ON Semiconductor®

Energy Efficient Innovations

Product Overview

NCP1124: High Voltage Switching Regulator for Offline SMPS

For complete documentation, see the data sheet

Product Description

The NCP1124 switcher offers everything needed to build reliable and compact AC-DC switching power supplies with minimal surrounding elements. Incorporating an avalanche rated 650 V MOSFET, converters built with the NCP1124 can be safely designed for international conditions without jeopardizing the overall reliability.

The NCP1124 implements peak current mode control with adjustable ramp compensation that ensures stability in Continuous Conduction Mode (CCM) operation. With an external resistor, the maximum peak current is adjustable, allowing the designer the ability to inject ramp compensation to stabilize CCM power supplies.

A short circuit fault condition is independently detected from the auxiliary winding voltage resulting in improved short circuit protection with true overload detection. The Source pin provides access to the MOSFET source, allowing for overpower compensation.

With a supply range up to 26 V, the switcher also provides a jittered 65 kHz or 100 kHz switching frequency operated in peak current mode control. When the power on the secondary side starts to decrease, the switcher automatically folds back its switching frequency down to a minimum level of 26 kHz. As the power further goes down, the part enters skip cycle while limiting the peak current.

Features

- 650 V Avalanche Rated MOSFET
- FixedFrequency 65 or 100 kHz CurrentMode Control with Adjustable Internal Ramp Compensation
- Frequency Foldback Down to 26 kHz and SkipCycle for Light Load Efficiency
- Adjustable Current Limit with External Resistor
- 50 ms Timer-Based Auto-Recovery Short-Circuit Protection
- Frequency Jittering in Normal and Frequency Foldback Modes
- Option for Auto-Recovery or Latched Short-Circuit Protection
- Less than 100 mW Standby Power at High Line

Benefits

- Rugged MOSFET for robust design
- Ability to scale for efficiency or size
- Eliminate acoustic noise and improved efficiency at light loads
- Scale for various designs 5W~20W
- Provides more robust protection without worrying about the coupling of the aux winding
- Improved efficiency at light load / Improved EMI over the entire load
- Flexible protection options
- EPS 2.0 Compliant

Applications

- Power Supply

End Products

- Power supply for DVD, STB, CD-Player
- Aux supply for TV, USB, Appliance

Part Electrical Specifications

Product	Compliance	Status	Control Mode	f_{sw} Typ (kHz)	f_{Jitter} Typ (%)	Stand-by Mode	$R_{DS(ON)}$ Typ ()	$V_{(BR)DSS}$ Max (V)	I_{Peak} (mA)	HV Start-up Min (V)	DSS (mA)	UVLO	Short Circuit Protection	Over Power Comp.	Brown-out	Latch	Package Type
NCP1124AP100G	Pb-free Halide free	NEW	Current Mode	65	+/- 5% of Fsw	Yes	9	650		Yes		8.8	Yes	No	No	Yes	PDIP-8
NCP1124AP65G	Pb-free Halide free	NEW	Current Mode	100	+/- 5% of Fsw	Yes	9	650		Yes		8.8	Yes	No	No	Yes	PDIP-8
NCP1124BP100G	Pb-free Halide free	NEW	Current Mode	65	+/- 5% of Fsw	Yes	9	650		Yes		8.8	Yes	No	No	No	PDIP-8
NCP1124BP65G	Pb-free Halide free	NEW	Current Mode	100	+/- 5% of Fsw	Yes	9	650		Yes		8.8	Yes	No	No	No	PDIP-8

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

Created on: 8/15/2014