

## Product Overview

### NCP1013: High Voltage Switching Regulator for Offline SMPS

For complete documentation, see the data sheet.

The NCP101X series integrates a fixed-frequency current-mode controller and a 700 V voltage MOSFET. Housed in a PDIP7 package, the NCP101X offers everything needed to build a rugged and low-cost power supply, including soft-start, frequency jittering, short-circuit protection, skip-cycle, a maximum peak current setpoint and a Dynamic Self-Supply (no need for an auxiliary winding). Unlike other monolithic solutions, the NCP101X is quiet by nature: during nominal load operation, the part switches at one of the available frequencies (65-100-130 kHz). When the current setpoint falls below a given value, e.g. the output power demand diminishes, the IC automatically enters the so-called skip cycle mode and provides excellent efficiency at light loads. Because this occurs at typically 1/4 of the maximum peak value, no acoustic noise takes place. As a result, standby power is reduced to the minimum without acoustic noise generation.

### Features

- Built-in 700V MOSFET with Typical RdsON of 11 or 22 Ohms
- Large Creepage Distance between High-Voltage Pins
- Current- Mode Fixed Frequency Operation: 65kHz - 100kHz - 130kHz
- Skip-Cycle Operation at Low Peak Currents Only: No Acoustic Noise!
- Dynamic Self-Supply, No Need of an Auxiliary Winding
- Internal 1ms Soft-Start
- Auto-Recovery Internal Output Short-Circuit Protection
- Latched Overvoltage Protection with Auxiliary Winding Operation
- Frequency Jittering for better EMI Signature
- Below 100 mW Standby Power if Auxiliary Winding is Used

For more features, see the data sheet

### Applications

- Auxiliary Power Supplies

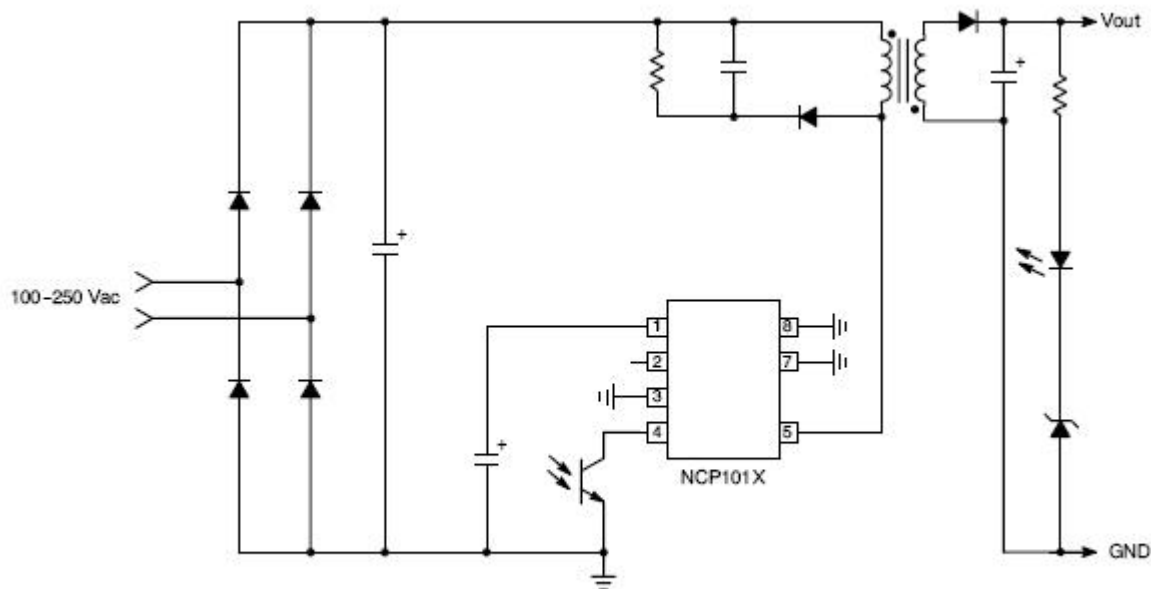
### End Products

- Low Power AC/DC Adapter for Chargers

## Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Control Mode	$f_{sw}$ Typ (kHz)	$f_{jitter}$ Typ (%)	Stand-by Mode	$R_{DS(on)}$ Typ ( $\Omega$ )	$V_{DSS}$ Max (V)	$I_{Peak}$ (mA)	HV Start-up Min (V)	DSS (mA)	UVLO	Short Circuit Protection	Over Power Compensation	Brown-out	Latch	Package Type
NCP1013AP065G	0.44	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	65	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	PDIP-7
NCP1013AP100G	0.3925	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	100	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	PDIP-7
NCP1013AP133G	0.4261	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	133	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	PDIP-7
NCP1013ST100T3G	0.4688	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	100	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	SOT-223-4 / TO-261-4D
NCP1013ST130T3G	0.4335	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	130	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	SOT-223-4 / TO-261-4D
NCP1013ST65T3G	0.4335	Pb-free Halide free non AEC-Q and PPAP	Active	Current Mode	65	Yes	Yes	11	700	350	Yes	8	Yes	Yes	No	No	Yes	SOT-223-4 / TO-261-4D

## Application Diagram



Typical Application Example

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

Created on: 1/27/2021