

Product Overview

NCP1615: Power Factor Controller, High Voltage, Active X2

For complete documentation, see the data sheet.

The NCP1615 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 classically operates in critical conduction mode (CrM) when the inductor current exceeds a programmable value. When the current is below this preset level, the NCP1615 linearly decays the frequency down to a minimum of about 26 kHz when the input current is zero. CCFF maximizes the efficiency at both nominal and light load. In particular, the standby losses are reduced to a minimum. An innovative circuitry allows near-unity power factor even when the switching frequency is reduced.

This product is IEC60950 compliant. Please see the test report and certification in the Conformance report section below.

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
- Two Vcc startup versions: 10.5 V (A & B) and 17 V (C & D)
- AC Line Brownout Detection
- PFC Okay Output

Applications

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

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
- C & D versions allows smaller Vcc capacitor and faster startup in self biased applications
- Protects boost stage power components during line fault conditions
- Can enable downstream controller of stable PFC rail

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
NCP1615A1DR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-14 NB
NCP1615ADR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-14 NB
NCP1615C2DR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-16 NB
NCP1615C3DR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-16 NB
NCP1615C4DR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-16 NB
NCP1615C5DR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-16 NB
NCP1615CDR2G	0.7333	Pb-free Halide free non AEC-Q and PPAP	Active	CRM DCM	Variable	Current Mode	Step-Up	Variable	28	500 / 800	9	Yes	Yes	Yes	SOIC-16 NB

For more information please contact your local sales support at www.onsemi.com.

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