Product Overview

NCP1075A: Enhanced Off line Switcher for Robust and Highly Efficient Power Supplies

For complete documentation, see the data sheet.

The NCP1075A & NCP1075B 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 NCP1075A & NCP1075B 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 RDS(on) of 13.5 Ω
- Current-Mode Fixed Frequency Operation (65 & 100 kHz) - 130 kHz for B version only
- Peak Current: NCP1075A/B = 400 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 µA 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 20 W 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
- 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 & Home Appliances
- E-Meters
- Industrial auxiliary Power Supply
- Consumer Equipment Power Supply

Part Electrical Specifications

Product	Compliance	Status	Control Mode	f_{sw} Typ (kHz)	f_{jitter} Typ (%)	Stand-by Mode	$R_{DS(ON)}$ Typ (Ω)	$V_{(BR)DSS}$ Max (V)	I_{Peak} (mA)	HV Start-up Min (V)	DSS (mA)	UVLO	Short Circuit Protection	Over Power Compensation	Brown-out	Latch	Package Type
NCP1075AAP065G	Pb-free Halide free	Active	Current Mode	65	Yes	Yes	11.5	700	400	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP-7
NCP1075AAP100G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	11.5	700	400	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP-7
NCP1075ABP065G	Pb-free Halide free	Active															PDIP-7
NCP1075ABP100G	Pb-free Halide free	Active															PDIP-7
NCP1075BAP065G	Pb-free Halide free	Active	Current Mode	65	Yes	Yes	11.5	700	400	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP 8 Less Pin 3
NCP1075BAP100G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	11.5	700	400	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP 8 Less Pin 3
NCP1075BAP130G	Pb-free Halide free	Active	Current Mode	130	Yes	Yes	11.5	700	400	Yes	9.2	6.5	Yes	Yes	Yes	No	PDIP 8 Less Pin 3
NCP1075BBP065G	Pb-free Halide free	Active															PDIP 8 Less Pin 3
NCP1075BBP100G	Pb-free Halide free	Active															PDIP 8 Less Pin 3
NCP1075BBP130G	Pb-free Halide free	Active															PDIP 8 Less Pin 3

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

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