

Product Overview

NCP1060: High-Voltage Switcher for low Power offline SMPS

For complete documentation, see the data sheet.

The NCP1060 integrate a fixed frequency current mode controller with a 700 V MOSFET. Available in a PDIP-7 and SOIC-10 package, the NCP1060 offer a high level of integration, including soft-start, frequency-jittering, short-circuit protection, skip-cycle, adjustable peak current set point, ramp compensation, and a Dynamic Self-Supply (eliminating the need for an auxiliary winding). Unlike other monolithic solutions, the NCP1060 is quiet by nature: during nominal load operation, the part switches at one of the available frequencies (60 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, Overvoltage Protection with auto-recovery and AC input line voltage detection (A version). The ON proprietary integrated Over Power Protection (OPP) lets you harness the maximum delivered power without affecting your standby performance simply via external resistors. The NCP1060/NCP1063 family can be seamlessly used both in non-isolated and in isolated topologies.

Features

- Built-in 700 V MOSFET with RDS(on) of 34 Ω
- Large Creepage Distance Between High-voltage Pins
- Adjustable Peak Current up to 250 mA
- Direct Feedback connection for non-isolated converter
- Internal and Adjustable Over Power Protection (OPP) Circuit
- Auto-Recovery Output Short Circuit Protection with Timer-Based Detection
- Frequency Jittering (including during frequency foldback mode)
- Current-Mode Fixed Frequency Operation – 60 or 100 kHz (130 kHz on demand)
- Frequency Foldback Operation
- With (A version) or without (B version) AC Input Voltage Line Detection

For more features, see the data sheet

Applications

- Auxiliary Power Supply Isolated and Non-isolated
- White goods (Washing, Cold, Aircon ,...)
- LED Lighting systems
- Wide Vin Industrial low power SMPS
- Power Meter SMPS

Benefits

- Up to 8W output SMPS design capability
- Safer and more robust design even with SMD packages
- Increased design scalability
- Simpler and lower cost Buck or Buck-Boost designs
- Non dissipative proprietary technique to self protect the load
- Provides more robust protection without worrying about the coupling of the aux winding
- Better EMI Signature Over the Entire Operating Range
- Ability to scale for efficiency or size
- Improved efficiency at light load / Improved EMI over the entire load conditions
- Enhanced Protection Against Faults when AC line is too low or for power supply with Vin down to 21 Vdc

End Products

- Auxiliary Power Supply Isolated and Non-isolated
- White goods
- LED Lighting systems
- Wide Vin Industrial low power SMPS
- Power Meter SMPS

Part Electrical Specifications

Product	Compliance	Status	Control Mode	f _{sw} Typ (kHz)	f _{jitter} Typ (%)	Stand-by Mode	R _{DS(O)} Typ (Ω)	V _{(BR)PSS} Max (V)	I _{Peak} (mA)	HV Start-up Min (V)	DSS (mA)	UVLO	Short Circuit Protection	Over Power Compensation	Brown-out	Latch	Package Type
NCP1060AD060R2G	Pb-free Halide free	Active	Current Mode	60	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	SOIC-10 NB
NCP1060AD100R2G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	SOIC-10 NB
NCP1060AP060G	Pb-free Halide free	Active	Current Mode	60	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	PDIP-7
NCP1060AP100G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	PDIP-7
NCP1060BD060R2G	Pb-free Halide free	Active	Current Mode	60	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	SOIC-10 NB
NCP1060BD100R2G	Pb-free Halide free	Active	Current Mode	100	Yes	Yes	34	700	250	Yes	8	7	Yes	Yes	No	No	SOIC-10 NB

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

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