

Product Overview

NCP1200: PWM Controller, Fixed Frequency, Flyback, Current Mode

For complete documentation, see the data sheet.

Housed in SO-8 or DIP-8 package, the NCP1200 represents a major leap toward ultra-compact Switch-Mode Power Supplies. Thanks to a novel concept, the circuit allows the implementation of a complete offline battery charger or a standby SMPS with few external components. Furthermore, an integrated output short-circuit protection lets the designer build an extremely low-cost AC/DC wall adapter associated with a simplified feedback scheme.

With an internal structure operating at a fixed 40 kHz, 60 kHz or 100 kHz, the controller drives low gate-charge switching devices like an IGBT or a MOSFET thus requiring a very small operating power. Thanks to current-mode control, the NCP1200 drastically simplifies the design of reliable and cheap offline converters with excellent audio-susceptibility and inherent pulse-by-pulse control.

When the current setpoint falls below a given value, e.g. the output power demand diminishes, the IC automatically enters the so-called skip cycle mode and provides excellent efficiency at light loads. Because this occurs at low peak current, no acoustic noise takes place.

Finally, the IC is self-supplied from the DC rail, eliminating the need of an auxiliary winding. This feature ensures operation in presence of low output voltage or shorts.

Features

- No Auxiliary Winding Operation
- Internal Output Short-Circuit Protection
- Extremely Low No-Load Standby Power
- Current-Mode with Skip-Cycle Capability
- Internal Leading Edge Blanking
- 250 mA Peak Current Source/Sink Capability
- Internally Fixed Frequency at 40 kHz, 60 kHz and 100 kHz
- Direct Optocoupler Connection
- Built-in Frequency Jittering for Lower EMI
- SPICE Models Available for TRANSient and AC Analysis

For more features, see the data sheet

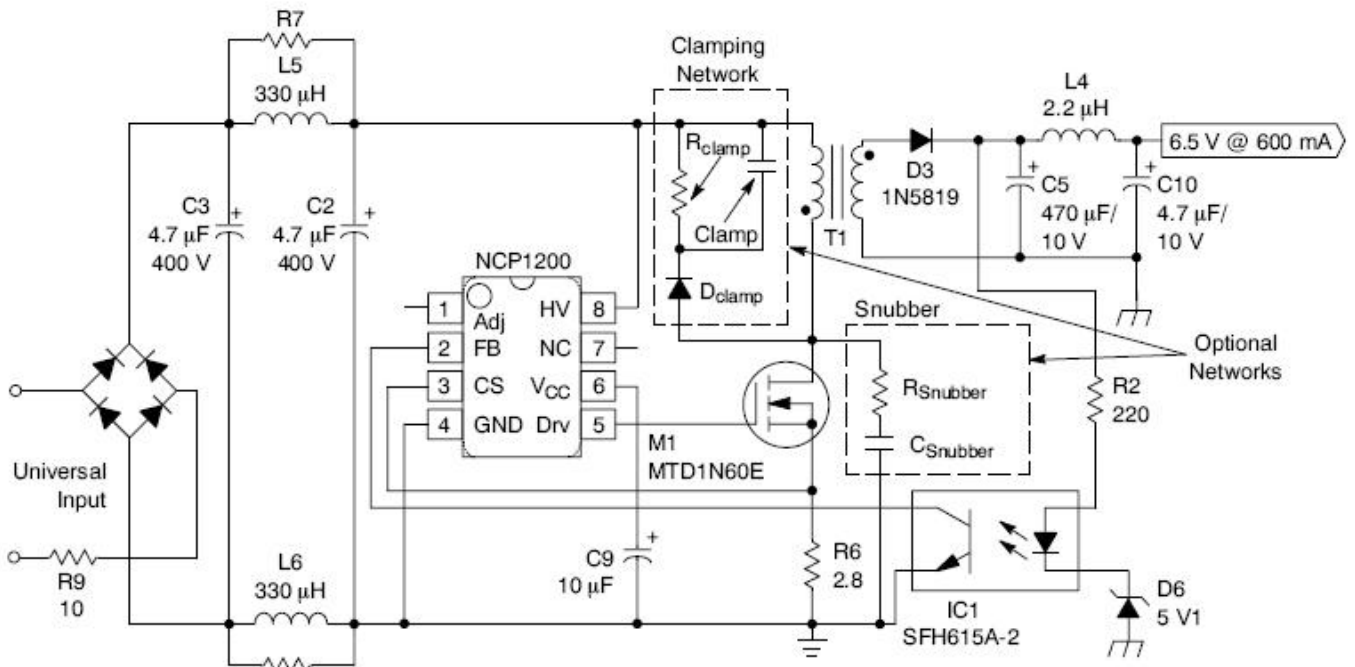
Applications

- AC/DC Adapters
- Offline Battery Chargers
- Auxiliary/Ancillary Power Supplies (USB, Appliances, TVs, etc.)

Part Electrical Specifications

Product	Compliance	Status	Topology	Control Mode	f_{sw} Typ (kHz)	Stand-by Mode	UVLO (V)	Short Circuit Protection	Latch	Soft Start	V_{CC} Max (V)	Drive Cap. (mA)	Package Type
NCP1200D100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	No	Yes	No	No	16	250 / 250	SOIC-8
NCP1200D40R2G	Pb-free Halide free	Active	Flyback	Current Mode	40	Yes	No	Yes	No	No	16	250 / 250	SOIC-8
NCP1200D60R2G	Pb-free Halide free	Active	Flyback	Current Mode	60	Yes	No	Yes	No	No	16	250 / 250	SOIC-8
NCP1200P100G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	No	Yes	No	No	16	250 / 250	PDIP-8
NCP1200P40G	Pb-free Halide free	Active	Flyback	Current Mode	40	Yes	No	Yes	No	No	16	250 / 250	PDIP-8
NCP1200P60G	Pb-free Halide free	Active	Flyback	Current Mode	60	Yes	No	Yes	No	No	16	250 / 250	PDIP-8

Application Diagram



A typical AC-DC wall adapter showing the reduced part count due to the NCP1200

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

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