

Product Overview

NCP1351: Controller, Variable Off-Time Current Mode, with Short Circuit Protection

For complete documentation, see the data sheet.



The NCP1351 is a current mode controller targeting low power off line flyback Switched Mode Power Supplies (SMPS) where cost is of utmost importance. Based on a fixed peak current technique (quasi fixed TON), the controller decreases its switching frequency as the load becomes lighter. As a result, a power supply using the NCP1351 naturally offers excellent no load power consumption, while optimizing the efficiency in other loading conditions. When the frequency decreases, the peak current is gradually reduced down to approximately 30% of the maximum peak current to prevent transformer mechanical resonance. The risk of acoustic noise is thus greatly diminished while keeping good standby power performance. An externally adjustable timer permanently monitors the feedback activity and protects the supply in presence of a short circuit or an overload. Once the timer elapses, NCP1351 stops switching and stays latched for version A, and tries to restart for Version B. The internal structure features an optimized arrangement which allows one of the lowest available startup current, a fundamental parameter when designing low standby power supplies. The negative current sensing technique minimizes the impact of the switching noise on the controller operation and offers the user to select the maximum peak voltage across his current sense resistor. Its power dissipation can thus be application optimized. Finally, the bulk input ripple ensures a natural frequency smearing which smooths the EMI signature.

Features

- Quasi fixed TON, Variable TOFF Current Mode Control
- Frequency foldback with Peak Current Compression
- Short circuit protection (latched A version or auto restart B version)
- Primary or secondary side regulation
- Dedicated Latch Input for OTP, OVP
- Low start-up current
- Natural frequency jittering
- Negative current sensing with programmable current sense resistor

Benefits

- Natural frequency foldback
- Noise free & improved efficiency in light load
- Independent of the auxiliary Winding

Applications

- Auxiliary Power Supply
- Off-line battery chargers

End Products

- Printers
- Adapters

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
NCP1351BDR2G	Pb-free Halide free	Active	Flyback	Current Mode	Variable	No	Yes	Yes	Yes	No	28	400 / 400	SOIC-8

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

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