

## Product Overview

### NCP1251: PWM Controller, Current Mode, for Offline Power Supplies

For complete documentation, see the data sheet.

The NCP1251 is a highly integrated PWM controller capable of delivering a rugged and high performance offline power supply in a tiny TSOP-6 package. With a supply range up to 28 V, the controller hosts a jittered 65 kHz or 100 kHz switching circuitry operated in peak current mode control. When the power on the secondary side starts to decrease, the controller automatically folds back its switching frequency down to a minimum level of 26 kHz. As the power further goes down, the part enters skip cycle while limiting the peak current. Over Power Protection (OPP) is a difficult exercise especially when no-load standby requirements drive the converter specifications. The ON proprietary integrated OPP lets you harness the maximum delivered power without affecting your standby performance simply via two external resistors. A latched Over Voltage Protection (OVP) is combined on the same pin. For ease of implementation, an auto-recovery OVP also monitors the V<sub>cc</sub> line. These features offer an efficient protection in case of optocoupler failure or adverse open loop operation. Finally, a timer-based short-circuit protection offers the best protection scheme, letting you precisely select the protection trip point irrespective of a loose coupling between the auxiliary and the power windings.

#### Features

- Non-dissipative internal and adjustable Over Power Protection (OPP)
- Frequency Foldback down to 26 kHz and Skip-Cycle in light load conditions
- Internal Ramp Compensation
- Frequency jittering from full load to skip-cycle
- Latch input for OVP and OTP implementations
- Over Voltage Protection (OVP) monitoring on the V<sub>cc</sub> pin
- See NCP1250 for no Over Voltage Protection (OVP) on the V<sub>cc</sub> pin

#### Benefits

- Limits maximum delivered power without affecting standby performance
- High efficiency in light load conditions
- Reduces the number of external components
- Improved EMI performance
- Simple implementation of required protection functions
- Protects against output over voltage conditions without any added components

#### Applications

- Offline Adapters
- AC-DC converters
- 45W Adapter

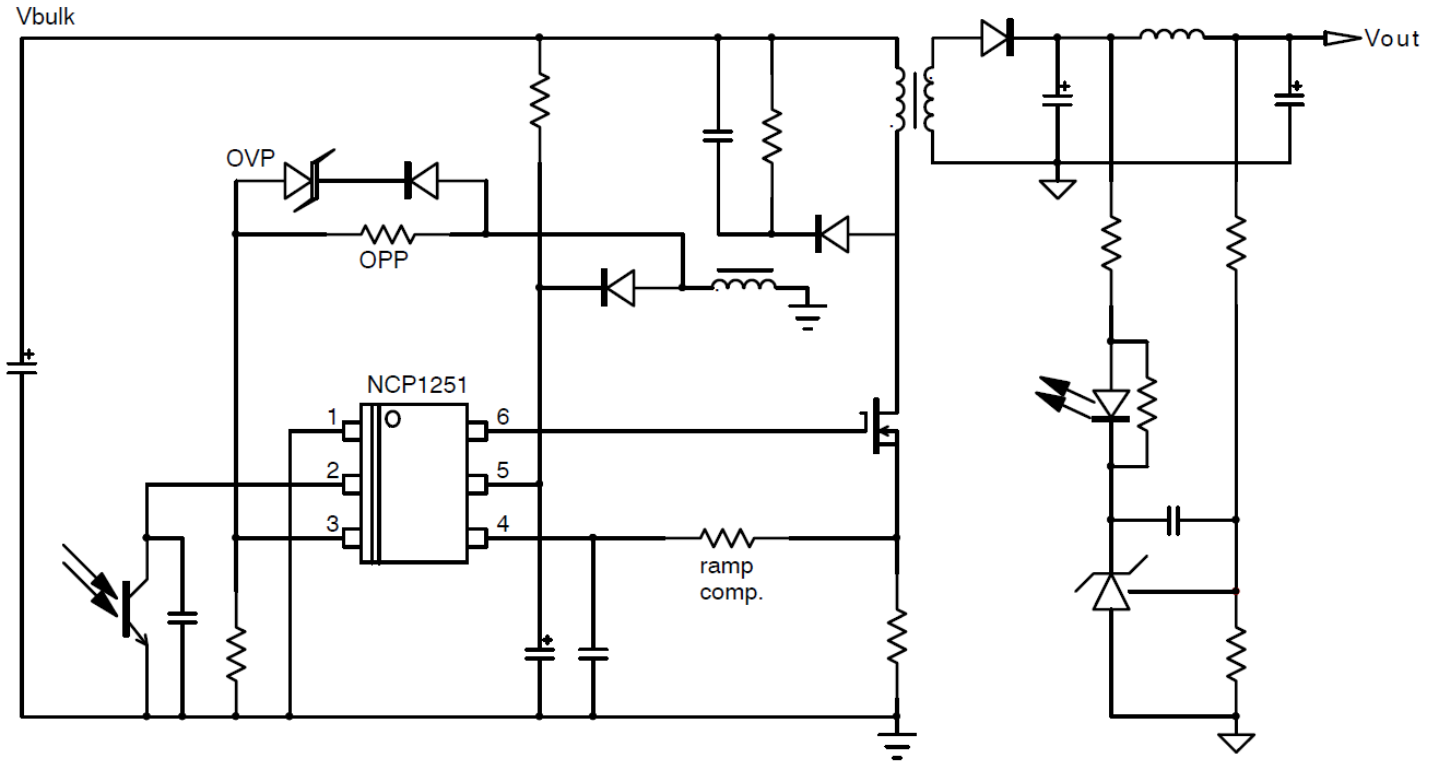
#### End Products

- Set-top Boxes
- Printers
- Notebooks and Netbooks

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Topology	Control Mode	f <sub>sw</sub> Typ (kHz)	Stand-by Mode	UVLO (V)	Short Circuit Protection	Latch	Soft Start	V <sub>cc</sub> Max (V)	Drive Cap. (mA)	Package Type
NCP1251ASN100T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.8	Yes	Yes	Yes	28	300 / 500	TSOP-6
NCP1251ASN65T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	28	300 / 500	TSOP-6
NCP1251BSN100T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.8	Yes	OVP	Yes	28	300 / 500	TSOP-6
NCP1251BSN65T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	OVP	Yes	28	300 / 500	TSOP-6
NCP1251CSN65T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	NO	Yes	28	300 / 500	TSOP-6
NCP1251FSN65T1G	0.1733	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	28	300 / 500	TSOP-6

# Application Diagram



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

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