Product Overview

NCP1308: Controller, Free Running Quasi-Resonant Current Mode

For complete documentation, see the data sheet.

The NCP1308 combines a true current mode modulator and a demagnetization detector to ensure full borderline/Critical Conduction Mode in any load/line conditions and minimum drain voltage switching (Quasi-Resonant operation). Due to its inherent skip cycle capability, the controller enters burst mode as soon as the power demand falls below a predetermined level. As this happens at low peak current, no audible noise can be heard. An internal 10us timer prevents the free-run frequency to exceed a high frequency (therefore below the 150kHz CISPR-22 EMI starting limit), while the skip adjustment capability lets the user select the frequency at which the burst foldback takes place. The Dynamic Self-Supply (DSS) drastically simplifies the transformer design in avoiding the use of an auxiliary winding to supply the NCP1308. This feature is particularly useful in applications where the output voltage varies during operation (e.g. battery chargers). Thanks to its high-voltage technology, the IC is directly connected to the high-voltage DC rail. As a result, the short-circuit trip point is not dependent upon any VCC auxiliary level. The transformer core reset detection is done through an auxiliary winding which, brought via a dedicated pin. If an OVP has been detected on the Vcc pin, the IC permanently latches-off. Finally, the continuous feedback signal monitoring implemented with an over-current fault protection circuitry (OCP) makes the final design rugged and reliable.

Features

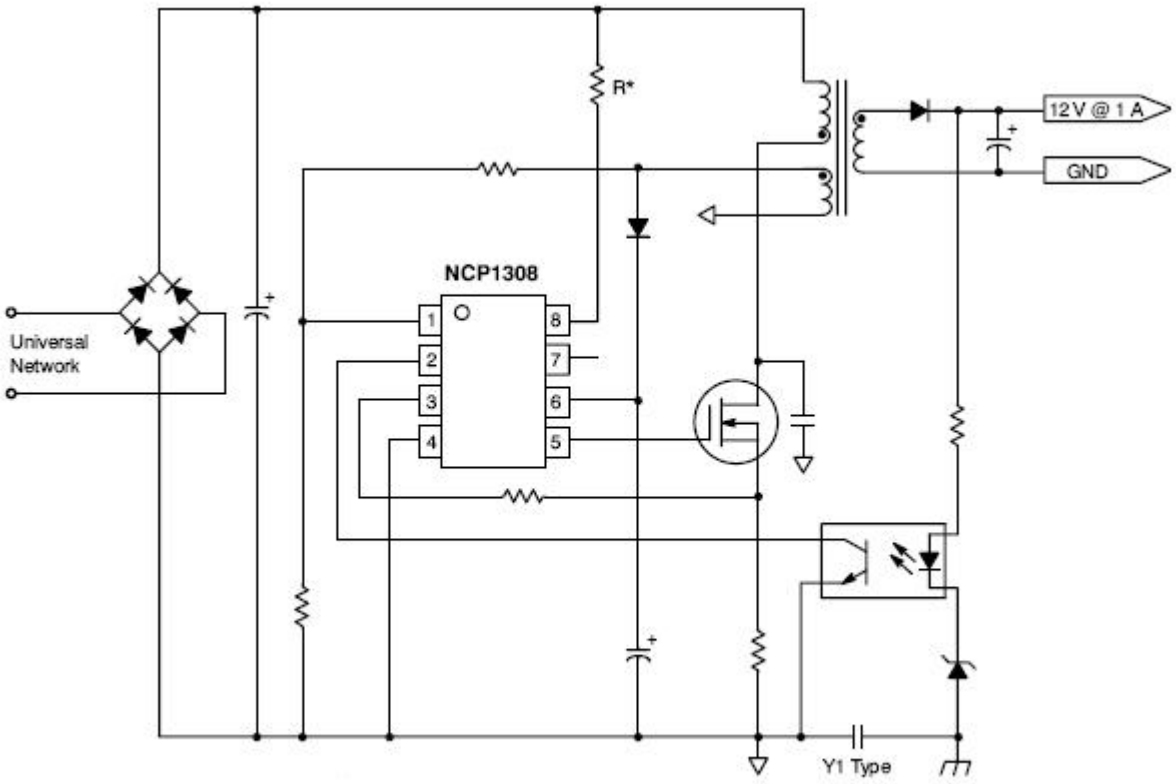
- FreeRunning Borderline/Critical Mode QuasiResonant Operation
- CurrentMode with Adjustable Skip Cycle Capability
- Dynamic SelfSupply Type of VCC
- AutoRecovery Overcurrent Protection
- Improved UVLO for VCC below 10 VDevice Package Shipping
- Latching Overvoltage Protection on VCC
- 500 mA Peak Current Source/Sink Capability
- Internal 1.0 ms SoftStart
- Internal 10 us Minimum TOFF
- Adjustable Skip Level

  For more features, see the data sheet

Applications

- ACDC Adapters for Notebooks, etc.
- Offline Battery Chargers
- Consumer Electronics (DVD Players, SetTop Boxes, TVs, etc.)
- Auxiliary Power Supplies (USB, Appliances, TVs, etc.)

Application Diagram



Typical Application Schematic

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

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