

Product Overview

NCP1247: PWM Controller, Fixed Frequency, Flyback Converters, USB-Pd Reference Design

For complete documentation, see the data sheet.

The NCP1247 is a new fixed-frequency current-mode PWM controller featuring Dynamic Self-Supply. This function greatly simplifies the design of the auxiliary supply and the V_{CC} capacitor by activating the internal startup current source to supply the controller during start-up, transients, latch, stand-by etc. This device contains a special HV detector which detects the application unplug from the AC input line and triggers the X2 discharge current. The HV structure also includes brown-out detection circuitry. The NCP1247 features a timer-based fault detection that ensures the detection of overload and an adjustable power compensation to help keep the maximum power independent of the input voltage. Due to frequency foldback, the controller exhibits excellent efficiency in light load condition while still achieving very low standby power consumption. Internal frequency jittering, ramp compensation, and a versatile latch input make this controller an excellent candidate for robust power supply designs. A dedicated off mode allows the SMPS to reach extremely low no load input power consumption when combined with secondary side controller NCP4353 or NCP4354. When used together, the SMPS is capable of achieving NCP1247 - Adds C & D option for different Brown Out threshold- Enhanced operation with Sync Rec in light load- Increased HV timer- Revised X2 discharge sequence
This product is IEC60950 compliant. Please see the test report and certification in the Conformance report section below.

Features

- Frequency foldback and skip mode
- Timer-based overload protection with latched (A version) or auto-recovery (B version) operation
- High-voltage startup with dynamic self supply
- Integrated brown-out detection
- Frequency Modulation
- Adjustable overpower protection
- Latch off input

Applications

- AC-DC Adapters
- LCD TV power supplies
- USB-Pd (USB Power Delivery)
- Offline USB Pd

Benefits

- Optimized efficiency across the entire load range
- Protection against overcurrent and short circuit
- Simplifies the design of the auxiliary supply
- Protects against any drops in line voltage
- Softened EMI signature
- Automatically adjusts the current limit depending on the line input voltage (high line or low line)
- Protection against faults

End Products

- Notebook Computers
- Offline USB Power Delivery SMPS

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
NCP1247AD065R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247AD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247BD065R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247BD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247CD065R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247CD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247DD065R2G	Pb-free Halide free	Active	Flyback	Current Mode	65	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7
NCP1247DD100R2G	Pb-free Halide free	Active	Flyback	Current Mode	100	Yes	8.9	Yes	Yes	Yes	28	500 / 800	SOIC-7

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