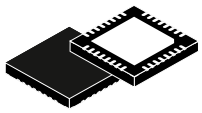
L99LD02

Dual-phase boost DC/DC controller for automotive applications

Data brief



QFN-32L

GADG0211171636PS

Features

- AEC-Q100 qualified
- General
  - 32 bit ST SPI communication v4.1
  - Stand-alone operation supported
  - QFN-32L 5x5 with exposed pad
  - Timeout watchdog and limp home function
- Boost section
  - Wide input range: 3 V to 28 V operation
  - Adjustable boost output voltage - up to 80 V
  - 10 V Gate Driver supply for Standard-Level MOSFETs
  - Gate driver supply option from boost output
  - Internal 10 V LDO regulator
  - Fixed frequency architecture - programmable by SPI
  - Peak current mode control with programmable Input Current Limitation
  - Constant voltage regulation
  - Adjustable Slope Compensation
  - Soft start
  - Multi-phase operation - up to 4-phase supported
  - SYNC I/O pin for multi-phase operation support
  - Adjustable clock distribution and phase shift
  - Programmable error amplifier gain
  - Fully configurable in limp home
  - Protection and diagnostic
  - Boost functionality guaranteed in Cold Cranking
  - Input overcurrent protection - programmable by SPI
  - Thermal warning
  - Thermal shutdown
  - Overvoltage protection (OVP)

Applications

- LED module applications

Description

The L99LD02 is a two phase, constant frequency, current mode boost controller that drives N-channel power MOSFETs.

Multi-phase operation is supported by SYNC I/O pin, providing the phase shifted clock signal. The boost controllers of more devices can be stacked, in order to operate in multi-phase for high power applications.

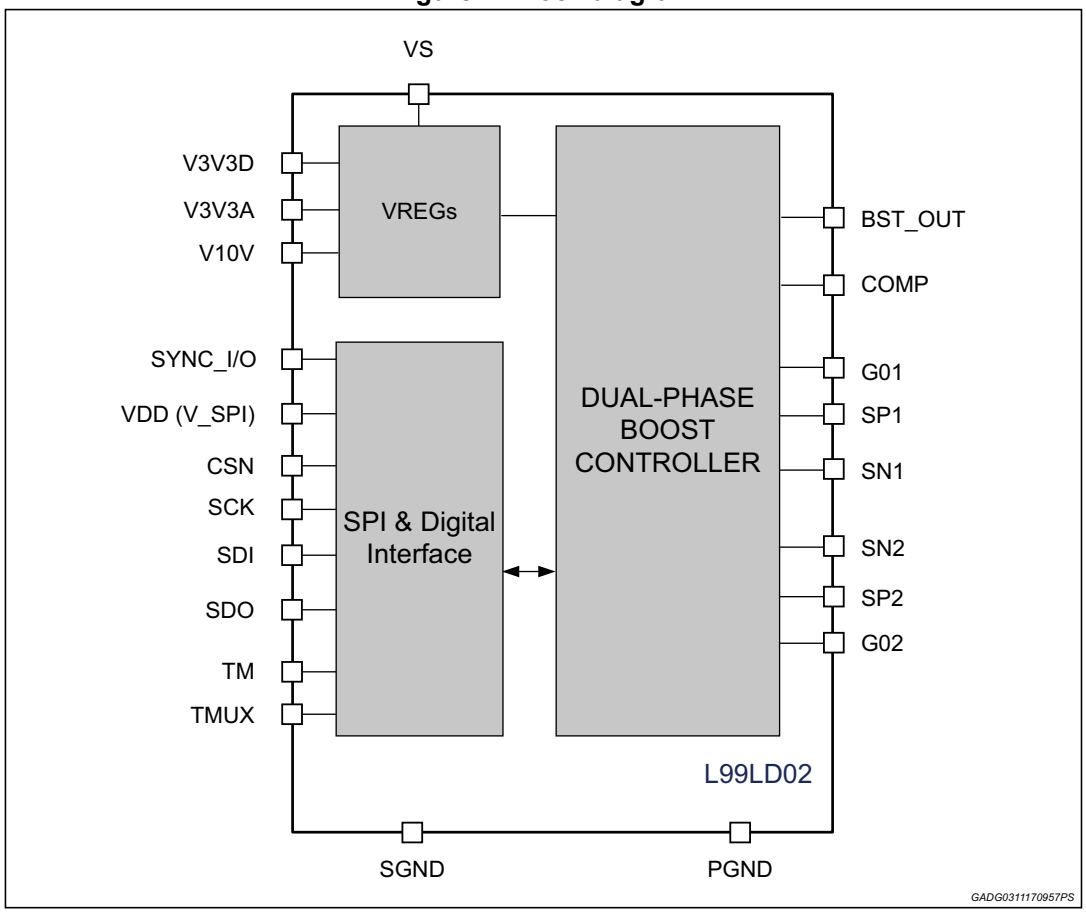
Multi-phase operation reduces system filtering capacitance and inductance requirements.

The operating frequency is configurable via SPI between 100 kHz and 470 kHz.

Other features include an internal 10 V LDO for the gate drivers, soft-start, gate driver supply option from boost output and pre-configurable operation in limp home.

1 Block diagram

Figure 1. Block diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
07-Nov-2017	1	Initial release.