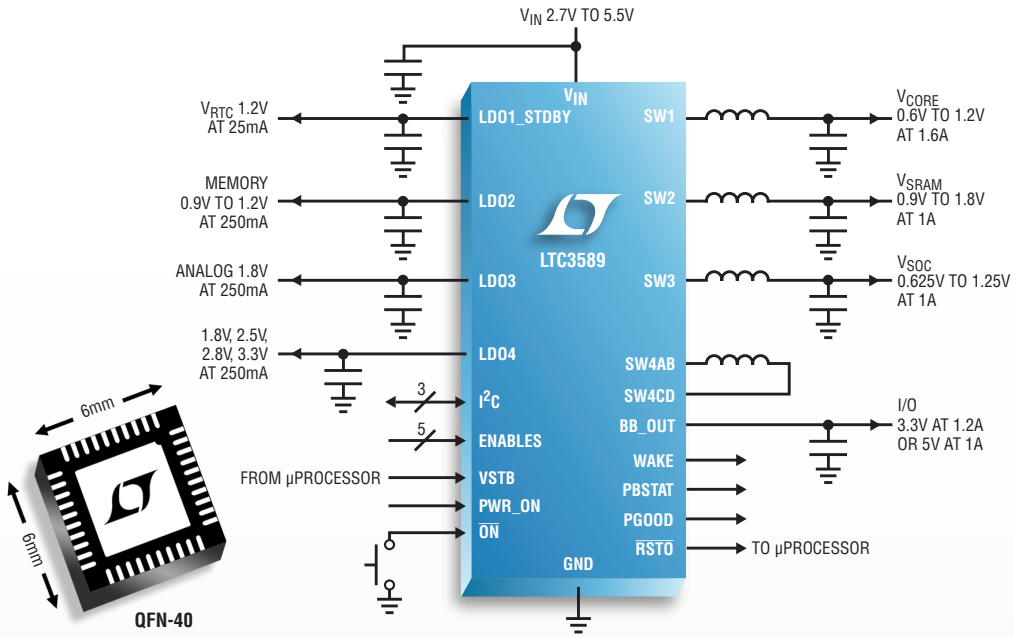
A PMIC for Modern Application Processors



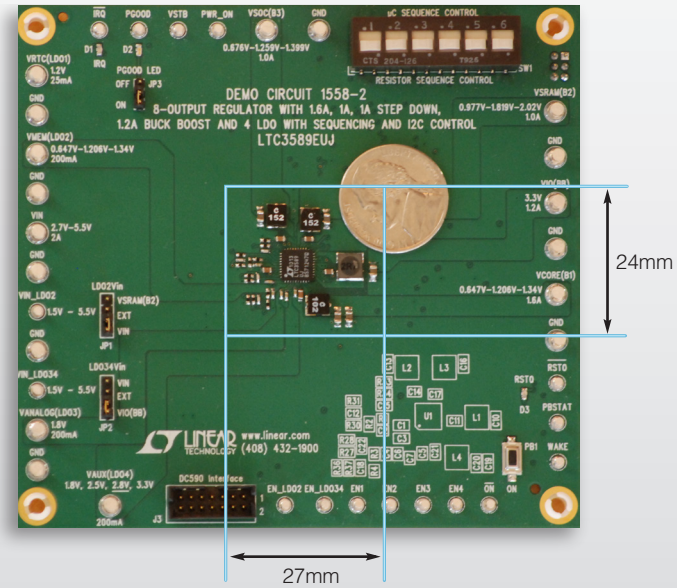
3 Bucks + Buck-Boost + 4 LDOs + I²C Control + Sequencing + Dynamic Voltage Scaling = A Complete Power Management Solution for Advanced Application Processor-Based Systems

The LTC®3589/-1/-2 is a complete power management solution for portable processors such as NXP i.MX, PXA, ARM, OMAP and other advanced portable microprocessor systems. The device features eight independent rails, with dynamic control and sequencing, in a compact QFN package. These rails supply power to the processor core, SDRAM, system memory, PC cards, always-on real-time clock (RTC) and a variety of other functions.

Features

- Triple I²C Adjustable High Efficiency Step-Down DC/DC Converters: 1.6A, 1A, 1A (1.6A, 1.2A, 1.2A on LTC3589-1/-2)
- High Efficiency 1.2A Buck-Boost DC/DC Converter
- Triple 250mA LDO Regulators
- Pushbutton On/Off Control with System Reset
- Flexible Pin-Strap Sequencing Operation
- I²C and Independent Enable Control Pins
- Power Good and Power-On Reset Outputs
- Dynamic Voltage Scaling and Slew Rate Control
- Selectable 2.25MHz or 1.12MHz Switching Frequency
- Always Alive 25mA LDO Regulator
- 8µA Standby Current
- 40-Pin 6mm × 6mm × 0.75mm QFN Package

LTC3589 Demo Board



Applications

- Supports NXP i.MX, Marvell PXA and Other Application Processors
- Handheld Instruments and Scanners
- Portable Industrial and Medical Devices
- Automotive Infotainment
- High End Consumer Devices
- Multirail Systems

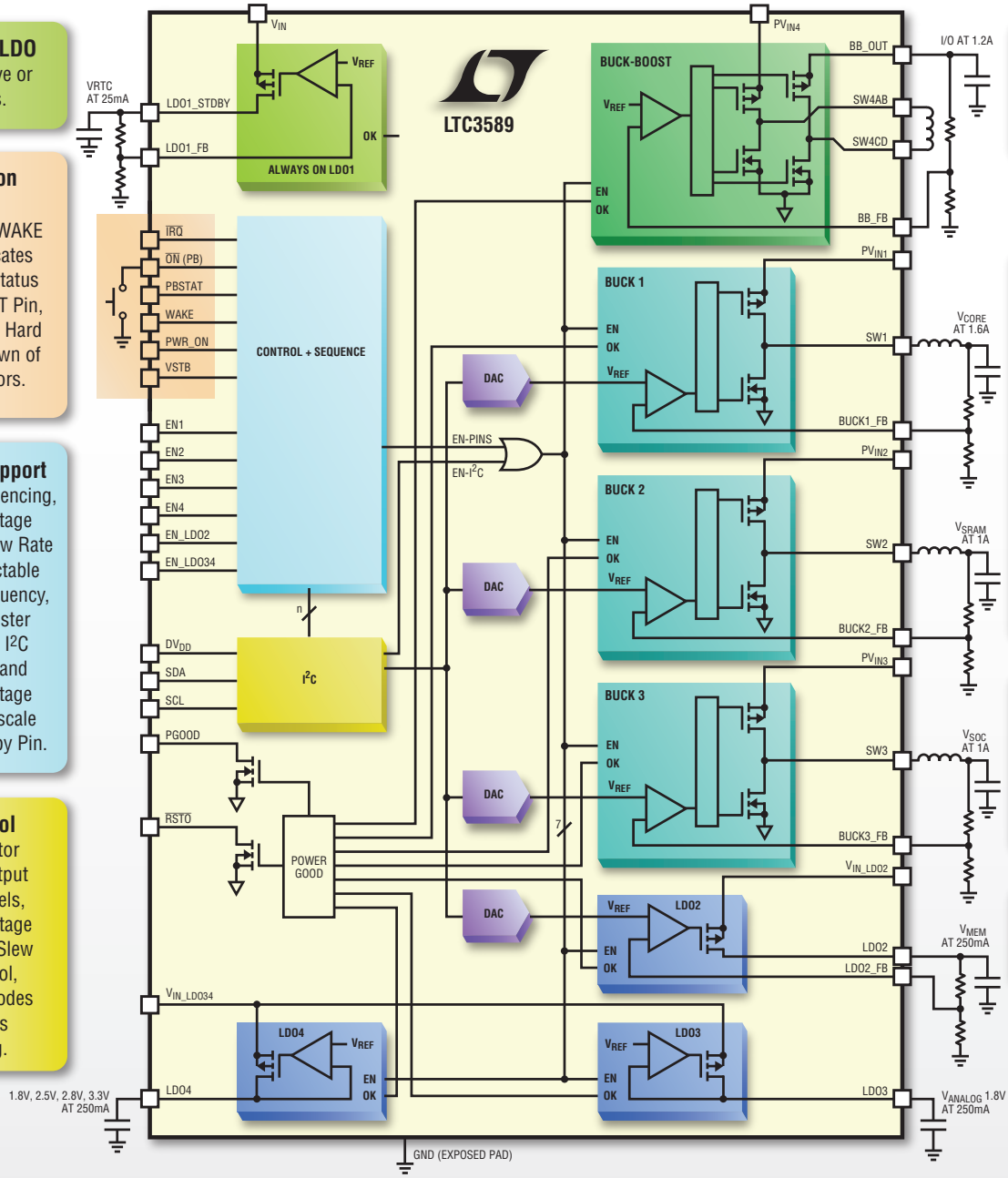
LINEAR TECHNOLOGY

Always-On LDO
For Keep Alive or RTC Rails.

Pushbutton Control
Activates the WAKE Output, Indicates Pushbutton Status via the PBSTAT Pin, and Initiates a Hard Reset Shutdown of the Regulators.

Direct µP Support
Power-Up Sequencing, Dynamic Voltage Scaling and Slew Rate Control, Selectable Switching Frequency, Marvell Register Mapping for I²C Commands and Dynamic Voltage Scaling, Freescale Voltage Standby Pin.

I²C Control
For Regulator Enables, Output Voltage Levels, Dynamic Voltage Scaling and Slew Rate Control, Operating Modes and Status Reporting.



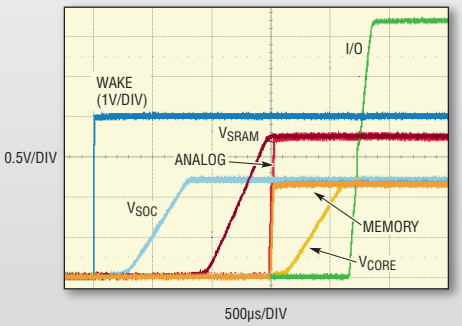
Sync Buck-Boost Regulator
For High Efficiency 3.3V or 5V I/O Rails.

Dynamic Output Voltage Scaling
For Entering Low Voltage Processor Standby Modes. Four Regulators Transition Between Two Programmed DAC Reference Voltages Controlled by the VSTB Pin or I²C Commands at 1 of 4 Programmable Slew Rates.

Sync Buck Regulators
For High Efficiency Rails Such as Core, SRAM and System On a Chip.

Low Noise LDOs
For Various Noise-Sensitive Rails

Configurable Start-Up Sequence



Dynamic Voltage Scaling with Adjustable Slew Rates for Bucks and LDO2