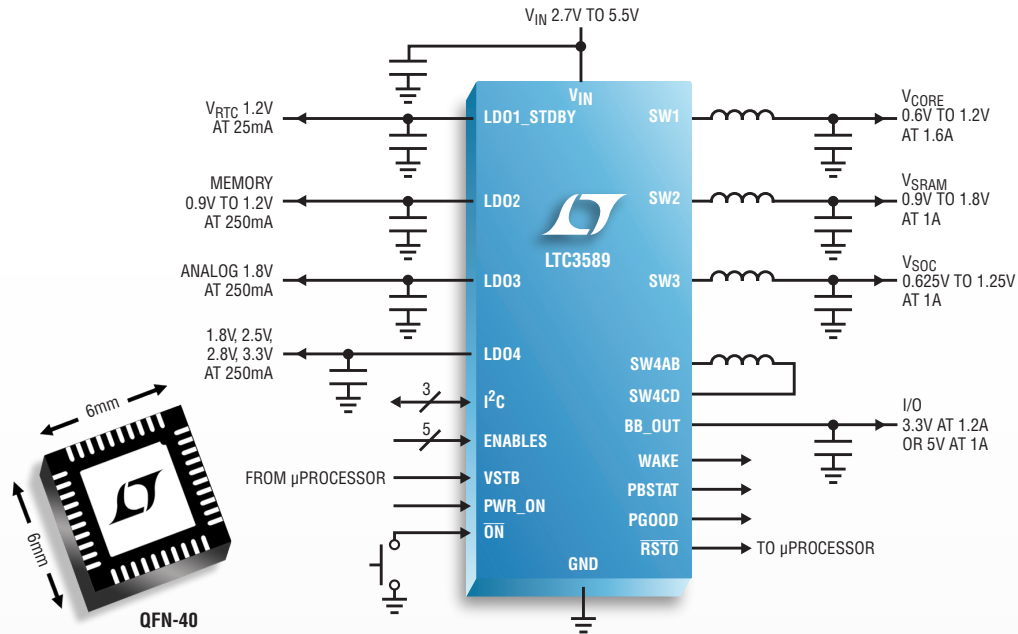


A PMIC for Modern Application Processors



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 is a complete power management solution for portable processors such as 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.

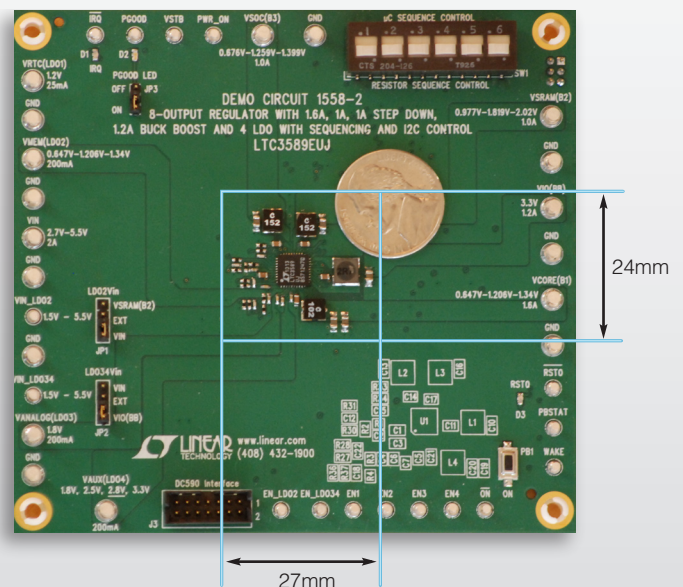
Features

- Triple I²C Adjustable High Efficiency Step-Down DC/DC Converters: 1.6A, 1A, 1A
- 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

Applications

- Supports Freescale 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

LTC3589 Demo Board



LT, LT, LTC, LTM, Linear Technology and the Linear logo are registered trademarks of Linear Technology Corporation. All other trademarks are the property of their respective owners.

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.

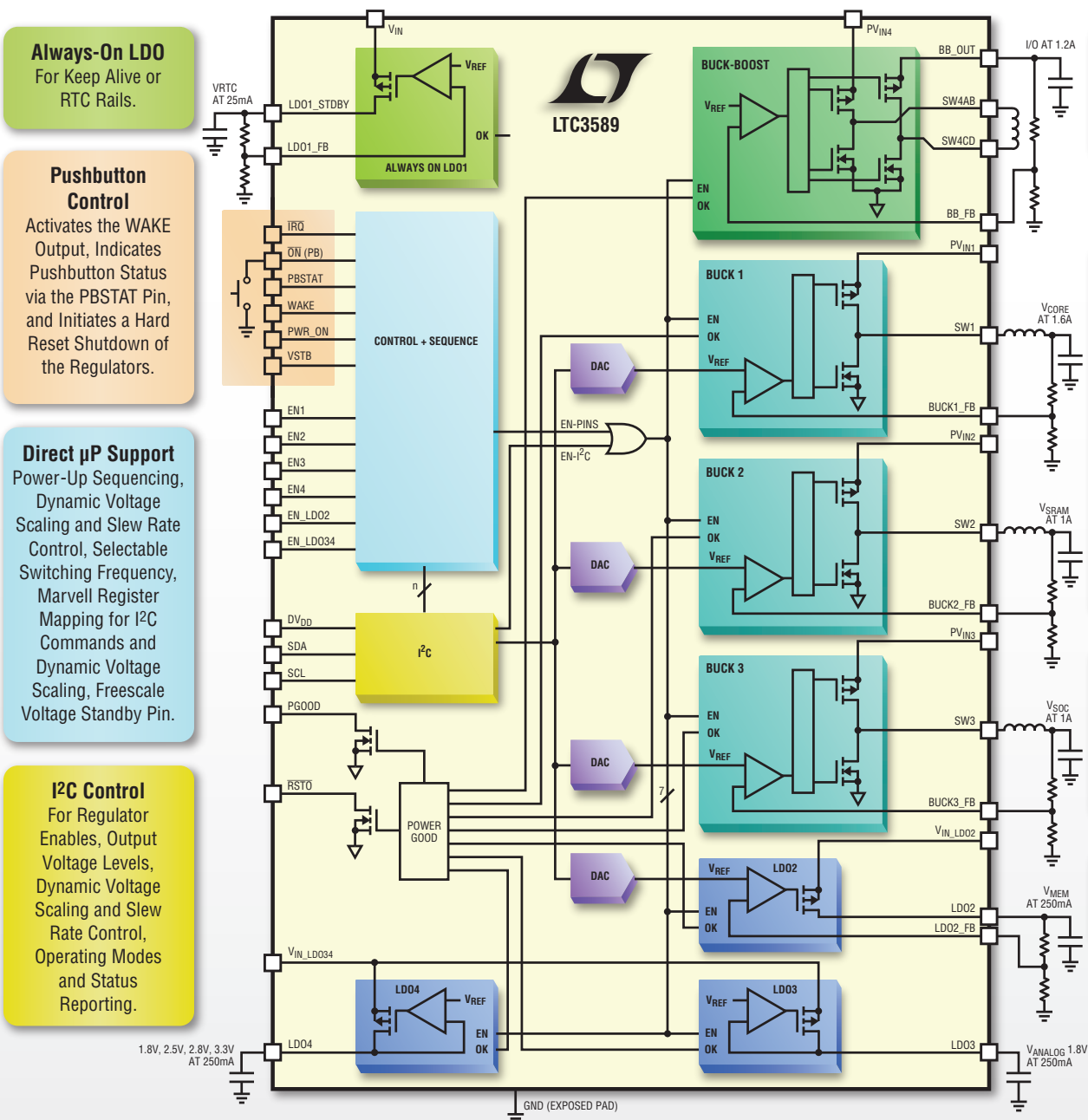
Activates the WAKE Output, Indicates Pushbutton Status via the PBSTAT Pin, and Initiates a Hard Reset Shutdown of the Regulators.

Direct μ P 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.

Direct μ P 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.

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.

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.

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.

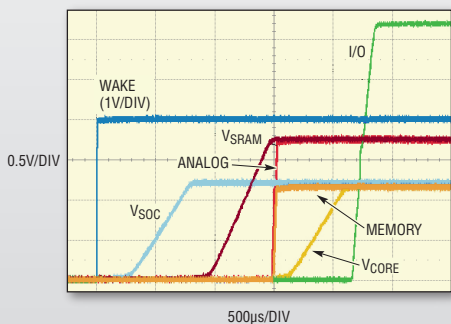
**Sync Buck
Regulators**
For High Efficiency
Rails Such as
Core, SRAM and
System On a Chip.

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

Low Noise LDOs
For Various
Noise-Sensitive Rails

Low Noise LDOs
For Various
Noise-Sensitive Rails

Configurable Start-Up Sequence



Dynamic Voltage Scaling with Adjustable Slew Rates for Bucks and LDO2

