

NCP1616

Power Factor Controller, High Voltage, Active X2

Product Overview

For complete documentation, see the data sheet.

The NCP1616 is a high voltage PFC controller designed to drive PFC boost stages based on an innovative Current Controlled Frequency foldback (CCFF) method. In this mode, the circuit operates in critical conduction mode(CrM) when the inductor current exceeds a programmable value. When the current is below this preset level, the NCP1616 linearly decays the frequency down to minimum of about 26kHz at the sinusoidal zero-crossing. CCFF maximizes the efficiency at both nominal and light load. In particular, the standby losses are reduced to a minimum. Innovative circuitry allows near-unity power factor even when the switching frequency is reduced. The integrated high voltage start-up circuit eliminates the need for external start-up components and consumes negligible power during normal operation. Housed in a SOIC-9 package, the NCP1616 incorporates the features necessary for robust and compact PFC stages, with few external components.

Features

- High Voltage Start-Up Circuit
- Critical conduction mode with current controlled frequency foldback
- Integrated Input Filter Capacitor (X2) Discharge Circuitry
- Dynamic Response Enhancer
- Soft Overvoltage Protection
- -500 mA/+800 mA Drive Capability
- AC Line Brownout Detection

Benefits

- Improved efficiency at light load and fast startup time
- Optimizes conversion efficiency across load range
- Improved light load efficiency and elimination of external resistors
- Improved transient response for line and load steps
- Reduces acoustic noise and stress in the event of an overvoltage fault
- Supports wide range of MOSFETs and power levels
- Protects boost stage power components during line fault conditions

Applications

- Off-line power supplies
- Lighting Ballast
- LED Lighting Drivers and Power Supplies

End Products

- All-In-One Computers
- High Powered Adapters
- Flat TV / LED-TV / LCD-TV / Plasma

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	PFC Mode	Frequency Operation	Control Mode	Topology	f _{sw} Typ (kHz)	V _{CC} Max (V)	Drive Cap. (mA)	UVLO (V)	Latch	UVP	Inhibition	Package Type
NCP1616A1DR2G	0.5157		Active	CRM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-9 NB
NCP1616A2DR2G	0.5157		Active	CCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-9 NB