

## Product Overview

### NCL30388: Power Factor Corrected Quasi-Resonant Primary Side Current-Mode Controller for LED Lighting with thermal foldback

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	Compliance	Status	Topology	V <sub>I</sub> Min (V)	V <sub>I</sub> Max (V)	V <sub>O</sub> Max (V)	I <sub>O</sub> Max (mA)	f <sub>SW</sub> Typ (kHz)	Package Type
NCL30388A1DR2G	Pb-free Halide free	Active	Step-Up/Step-Down/SEPIC	9.4	25	200	3000	Up to 150	SOIC-7
NCL30388B1DR2G	Pb-free Halide free	Active	Step-Up/Step-Down/SEPIC	9.4	25	200	3000	Up to 150	SOIC-7

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