

Product Overview

NCV1072-75: Automotive High Voltage Switching Regulator

For complete documentation, see the data sheet.

The NCV1072 / NCP1075 products integrate a fixed frequency current mode controller with a 670 V MOSFET. Available in a PDIP-7 or SOT-223 package, the NCV1072/5 offer 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 (eliminating the need for an auxiliary winding).

Unlike other monolithic solutions, the NCV1072/5 is quiet by nature: during nominal load operation, the part switches at one of the available frequencies (65, 100 or 130 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 low input line voltage detection.

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 670 V MOSFET with RDS(on) of 11 Ω
- Current-Mode Fixed Frequency Operation (65/100/130 kHz)
- Peak Current: NCP1072 = 250mA / NCP1075 = 450 mA
- Skip-Cycle Operation at Low Peak Current
- Dynamic Self-Supply (DSS)
- Auto-Recovery Output Short Circuit Protection with Timer-Based Detection
- 300 μ A No Load Power Consumption
- AEC-Qualified

Benefits

- Up to 10 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
- More robust protection independent from the coupling of the aux winding
- <50mW no Load Power Consumption
- To be used in Automotive applications (HV Battery powered low power designs)

Applications

- EV Auxiliary Power Supply

End Products

- On Board Chargers
- EV Traction Inverters
- High Voltage DC/DC Converters
- Auxiliary HV Motor Control

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
NCV1075P065G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Current Mode	65	Yes	Yes	11	670	450	Yes	9	6.3	Yes	No	No	No	PDIP-7
NCV1075P100G	AEC Qualified PPAP Capable Pb-free Halide free	Active	Current Mode	100	Yes	Yes	11	670	450	Yes	9	6.3	Yes	No	No	No	PDIP-7

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

Created on: 10/21/2019