

Product Overview

NCP1597: Synchronous Buck Converter, 1 MHz, 2.0 A

For complete documentation, see the data sheet.

The NCP1597A family is a fixed 1 MHz frequency, high-output-current, synchronous PWM converter that integrate low-resistance, high-side P-channel MOSFETs and low-side N-channel MOSFETs. The NCP1597A utilizes current mode control to provide fast transient response and excellent loop stability and supports PFM mode at light load for higher efficiency. It regulates input voltages from 4.0 V to 5.5 V down to an output voltage as low as 0.8 V and is able to supply up to 2.0 A.

The NCP1597A has features including fixed internally switching frequency (FSW), and an internal soft-start to limit inrush currents. Using the EN pin, shutdown supply current is reduced to 1 μ A maximum.

Other features include cycle-by-cycle current limiting; short-circuit protection, power saving mode and thermal shutdown. The NCP1597A is pin to pin compatible to the 1.5A NCP1595A. The NCP1597B offers the same performance in a 10-pin 3x3mm DFN package.

Features

- Input voltage range from 4.0 V to 5.5 V
- Internal 140m / 90m MOSFETs
- Fixed 1 MHz Switching Frequency
- Hiccup Mode Short-Circuit Protection
- Thermal Shutdown Protection
- Adjustable Output Voltage Down to 0.8 V
- PFM Mode at Light Load

Applications

- USB Powered Devices
- Hard Disk Drive (HDD)
- DSP Power

Benefits

- Typical +5V applications
- High efficiency at full load
- Reduced output filter component size and value
- Reduced heat durring short circuit
- Prevents overheating in the application
- Ability to regulate low output voltages
- Increased efficiency at light load versus fixed PWM

End Products

- Set-Top-Box

Part Electrical Specifications

Product	Compliance	Status	Topology	Control Mode	V _{CC} Min (V)	V _{CC} Max (V)	V _O Typ (V)	I _O Typ (A)	Efficiency (%)	f _{sw} Typ (kHz)	Package Type
NCP1597AMNTWG	Pb-free	Active	Step-Down	Current Mode	4	5.5	0.8 to 4.95	2	90	1000	DFN-6

Application Diagram

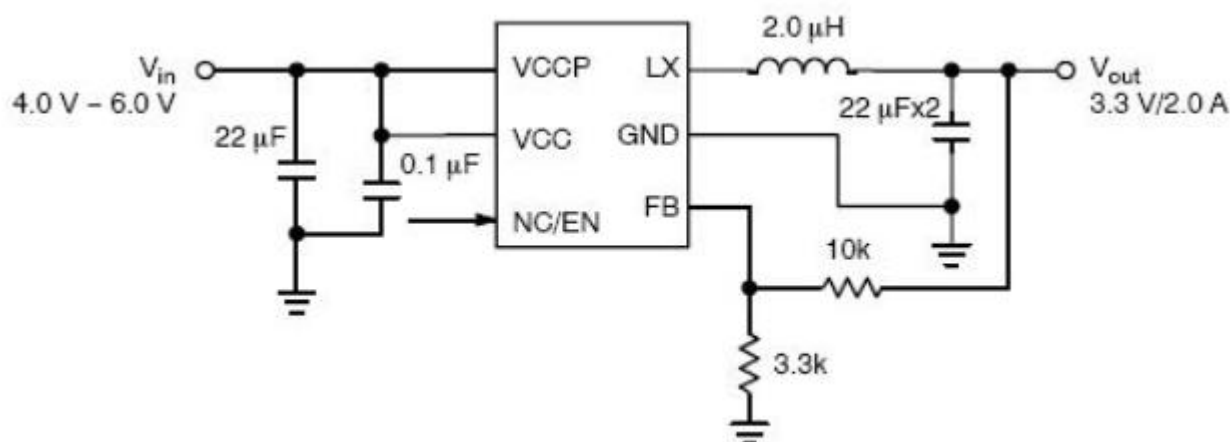


Figure 3. NCP1597/A

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

Created on: 11/6/2017