Product Overview

NCP1597B: Synchronous Buck Converter, 1 MHz, 2.0 A

For complete documentation, see the data sheet.

The NCP1597B is a fixed 1 MHz, high-output-current, synchronous PWM converter that integrates a low-resistance, high-side P-channel MOSFET and a low-side N-channel MOSFET. The NCP1597B utilizes current mode control to provide fast transient response and excellent loop stability. 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 A. The NCP1597B has features including fixed internal switching frequency (FSW), and an internal soft-start to limit inrush current. Using the EN pin, shutdown supply current is reduced to 3 μA maximum. Other features include cycle-by-cycle current limiting; short-circuit protection, low dropout mode, power saving mode and thermal shutdown. The part is also offered in a 6-pin 3x3mm DFN package under the NCP1597A.

Features

- Input Voltage Range: from 4.0 V to 5.5 V
- Internal 140 mΩ HighSide Switching P-FET and 90 mΩ Low-Side N-FET
- Fixed 1 MHz Switching Frequency
- Cycle-by-Cycle Current Limiting
- Overtemperature Protection
- Start-up with Pre-Biased Output Load
- 0.8 V +/- 1.5% Reference Voltage
- Power Saving Mode During Light Load

Benefits

- Optimized for +5V input
- High efficiency operation
- Small output inductor and output capacitance
- Protection feature
- Protection feature
- Compatible with uP Core and I/O requirements
- Ability to output low output voltage
- Increased efficiency at light load

Applications

- +5V DC-DC Regulator

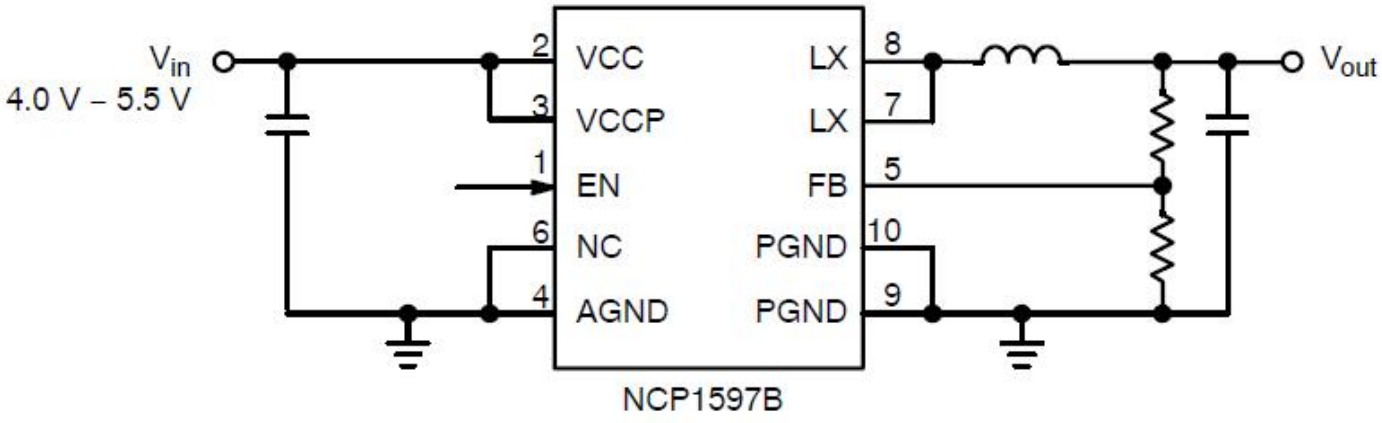
End Products

- Set-Top-Box
- LCD-TV / DTV / Plasma TV
- USB Powered Devices

Part Electrical Specifications

Product	Pricing ($/Unit)	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
NCP1597BMNTWG	0.3533	Pb-free Halide free	Active	Step-Down	Current Mode	4	5.5	0.8 to 4.95	2	90	1000	DFN-10

Application Diagram



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