

## Product Overview

### NCP1398: Controller, High Performance, Resonant Mode, with Integrated High-Voltage Drivers

For complete documentation, see the data sheet.

The NCP1398 is a high performance controller for half bridge LLC resonant converters. The integrated high voltage gate driver simplifies layout and reduces external component count. A unique architecture, which includes a 750 kHz Voltage Controlled Oscillator whose control mode permits flexibility when an ORing function is required allows the NCP1398 to deliver everything needed to build a reliable and rugged resonant mode power supply. The NCP1398 provides a suite of protection features with configurable settings to allow optimization in any application. This includes: auto-recovery and latch-off over-current protection, brown-out detection, open optocoupler detection, adjustable soft-start and dead-time.

#### Features

- Adjustable minimum switching frequency with 3% accuracy (improved Fmax of 6%)
- Brown-out input
- 1 A / 0.5 A Peak Current Sink / Source Drive
- Timer-based OCP input with auto-recovery
- Second latched OCP level
- Adjustable deadtime from 100 ns to 2 us
- Adjustable soft-start
- Designed with Pin-to-Adjacent-Pin Short Testing Safety Considerations
- Designed with Open Pin Testing Safety Considerations

#### Benefits

- Keeps the converter operation in the right region & simplifies design
- Simple PFC association
- High gate drive capability
- Allows transient overload, protects against overpower
- Protects application in case of short circuit
- Prevents shoot-through currents and allows for optimization based on MOSFET characteristics
- Reduces startup currents
- Enhanced reliability and safety
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#### Applications

- High Efficiency 90W~500W Power Supplies

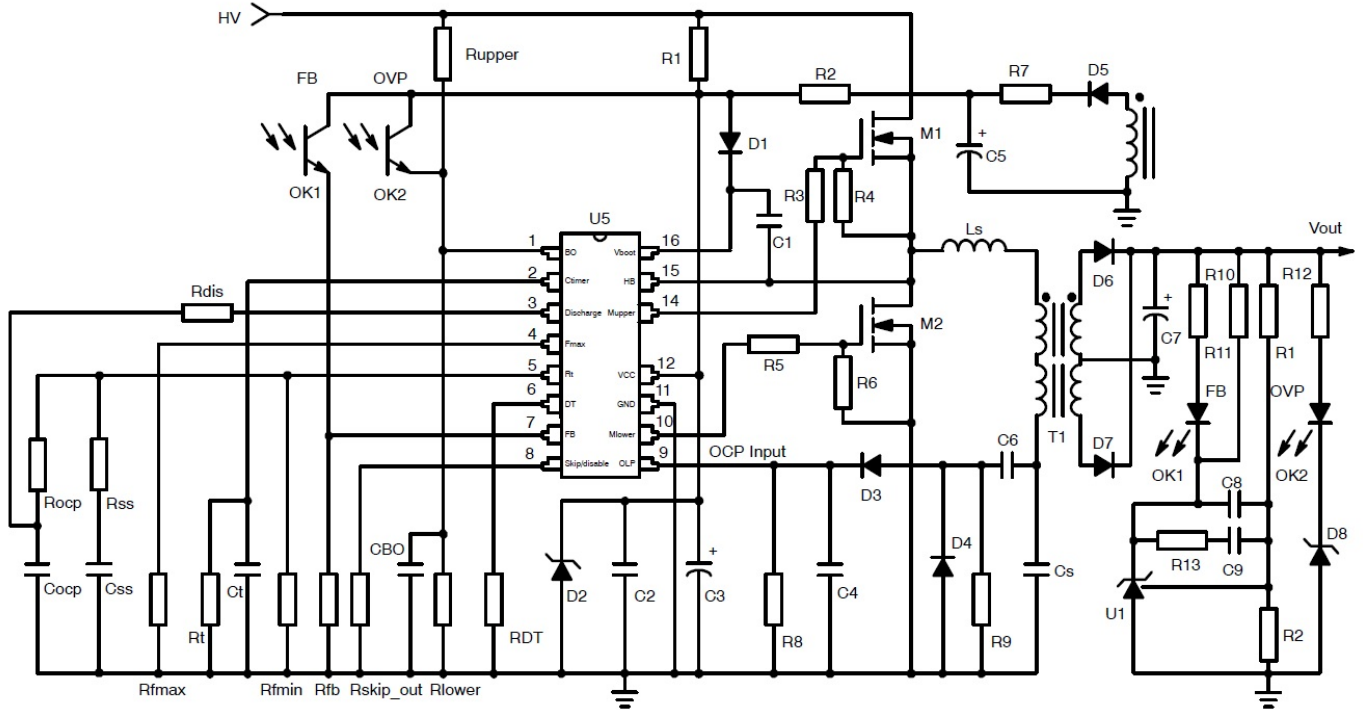
#### End Products

- LCD-TV
- LED Lighting Systems
- All-in-One Computer, Desktop, Server Power Supplies
- Home and Industrial Appliances
- Medium- and high-power small size notebook adapters

### 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
NCP1398BDR2G	Pb-free	Active	Half-Bridge	Current/Voltage Mode	Up to 750	No	9.5/10.5	Yes	Yes	Yes	20	500 / 1000	SOIC-16
	Halide free												
NCP1398CDR2G	Pb-free	Active	Half-Bridge	Current/Voltage Mode	Up to 750	No	9.5/10.5	Yes	Yes	Yes	20	500 / 1000	SOIC-16
	Halide free												

# Application Diagram



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