

16 V, 12 A, High Frequency Synchronous Buck Converter

Features

- Switching Frequency up to 1 MHz
- 94% Peak Efficiency
- Proprietary S-Loop® Control Architecture
- All Output Ceramic Capacitor Solution
- Adaptive COT Architecture for Fast Load Transient
- Wide Input Voltage Range from 4.5 V to 16 V
- Wide Output Voltage Range from 0.6 V to 5.5 V
- Programmable Current Limit
- Internal LDO for MOSFET Driver Bias
- Output Tracking with External Reference Input
- UVLO/OCP/OVP/UVP/OTP Protections
- Pre-bias Startup with Programmable Soft Start Time
- Diode Emulation Mode for Light Load Efficiency Boost
- Ultra-compact 4 mm x 3 mm QFN package

Applications

- Enterprise Server Point of Load Converter
- Telecom and Networking DC/DC Converter
- Industrial DC/DC Converter

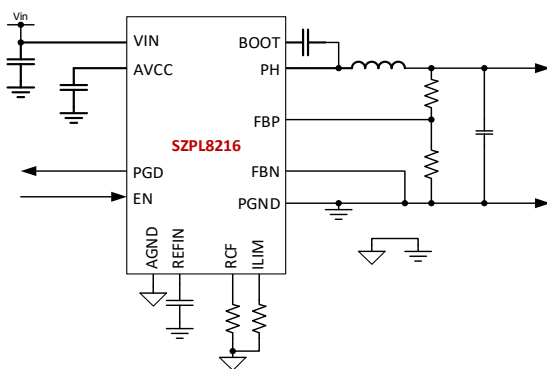


Figure 1: Application Circuit for SZPL8216A

Product Description

The SZPL8216A is a fully integrated high efficiency synchronous buck converter. It optimizes both switching and conduction losses at high switching frequency above 1 MHz to deliver up to a 12 A output current over a wide input and output voltage range.

The SZPL8216A employs Silanna's proprietary S-Loop™ control architecture that delivers fast transient performance without external compensation. The switching frequency can operate as high as 1 MHz to minimize passive filter size.

The SZPL8216A integrates protection features including UVLO, OCP, OVP, UVP, and thermal shutdown.

The SZPL8216A is available in the compact 4 mm x 3 mm QFN package and delivers high power density with a minimum number of external components.

The device is available in three different versions with differences in VREF, fault operation mode, and AVCC voltage.

Part Number	Fault	VREF	AVCC
SZPL8216A-AE34	Latched	0.9	3.3
SZPL8216A-BE34	Hiccup	0.6	3.3
SZPL8216A-CE34	Hiccup	0.6	5.0

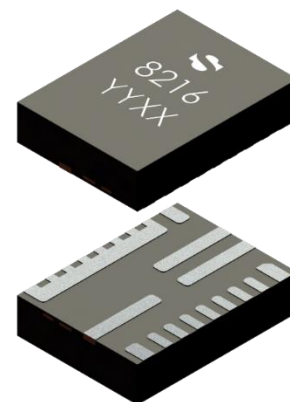


Figure 2: Device Package Image

Pin Out

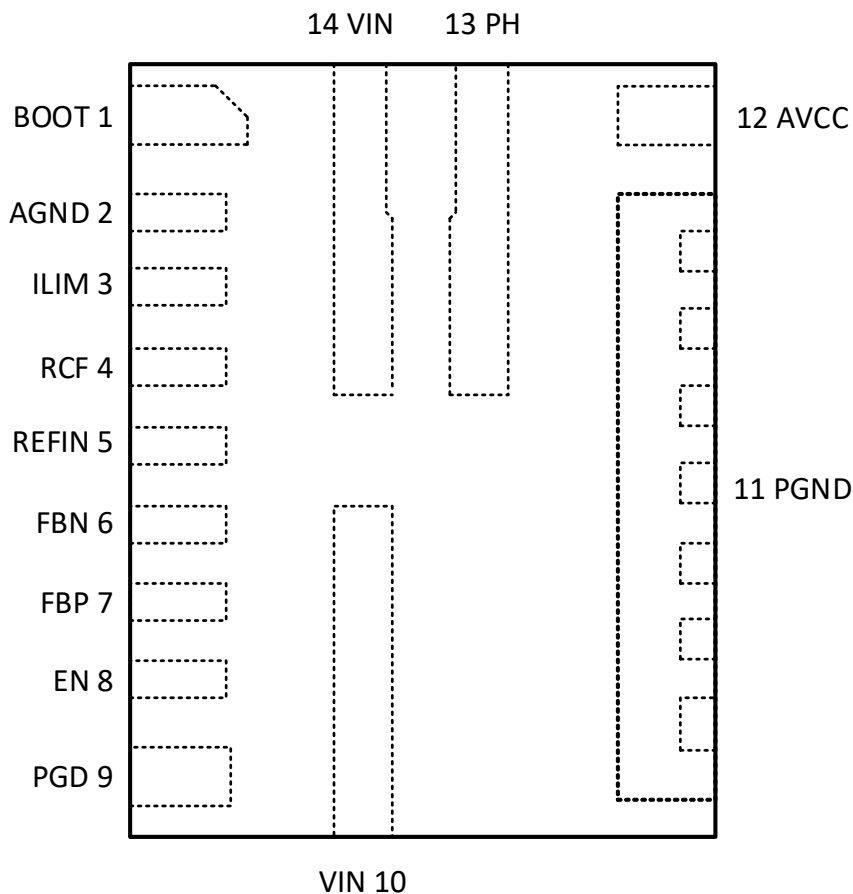


Figure 3: Device Bottom View

Pin Definitions

Pin #	Name	Description
1	BOOT	High-side driver supply
2	AGND	Return of internal analog circuitry
3	ILIM	Connect a resistor to AGND to set valley current limit
4	RCF	Connect a resistor to AGND to set switching frequency and DCM/CCM operation
5	REFIN	Connect to a capacitor to FBN, or to an external reference for output voltage tracking
6	FBN	Output remote sense return
7	FBP	Output remote sense feedback
8	EN	Enable input to initiate soft-start
9	PGD	Power good output with open drain
10	VIN	Input to the power stage and internal LDO
11	PGND	Power ground of the power stage
12	AVCC	Internal LDO output. 3.3 V for -A and -B device versions. 5.0 V for -C device version.
13	PHASE	Switch node of power stage
14	VIN	Input to the power stage and internal LDO

Product Ordering Information

Part Number	Package	Fault Response	Reference Voltage	AVCC	Max. Output Current
SZPL8216A-AE34	QFN (3 mm x 4 mm)	Latch off	900 mV	3.3 V	12 A
SZPL8216A-BE34	QFN (3 mm x 4 mm)	Hiccup	600 mV	3.3 V	12 A
SZPL8216A-CE34	QFN (3 mm x 4 mm)	Hiccup	600 mV	5 V	12 A



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