

Product Overview

NCP1421: Boost Converter, Sync-Rect, PFM, DC-DC, 600 mA, with True-Cutoff and Ring-Killer

For complete documentation, see the data sheet.

NCP1421 is a monolithic micropower high-frequency step-up switching converter IC specially designed for battery-operated handheld electronic products up to 600 mA loading. It integrates Sync-Rect to improve efficiency and to eliminate the external Schottky Diode. High switching frequency (up to 1.2 MHz) allows for a low profile, small sized inductor and output capacitor to be used. When the device is disabled, the internal conduction path from LX or BAT to OUT is fully blocked and the OUT pin is isolated from the battery. This True-Cutoff function reduces the shutdown current to typically only 50nA. Ring-Killer is also integrated to eliminate the high-frequency ringing in discontinuous conduction mode. In addition to above, Low-Battery Detector, Logic-Controlled Shutdown, Cycle-by Cycle Current Limit and Thermal Shutdown provide value-added features for various battery operated applications. With all these functions ON, the quiescent supply current is typically only 8.5 μ A. This device is available in the compact and low Micro8 package.

Features

- High Efficiency: 94% for 3.3 V Output at 200 mA from 2.0 V Input 84% for 3.3 V Output at 500 mA from 2.5 V Input
 - High Switching Frequency, up to 1.2 MHz (Not Hitting Current Limit)
 - True-Cutoff Function Reduces Device Shutdown Current to typically 50nA
 - Anti-Ringing Ring-Killer for Discontinuous Conduction Mode
 - High Accuracy Reference Output, 1.2V \pm 1.5%, can supply 2.5mA Loading Current when $V_{OUT} > 3.3V$
 - Low Quiescent Current of 8.5 μ A
 - Integrated Low-Battery Detector
 - Open Drain Low -Battery Detector Output
 - 1.0V Startup at No Load Guaranteed
 - Output Voltage from 1.5V to 5.0V Adjustable
- For more features, see the data sheet

Applications

- Personal Digital Assistants (PDA)
- Camcorders and Digital Still Cameras
- Handheld Digital Audio Products
- Handheld Instruments
- Conversion from one to two Alkaline, NiMH, NiCd Battery Cells to 3.0-5.0V or one Lithium-ion cell to 5.0V

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
NCP1421DMR2G	0.5067	Pb-free Halide free	Active	Step-Up	Current/Voltage Mode	1	5.5	1.5 to 5.0	0.6	Up to 94	Up to 1200	Micro8™

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

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