

## Product Overview

### NCP1339: High Frequency Quasi-Resonant Controller

For complete documentation, see the data sheet.

The NCP1339 is a highly integrated quasi-resonant flyback controller capable of controlling rugged and high-performance off-line power supplies as required by adapter applications. With an integrated active X-cap discharge feature and power savings mode, the NCP1339 can enable no-load power consumption below 10 mW for 65 W notebook adapters.

The quasi-resonant current-mode flyback stage features a proprietary valley-lockout circuitry, ensuring stable valley switching. This system works down to the 6th valley and toggles to a frequency foldback mode to eliminate switching losses. When the loop tends to force below 25-kHz frequencies, the NCP1339 skips cycles to contain the power delivery.

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, a latched over voltage protection through a dedicated pin.

#### Features

- Loss-free Adjustable Over Power Protection
- Latched / Autorecovery Timer-Based Overload Protection
- Brown Out Protection
- High voltage startup current source
- Active Input Filter Capacitor Discharge Circuitry
- Latch input for OVP and OTP implementations
- Valley Switching Operation with Valley-Lockout

#### Benefits

- Limits the peak current according to input line voltage
- Short circuit protection for improved reliability
- Protects against drops in input mains voltage
- Provides a quick and lossless power-on sequence
- Eliminates the need for a X2 resistors
- Simple implementation of required protection functions
- Improved efficiency with noise immunity

#### Applications

- High Power Ac-Dc converters
- Ultra High Density Adapters

#### End Products

- Notebook Adapters
- Flat TV SMPS
- USB-Pd 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
NCP1339CDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339DDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339EDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339FDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339GDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339HDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339IDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB
NCP1339JDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	Yes	9	Yes	Yes	Yes	30	500 / 800	SOIC-14 NB

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