

## Product Overview

### NCP1249: PWM Controller Featuring Peak Power Excursion and HV Startup

For complete documentation, see the data sheet.

The NCP1249 is a highly integrated high-voltage PWM controller capable of delivering a rugged and high performance offline power supply with extremely low no-load consumption. With a supply range up to 30 V, the controller hosts a jittered 65-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 freezing the peak current setpoint.

To help build rugged converters, the controller features several key protective features: an internal brown-out, a non-dissipative Over Power Protection for a constant maximum output current regardless of the input voltage and two latched over voltage protection inputs - either through a dedicated pin or via the Vcc input.

The controller architecture is arranged to authorize a transient peak power excursion when the peak current hits the limit. At this point, the switching frequency is increased from 65 kHz to 130 kHz until the peak requirement disappears. The timer duration is then modulated as the converter crosses a peak power excursion mode (long) or undergoes a short circuit (short).

Similar to NCP1255 & NCP1254 with integrated HV Startup  
NCP1249 has Active ON (A&B) and Active OFF (C&D) versions.

#### Features

- Integrated High Voltage startup
- 65kHz operating frequency with 130kHz Frequency Excursion
- Internal and Adjustable Over Power Protection (OPP) Circuit
- Adjustable Brown-Out Protection
- Frequency Foldback down to 26 kHz and Skip-cycle in light load conditions
- Adjustable Timer-based Auto-recovery Overload/Short-circuit protection with 100% to 25% timer reduction for short-circuit faults
- Frequency Jittering in Normal and Frequency Foldback Modes
- Latch Input
- Double Vcc hiccup in fault mode

#### Benefits

- Provides lossless start-up sequence
- Allows for a high peak power delivery without increasing the transformer size
- Compensates peak current for changing line conditions
- Protects against drops in AC line input voltage
- Optimized efficiency across the entire power range
- Robust protection against both overload and short circuit conditions
- Softened EMI signature
- Flexible input can be used for OVP or OTP protection
- Reduced average power during fault mode

#### Applications

- Ac-Dc Adapters

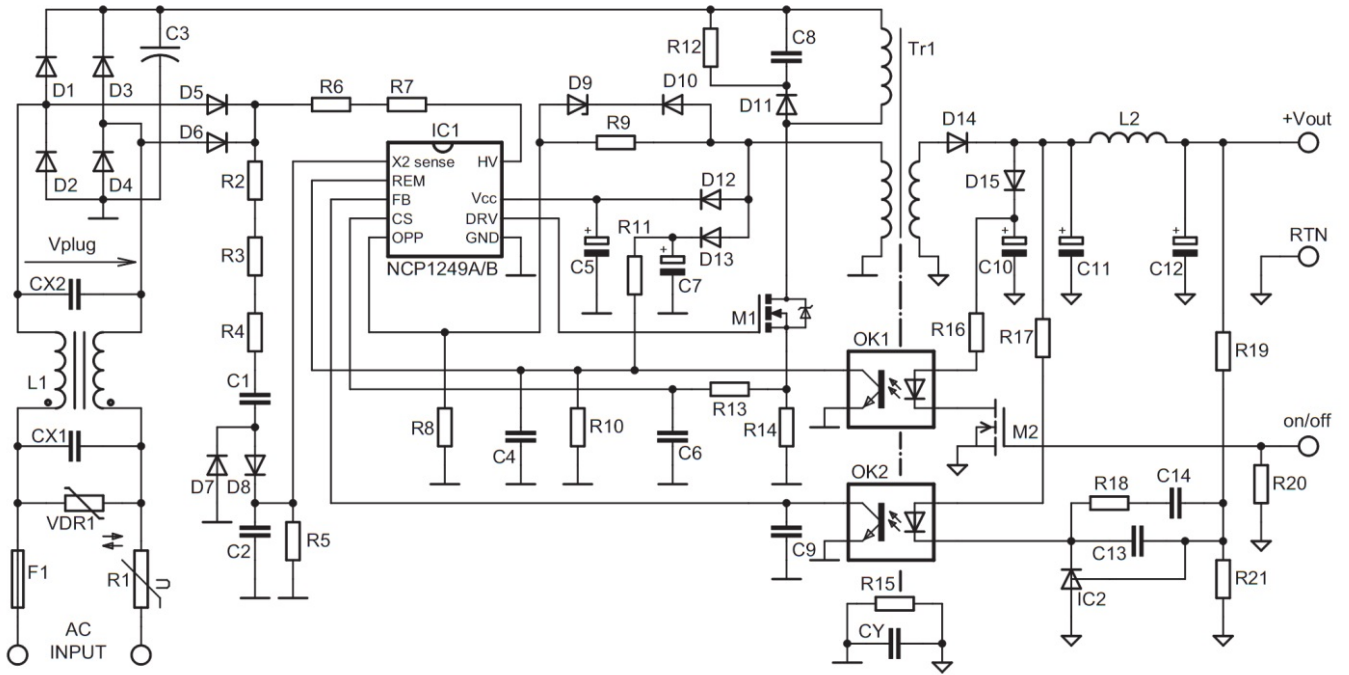
#### End Products

- Notebook Adapters
- Printer Power Supplies

#### Part Electrical Specifications

Product	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
NCP1249AD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	35	300 / 500	SOIC9 NB
NCP1249BD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	35	300 / 500	SOIC9 NB
NCP1249CD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	35	300 / 500	SOIC9 NB
NCP1249DD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.8	Yes	Yes	Yes	35	300 / 500	SOIC9 NB

# Application Diagram



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

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