

Product Overview

NCP1255: PWM Controller, Current Mode, for Offline Power Supplies Featuring Peak Power Excursion

For complete documentation, see the data sheet.

The NCP1255 is a highly integrated PWM controller capable of delivering a rugged and high performance offline power supply in a SOIC-8 package. With a supply range up to 35 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: a brown-out, a non-dissipative Over Power Protection for a constant maximum output current regardless of the input voltage, two latched over voltage protection inputs 0 either through a dedicated pin or via the Vcc input - and finally, the possibility to externally adjust an auto-recovery timer duration. 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).

Features

- 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

- 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

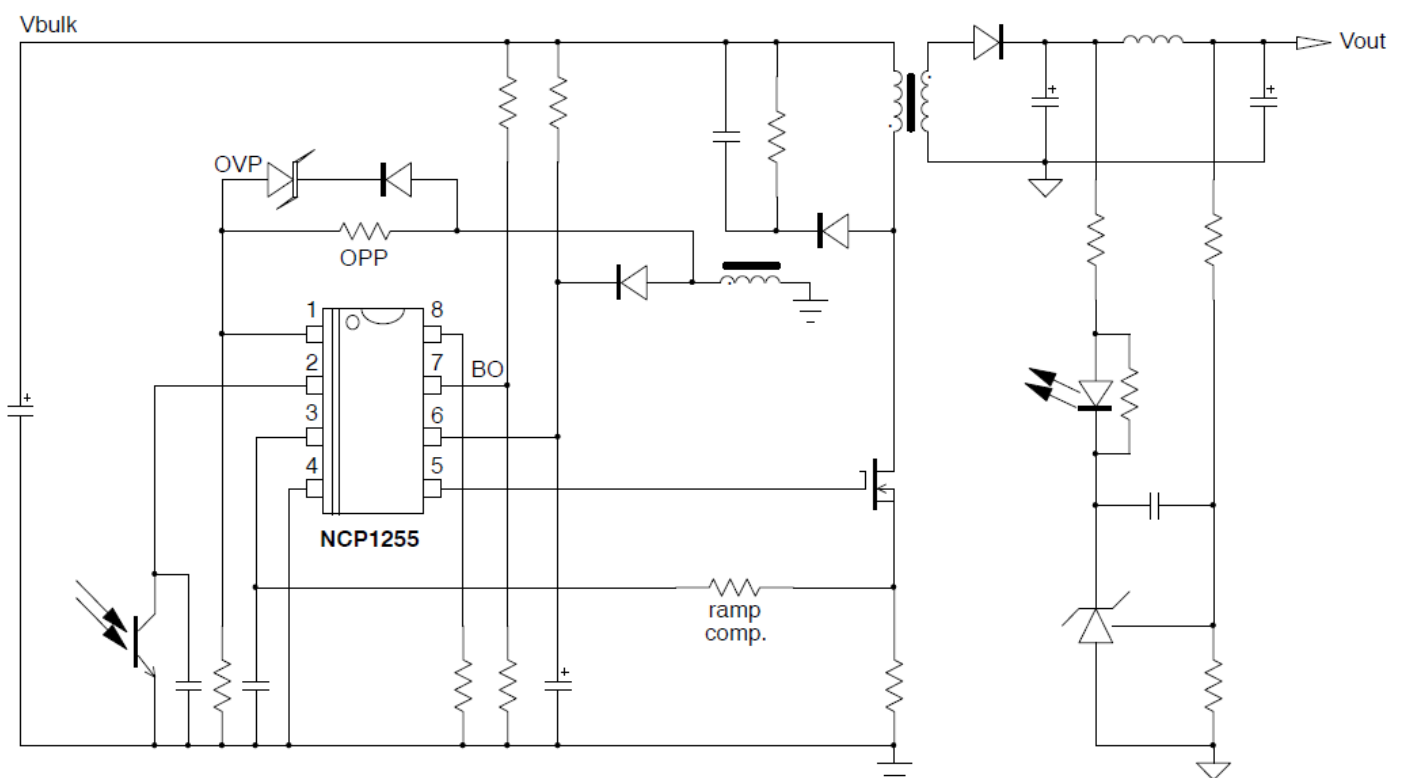
Applications

- Ac-Dc Adapters

End Products

- Notebook Adapters
- Printer Power Supplies

Application Diagram



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