

Product Overview

NCP1239: Fixed Frequency Current Mode Controller for Flyback Converter with HV startup

For complete documentation, see the data sheet.

The NCP1239 is a fixed-frequency current-mode controller featuring the Dynamic Self-Supply. This function greatly simplifies the design of the auxiliary supply and the Vcc capacitor by activating the internal startup current source to supply the controller during start-up, transients, latch, stand-by etc.

With a supply range up to 35 V, the controller hosts a jittered 65 or 100-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 minimum level of 26 kHz. As the power further goes down, the part enters skip cycle while limiting the peak current that insures excellent efficiency in light load condition.

It features a timer-based fault detection that ensures the detection of overload and an adjustable compensation to help keep the maximum power independent of the input voltage.

Features

- Fixed-frequency 65-kHz or 100-kHz current-mode control operation
 - Frequency foldback down to 26 kHz and skip mode
 - Adjustable Over Power Protection (OPP) circuit
 - High-voltage Current Source with Brown-out (BO) detection
 - Internal fixed 8-ms soft-start
 - Frequency jittering in normal and frequency foldback modes
 - 64-ms timer-based short-circuit protection with auto-recovery or latched operation
 - Pre-short ready
 - Latched OVP on Vcc (NCP1239 A & B versions)
 - Latched OVP/OTP input for improved robustness
- For more features, see the data sheet

Benefits

- Fixed-frequency is simple to implement and predictable in term of EMI
- Maximize performance in light load conditions
- OPP can be adjusted to the need of specific applications
- BO monitor and detect a falling input voltage, needed in some applications
- Simplified implementation that does not require programming
- Lowers switching frequency EMI
- Allows for safe operation while tolerant to faults if needed
- Safe operation yet tolerant to faults
- Safe operation
- Safe operation

Applications

- Ac-dc converters for TVs, set-top boxes and printers
- Offline adapters for notebooks and netbooks

Part Electrical Specifications

Product	Compliance	Status	Topology	Control Mode	f _{sw} Typ (kHz)	Stand-by Mode	UVLO (V)	Short Circuit Protection	Latch	Soft Start	V _{CC} Max (V)	Drive Cap. (mA)	Package Type
NCP1239AD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239AD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239BD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239BD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239CD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239DD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239ED65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	No	Yes	35	500 / 500	SOIC-7
NCP1239FD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239GD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239HD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239KD65R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8	Yes	Yes	Yes	35	500 / 500	SOIC-7
NCP1239LD65R2G	Pb-free Halide free	Active											SOIC-7
NCP1239MD65R2G	Pb-free Halide free	Active											SOIC-7
NCP1239ND65R2G	Pb-free Halide free	Active											SOIC-7

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

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