

ADVANCE INFORMATION

All information in this data sheet is preliminary and subject to change.

8/95

MAXIM

1 to 3-Cell, High-Power, Low-Noise, Step-Up DC-DC Converters

General Description

The MAX848/MAX849 boost converters set a new standard of high efficiency and high integration for noise-sensitive power-supply applications, such as portable phones and small systems with RF data links. The heart of these devices is a synchronous boost-topology regulator that generates a fixed 3.3V output (or 2.7V to 5V adjustable output) from one to three NiCd/NiMH cells or one lithium-ion cell.

Synchronous rectification provides a 5% efficiency improvement over similar non-synchronous boost regulators. In standby mode, pulse-skipping PFM operation keeps the output voltage alive with only 150 μ W quiescent power consumption. Fixed-frequency PWM operation ensures that the switching noise spectrum is confined to the 300kHz fundamental and its harmonics, allowing easy post-filtering noise reduction. Synchronizing to a 200kHz to 400kHz external clock will achieve even tighter noise-spectrum control.

Battery monitoring is provided by a 2-channel voltage-to-frequency type A/D converter. One channel is internally connected to the battery input, while the other channel is brought out for monitoring external voltages (AIN pin).

A latch is included for push-on/push-off control via a momentary pushbutton switch; otherwise, start-up can be automatic with battery installation. Upon power-up, an internal comparator monitors the output voltage to generate a power-good output (PWROK).

These two devices are identical, except for their low-side, N-channel MOSFET power switches: 0.5A for the MAX848, 1A for the MAX849.

Applications

Digital Cordless Phones
PCS Phones
Hand-Held Instruments
Palmtop Computers
Personal Communicators
Local 3.3V to 5V Supplies

Features

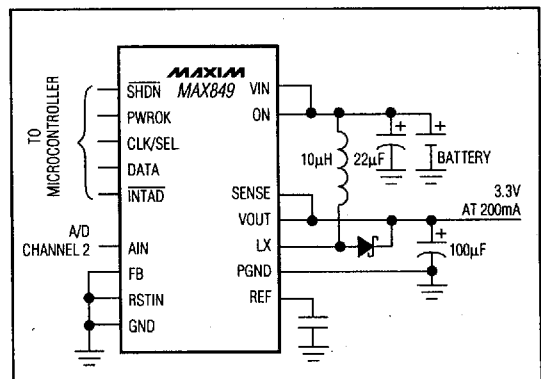
- ◆ 90% Efficiency from 1.1V Input
- ◆ Guaranteed 200mA Output from 1.1V Input (MAX849), (100mA for MAX848)
- ◆ Regulated 3.3V or Adjustable Output (2.7V to 5V)
- ◆ 0.8V to 5V Input Range
- ◆ Low-Power (0.15mW) Standby Mode
- ◆ Low-Noise Constant-Frequency Mode (300kHz)
- ◆ Synchronizable Switching Frequency (200kHz to 400kHz)
- ◆ 2-Channel A/D Converter with Serial Output
- ◆ Power-Good Function
- ◆ Integrated On/Off Functions

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX848CSE	0°C to +70°C	16 Narrow SO
MAX848C/D	0°C to +70°C	Dice*
MAX848ESE	-40°C to +85°C	16 Narrow SO
MAX849CSE	0°C to +70°C	16 Narrow SO
MAX849C/D	0°C to +70°C	Dice*
MAX849ESE	-40°C to +85°C	16 Narrow SO

*Contact factory for dice specifications.

Typical Operating Circuit



MAXIM

Maxim Integrated Products 4-173

Call toll free 1-800-998-8800 for free samples or literature.

■ 5876651 0011749 681 ■

MAX848/MAX849

4

1 to 3-Cell, High-Power, Low-Noise, Step-Up DC-DC Converters

MAX848/MAX849

Pin Configuration

