

Product Overview

NCP1077A: Enhanced Off line Switcher for Robust and Highly Efficient Power Supplies

For complete documentation, see the data sheet.

The NCP1077A & NCP1077B products integrate a fixed frequency current mode controller with a 700 V MOSFET. Available in a two different pin out of the very common PDIP 7 package, it offers a high level of integration, including soft start, frequency jittering, short circuit protection, skip cycle, a maximum peak current set point, ramp compensation, and a dynamic self supply (DSS, eliminating the need for an auxiliary winding).

Unlike other monolithic solutions, the NCP1077A & NCP1077B is quiet by nature: during nominal load operation, the part switches at one of the available frequencies (65 or 100 kHz). When the output power demand diminishes, the IC automatically enters frequency foldback mode and provides excellent efficiency at light loads. When the power demand reduces further, it enters into a skip mode to reduce the standby consumption down to a no load condition.

Protection features include: a timer to detect an overload or a short circuit event, Over voltage Protection with auto recovery. Ac input line voltage detection prevents lethal runaway in low input voltage conditions (Brown-out) as well as too high an input line (Ac line Over voltage Protection). This also allows an Over power Protection to compensate all internal delays in high input voltage conditions and optimize the maximum output current capability.

For improved standby performance, the connection of an auxiliary winding stops the DSS operation and helps to reduce input power consumption below 50 mW at high line.

Features

- Integrated 700 V MOSFET with $R_{DS(on)}$ of 4.7 Ω
- Current-Mode Fixed Frequency Operation (65 & 100 kHz) - 130 kHz for B version only
- Peak Current: NCP1076A/B = 650mA and NCP1077A/B = 800 mA
- Skip-Cycle Operation at Low Peak Current
- Dynamic Self-Supply (DSS)
- Auto-Recovery Output Short Circuit Protection with Timer-Based Detection
- Frequency Foldback Operation
- 300 μ A No Load Power Consumption
- Frequency Jittering (including during frequency foldback mode)
- Adjustable Brown-out Protection and OVP

For more features, see the data sheet

Benefits

- Up to 30W output SMPS design capability
- Ability to scale for efficiency or size
- Adjust output current protection based on output power demand
- Eliminate acoustic noise
- Eliminate Aux winding
- Provides more robust protection without worrying about the coupling of the aux winding
- Improved efficiency at light load / Improved EMI over the entire load
- <50mW no Load Power Consumption
- Better EMI Signature Over the Entire Operating Range
- Enhanced Protection Against too Low or too High Input Voltage

Applications

- Auxiliary & Standby Power Supply
- Major Home Appliances power supplies
- Low to medium Power Chargers & Adapters

End Products

- White Goods
- E-Meters
- Industrial
- Consumer Equipment Power Supply

Part Electrical Specifications

Product	Compliance	Status	Contr ol Mode	f _{sw} Typ (kHz)	f _{Jitter} Typ (%)	Stand-by Mode	R _{DS(O N)} Typ (Ω)	V _{(BR) DSS} Max (V)	I _{Peak} (mA)	HV Start-up Min (V)	DSS (mA)	UVL O	Short Circuit Protection	Over Power Compensation	Brown-out	Latch	Package Type
NCP1077AAP065G	Pb-free Halide free	Active	Current Mode	65	Yes	Yes	4.7	700	800	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP-7
NCP1077AAP100G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	4.7	700	800	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP-7
NCP1077ABP065G	Pb-free Halide free	Active															PDIP-7
NCP1077ABP100G	Pb-free Halide free	Active															PDIP-7
NCP1077BAP065G	Pb-free Halide free	Active	Current Mode	65	Yes	Yes	4.7	700	800	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP 8 Less Pin 3
NCP1077BAP100G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	4.7	700	800	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP 8 Less Pin 3
NCP1077BAP130G	Pb-free Halide free	Active															PDIP 8 Less Pin 3
NCP1077BBP065G	Pb-free Halide free	Active															PDIP 8 Less Pin 3
NCP1077BBP100G	Pb-free Halide free	Active															PDIP 8 Less Pin 3
NCP1077BBP130G	Pb-free Halide free	Active															PDIP 8 Less Pin 3

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

Created on: 9/19/2018