

## FEATURES

- PMBus™ Serial Interface for Programming and Telemetry
- Digital PID Control Loop
- Output Voltage Range: 0.7V to  $V_{CC}$  – 0.9V
- Optional Resistor-Based PMBus Address, Output Voltage, Frequency and Current Limit Set
- 150kHz to 2MHz Switching Frequency
- DCR Current Sense with Temperature Compensation
- Adjustable Active Voltage Positioning (AVP) Control
- On-Chip Non-Volatile Memory (NVM) for Configuration Storage
- Soft-Start Into Pre-Biased Load
- Current Sharing
- 32-Lead (5mm × 5mm) QFN Package

## APPLICATIONS

- Digital Power System Management
- Intelligent Point-of-Load (POL) Power Regulation

## DESCRIPTION

The LTC®7510 is a digital DC/DC controller with onboard non-volatile memory and PMBus interface for real time reporting and control of point-of-load (POL) power management. Power supply sequencing, margining, turn-on/-off and fault detection are easily programmed via the PMBus interface.

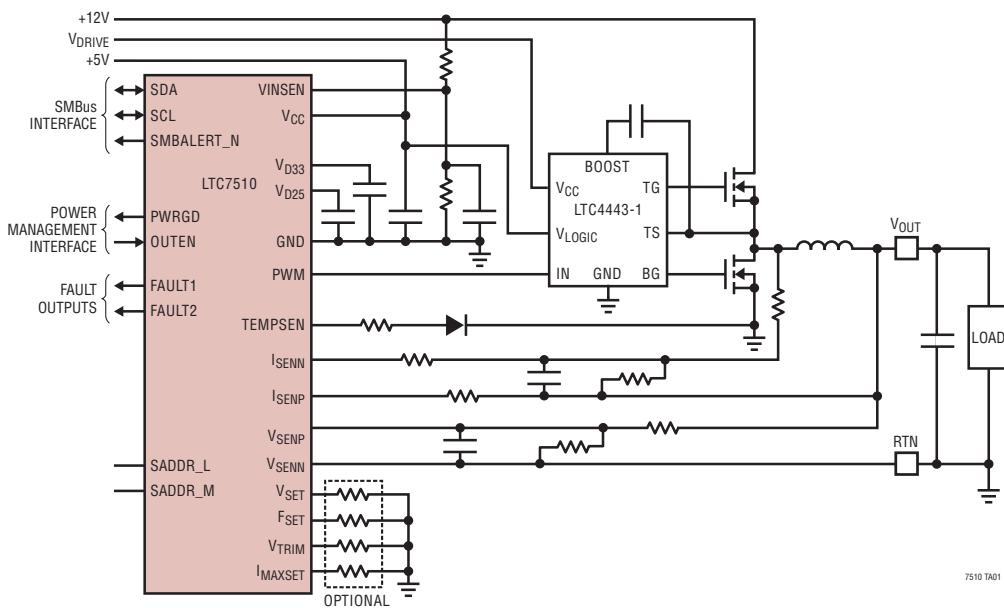
The LTC7510 uses a digital control loop which eliminates external compensation components. The controller supports current sharing of multiple ICs; up to four controllers can be synchronized for multiphase operation.

The LTC7510 provides superior accuracy through internal calibration to correct current sense error sources upon start-up and programmable temperature compensation provides accurate current sensing over temperature. The LTC7510 is available in a 32-lead (5mm × 5mm) QFN package.

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

## TYPICAL APPLICATION

DC/DC Controller with Read/Write PMBus Digital Interface



7510 TA01

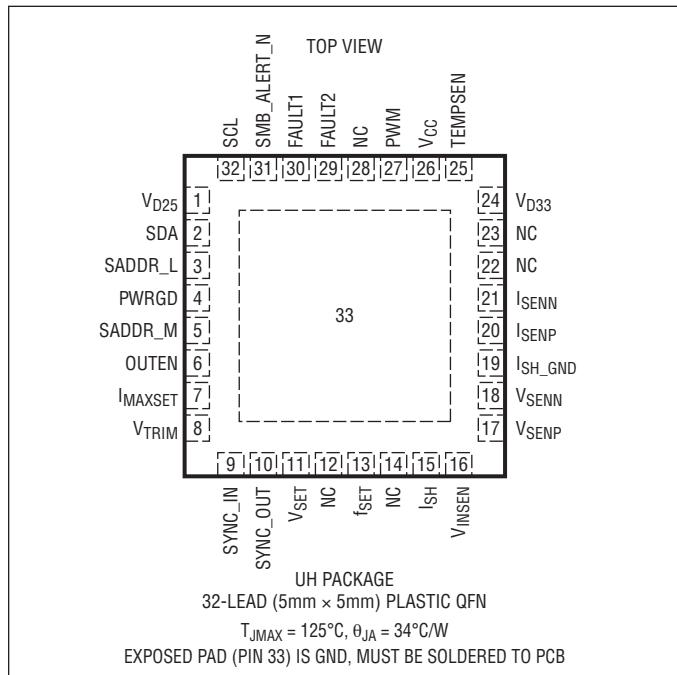
# LTC7510

## ABSOLUTE MAXIMUM RATINGS

(Note 1)

Supply Voltage ( $V_{CC}$ ) .....	-0.3V to 6V
$V_{SEN}$ , $V_{SENN}$ .....	-0.3V to 3V
$I_{SEN}$ , $I_{SENN}$ .....	-0.3V to $V_{CC}$
$OUTEN$ , $SYNC\_IN$ , $SYNC\_OUT$ , $SMBALERT\_N$ , $PWRGD$ , $PWM$ , $SDA$ , $SCL$ , $FAULT1$ ,	
$FAULT2$ , $SADDR\_M$ .....	-0.3V to 6V
All Other Pins .....	-0.3V to 4.25V
Differential Voltage	
$V_{SEN\_DIFF}$ ( $V_{SEN}$ – $V_{SENN}$ ) .....	-0.3V to 2.5V
Operating Temperature Range (Note 2)....	-40°C to 85°C
Junction Temperature .....	125°C
Storage Temperature Range.....	-65°C to 150°C
Write Temperature .....	0°C to 85°C
Read Temperature .....	-40°C to 85°C

## PIN CONFIGURATION



## ORDER INFORMATION

LEAD FREE FINISH	TAPE AND REEL	PART MARKING*	PACKAGE DESCRIPTION	TEMPERATURE RANGE
LTC7510EUH#PBF	LTC7510EUH#TRPBF	7510	32-Lead (5mm × 5mm) Plastic QFN	-40°C to 85°C
LTC7510IUH#PBF	LTC7510IUH#TRPBF	7510	32-Lead (5mm × 5mm) Plastic QFN	-40°C to 85°C

Consult LTC Marketing for parts specified with wider operating temperature ranges. \*The temperature grade is identified by a label on the shipping container.  
Consult LTC Marketing for information on non-standard lead based finish parts.

For more information on lead free part marking, go to: <http://www.linear.com/leadfree/>

For more information on tape and reel specifications, go to: <http://www.linear.com/tapeandreel/>