ADVANCE INFORMATION

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

7/92

EVALUATION KIT AVAILABLE

/VI/IXI/VI

Palmtop Computer and Flash Memory Power-Supply Regulators

MAX717-MAX721/EV Kit

General Description

The MAX717-MAX721 CMOS power-supply ICs create dual, regulated DC outputs for small, battery-operated microprocessor systems. Each device generates a main output (3V or 5V, selectable) and an auxiliary output for flash memory or PCMCIA (5V or 12V, selectable). Each device accepts up to three input voltages. Power can come from a main battery (two or three alkaline or NiCad), a lithium backup battery, or an unregulated DC source such as an AC-DC wall adapter.

The MAX717-MAX721 provide three improvements over prior-art devices. Physical size is reduced – the high switching frequencies (up to 0.5MHz) made possible by MOSFET power transistors allow for tiny (<5mm diameter) surface-mount magnetics. Efficiency is improved to 87% (10% better than with low-voltage regulators made in bipolar technology). And supply current is reduced to 60µA by CMOS construction and a unique constant-off-time pulse-frequency modulation (PFM) control scheme.

The MAX717-MAX721 differ only in shutdown and status functions and in the choice of a 3.0V or 3.3V main output (see *Device Options*).

For LCD-bias applications requiring an adjustable negative voltage, refer to the MAX722/MAX723 data sheet.

Applications

Palmtop Computers

Flash-Memory/PCMCIA Power Supplies

Portable Data-Collection Equipment

Medical Instrumentation
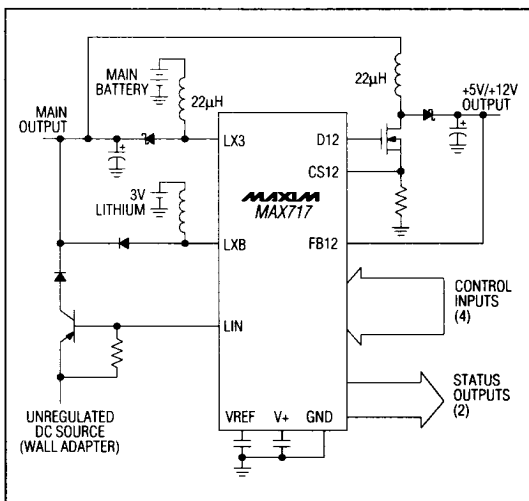
Portable Data Communicators

Pin Configurations

( ) ARE FOR MAX717.
MAX720/MAX721 on last page
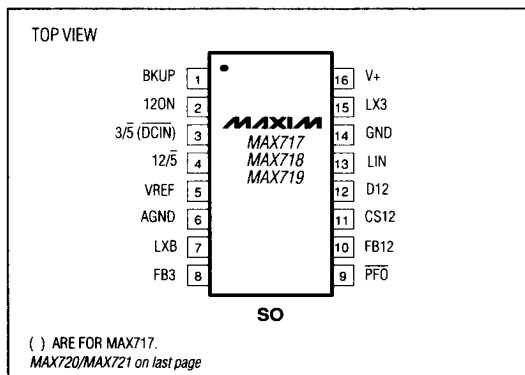
Features

♦ **Low 0.9V to 5.5V Battery Operating Range**

♦ **Unregulated 7V to 20V DC Input Range**

♦ **Dual Regulated Outputs**
  Main Output: 3.3V/5V
  Auxiliary Output: 5V/12V

♦ **87% Efficiency at 200mA**

♦ **Efficiency PRAM Keep-Alive: 80% at 1mA**

♦ **8W/in³ Power Density**

♦ **60µA Quiescent Current**

♦ **20µA Shutdown Mode with VREF Alive (MAX720/MAX721 only)**

♦ **500kHz Maximum Switching Frequency**

♦ **±1.5% VREF Tolerance Over Temp**

♦ **Detect Output Power Failures**

♦ **Detect Presence of AC Power**

♦ **16-Pin Narrow SO Packages**

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Typical Operating Circuit

/VI/IXI/VI _____ *Maxim Integrated Products*   **4-47**

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