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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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EVALUATION KIT
AVAILABLE



Smallest, All-Internal MOSFET, 7-Channel DSC PMIC in Tiny 5mm x 5mm Thin QFN

MAX8680

General Description

The MAX8680 highly efficient complete power-supply solution is designed for digital still cameras (DSCs) and digital video cameras (DVCs). The device integrates seven on-chip power MOSFET DC-DC converters with up to 95% efficiency to power all critical power supplies in DSC systems. Each converter also features True Shutdown™, as well as internal compensation to minimize external component count. The seven DC-DC converter outputs are:

- Step-up synchronous-rectified DC-DC converter (SU). The MAX8680 is bootstrapped from V_{SU}.
- MAIN synchronous-rectified step-down DC-DC converter (M) for DSP I/O supply voltage.
- DDRZ synchronous-rectified step-down DC-DC converter (Z) for DSP DDR supply voltage.
- Low-voltage (down to 1V) synchronous-rectified step-down DC-DC converter (SD) for DSP core supply voltage.
- High-voltage, step-up DC-DC converter with current regulation and PWM dimming control (LEDBST) for white LEDs (WLED).
- High-voltage step-up DC-DC converter (CCDBST) for CCD imagers or positive LCD bias supplies.
- Transformerless inverting DC-DC converter (CCDINV) for CCD imagers or negative LCD bias supplies.

The MAX8680 has an independent/simultaneous power-on sequence of the CCDBST and CCDINV converters. For a preset power-on sequence of CCDBST before CCDINV, contact the factory.

The MAX8680 operates with 1-cell lithium-ion (Li+) battery, two-AA cell, or dual-battery designs and is available in a 5mm x 5mm, 40-pin thin QFN package. The MAX8680 operates over the -40°C to +85°C extended temperature range.

Applications

- DSCs and DVCs
- PDA's and Portable Media Players
- GPS Navigation Systems

Ordering Information

PART	TEMP RANGE	PIN-PACKAGE	PKG CODE
MAX8680ETL+	-40°C to +85°C	40 Thin QFN-EP*	T4055-2

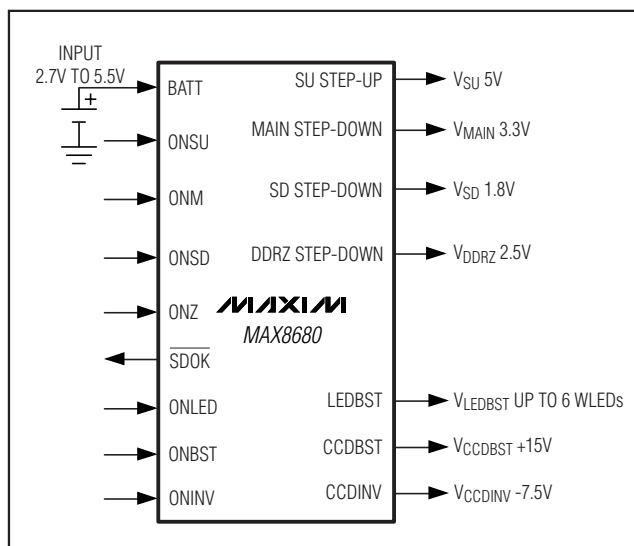
+Denotes a lead-free package.

*EP= Exposed paddle.

Features

- ◆ 95% Efficient Synchronous-Rectified DC-DC Converters
- ◆ 90% Efficient Boost-Buck Operation
- ◆ 85% Efficient DC-DC Converters for CCD, LCD, WLED, and/or OLED
- ◆ Internal Compensation on All Channels
- ◆ True Shutdown on All Step-Up Converters
- ◆ Overload Protection
- ◆ Soft-Start for Controlled Startup Current
- ◆ Dropout Operation (100% Duty Cycle) on Step-Down Converters
- ◆ Regulated Current Output for Up to 6 White LEDs
- ◆ PWM Dimming of WLED Current
- ◆ Adjustable LED Overvoltage Protection Up to 27V
- ◆ Transformerless Inverting Converter for CCD
- ◆ 2MHz Switching Frequency for Low-Voltage Channels
- ◆ ±2.5% Switching Frequency Accuracy
- ◆ 1µA Shutdown Supply Current
- ◆ Power-On Voltage Tracking for Core and Main Outputs
- ◆ All Internal Power MOSFETs
- ◆ SDOK Power-OK Indicator

Typical Operating Circuit



Pin Configuration appears at the end of data sheet.

True Shutdown is a trademark of Maxim Integrated Products, Inc.



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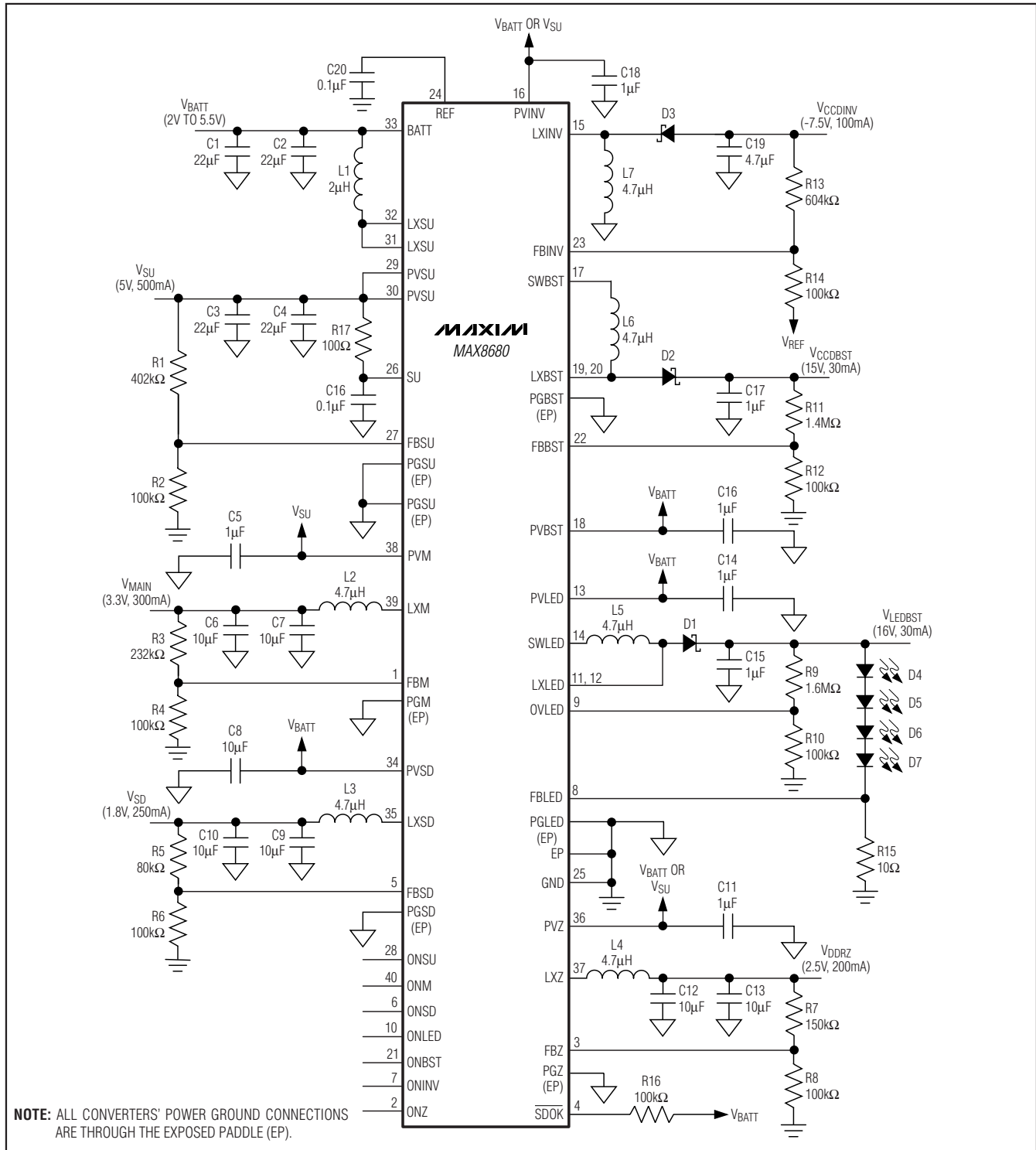


Figure 1. MAX8680 Typical Application Circuit (for Li+ Cell Design, Connect PVZ and PVINV to BATT; for Two-AA or Dual-Battery Design, Connect PVZ and PVINV to PVSU)