



## Product Overview

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### NCP1203: Fixed Frequency Flyback Current Mode PWM Controller

For complete documentation, see the data sheet

#### Product Description

Housed in SO-8 or DIP8 package, the NCP1203 represents a major leap toward ultra-compact Switch-Mode Power Supplies and represents an excellent candidate to replace the UC384X devices. Thanks to its proprietary SmartMOS Very High Voltage Technology, the circuit allows the implementation of complete off-line AC/DC adapters, battery charger and a high-power SMPS with few external components.

With an internal structure operating at a fixed 40 kHz, 60 kHz or 100 kHz switching frequency, the controller features a high-voltage start-up FET which ensures a clean and loss-less start up sequence. Its current-mode control naturally provides good audio susceptibility and inherent pulse-by-pulse control.

When the current set point falls below a given value, e.g. the output power demand diminishes, the IC automatically enters the so-called skip cycle mode and provides improved efficiency at light loads while offering excellent performance in standby conditions. Because this occurs at a user adjustable low peak current, no acoustic noise takes place.

The NCP1203 also includes an efficient protective circuitry which, in presence of an output over load condition, disables the output pulses while the device enters a safe burst mode, trying to restart. Once the default has gone, the device auto-recovers. Finally, a temperature shutdown with hysteresis helps building safe and robust power supplies.

#### Features

- High-Voltage Start Up Current Source
- Auto-Recovery Internal Output Short-Circuit Protection
- Extremely Low No-Load Standby Power
- Current-Mode with Adjustable Skip-Cycle Capability
- Internal Leading Edge Blanking
- 250 mA Peak Current Capability
- Internally Fixed Frequency at 40 kHz, 61 kHz and 100 kHz
- Direct Optocoupler Connection
- Undervoltage Lockout at 7.6 V Typical
- SPICE Models Available for TRANSient and AC Analysis

#### Applications

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

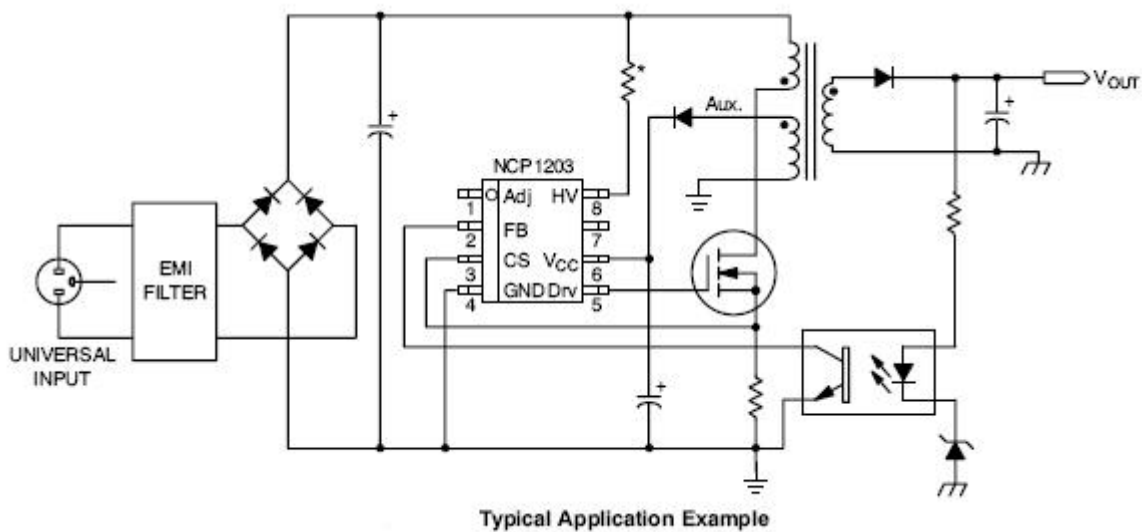
## Part Electrical Specifications

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
NCP1203D100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	Yes	Yes	No	No	16	250	SOIC-8
NCP1203D40R2G	Pb-free Halide free	Active	Flyback	Current Mode	40	Yes	Yes	Yes	No	No	16	250	SOIC-8
NCP1203D60R2G	Pb-free Halide free	Active	Flyback	Current Mode	60	Yes	Yes	Yes	No	No	16	250	SOIC-8
NCP1203P100G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	Yes	Yes	No	No	16	250	PDIP-8
NCP1203P40G	Pb-free Halide free	Active	Flyback	Current Mode	40	Yes	Yes	Yes	No	No	16	250	PDIP-8
NCP1203P60G	Pb-free Halide free	Active	Flyback	Current Mode	60	Yes	Yes	Yes	No	No	16	250	PDIP-8

## Package Availability

Type	Pb-free	Standard
PDIP-8	✓	
SOIC-8	✓	✓

## Application Diagram



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