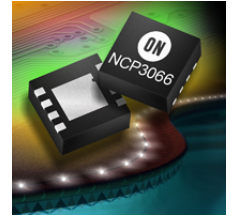


## Product Overview

### NCP3066: Buck / Boost / Inverting Regulator, Switching, Constant Current, 1.5 A, for HB-LEDs with Enable

For complete documentation, see the data sheet.



The NCP3066 is a monolithic Buck Boost Inverting Switching Regulator designed to deliver constant current for powering high brightness LEDs. The device has a very low feedback voltage of 235 mV (nominal) which is used to regulate the average current of the LED string. In addition, the NCP3066 has a wide input voltage up to 40 V to allow it to operate from 12 Vac or 12 Vdc supply, commonly used for lighting applications as well as unregulated supplies such as rechargeable batteries. The NCP3066 switching regulator can be configured in Step-Down (Buck) and Step-Up (Boost) and Voltage-Inverting topologies with a minimum number of external components. An NCV3066 automotive version is available and without the ON/OFF feature as the NCP3065.

### Features

- Integrated 1.5 A Switch
  - Input Voltage Range from 3 V to 40 V
  - Low Feedback Voltage of 235 mV
  - Cycle-by-Cycle Current Limit
  - No Control Loop Compensation Required
  - Frequency of Operation Adjustable up to 250 kHz
  - Operation With All Ceramic Output Capacitors or No Output Capacitance
  - Internal Thermal Shutdown with Hysteresis
  - ON/OFF pin for direct PWM dimming
  - ON/OFF pin disabling the regulator
- For more features, see the data sheet

### Benefits

- Integrated switch provides for small footprint
- Flexibility to operate from 12Vac or 12Vdc supplies commonly used for lighting applications
- Allows the use of small / low cost sense resistor
- Enhanced protection features
- Easy design-in
- Optimization of efficiency and size
- Reduce size and cost by eliminating output capacitor
- Enhanced protection features
- Provides dimming up to 1kHz frequency
- Low power standby (<100µA)

### Applications

- Constant Current Source
- High Power LED Driver
- High Brightness LED (HBLED)

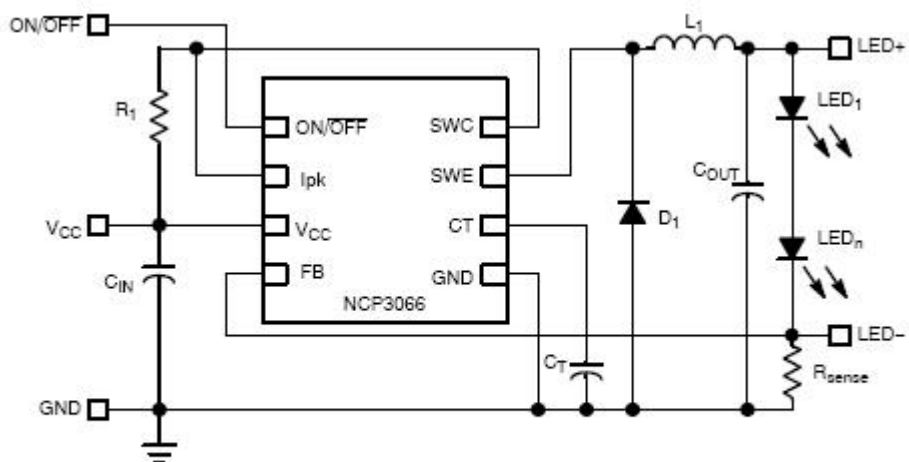
### End Products

- MR-16 Replacement
- Automotive LED Headlight

## Part Electrical Specifications

Product	Compliance	Status	Topology	Control Mode	V <sub>oc</sub> Min (V)	V <sub>oc</sub> Max (V)	V <sub>o</sub> Typ (V)	I <sub>o</sub> Typ (A)	Efficiency (%)	f <sub>sw</sub> Typ (kHz)	Package Type
NCP3066DR2G	Pb-free	Active	Step-Up	Hysteretic	3	40	1.25 to 40	1.5	85	250	SOIC-8
	Halide free		Step-Down								
			Step-Up/Step-Down								
NCP3066MNTXG	Pb-free	Active	Step-Down	Hysteretic	3	40	1.25 to 40	1.5	85	250	DFN-8
	Halide free		Step-Up/Step-Down								
			Step-Up								
NCV3066DR2G	AEC Qualified	Active	Step-Down	Hysteretic	3	40	1.25 to 40	1.5	85	Up to 300	SOIC-8
	PPAP Capable		Step-Up								
	Pb-free		Step-Up/Step-Down								
	Halide free										
NCV3066MNTXG	AEC Qualified	Active	Step-Up	Hysteretic	3	40	1.25 to 40	1.5	85	Up to 300	DFN-8
	PPAP Capable		Step-Up/Step-Down								
	Pb-free		Step-Down								
	Halide free										

## Application Diagram



**Typical Buck Application Circuit**

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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