency at wide input and output range
- Avoids overheating in fault condition
- Robust fault handling of common LED system faults
- Robust fault handling

End Products

- LED Bulbs
- LED Power Supply Drivers
- LED Light Engines
- LED Tubes
- Electronic Control Gear for LED Systems

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Topology	V _i Min (V)	V _i Max (V)	V _o Max (V)	I _o Max (mA)	f _{sw} Typ (kHz)	Package Type
NCL30388A1DR 2G	0.3855		Active	Step-Up/Step-Down/SEPIC	9.77	25	14	+300/-500	Variable	SOIC-7
NCL30388B1DR 2G	0.3861		Active	Step-Up/Step-Down/SEPIC	9.77	25	14	+300/-500	variable	SOIC-7