

Product Overview

FAN9611: Power Factor Controller (PFC), Interleaved Dual CrCM

For complete documentation, see the data sheet.

The FAN9611 interleaved dual Boundary-Conduction-Mode (BCM) Power-Factor-Correction (PFC) controller operates two parallel-connected boost power trains 180° out of phase. Interleaving extends the maximum practical power level of the control technique from about 300 W to greater than 800 W. Unlike the continuous conduction mode (CCM) technique often used at higher power levels, BCM offers inherent zero-current switching of the boost diodes, which permits the use of less expensive diodes without sacrificing efficiency. Furthermore, the input and output filters can be smaller due to ripple current cancellation and effective doubling of the switching frequency. The converters operate with variable frequency, which is a function of the load and the instantaneous input / output voltages. The switching frequency is limited between 16.5 kHz and 525 kHz. The Pulse Width Modulators (PWM) implement voltage-mode control with input voltage feedforward. When configured for PFC applications, the slow voltage regulation loop results in constant on-time operation within a line cycle. This PWM method, combined with the BCM operation of the boost converters, provides automatic power factor correction. The controller offers bias UVLO of 10 V / 7.5 V, input brownout, over-current, open-feedback, output over-voltage, and redundant latching over-voltage protections. Furthermore, the converters' output power is limited independently of the input RMS voltage. Synchronization between the power stages is maintained under all operating conditions.

Features

- Sync-Lock™ Interleaving Technology for 180° Out-of-Phase Synchronization Under All Conditions
 - Automatic Phase Disable at Light Load
 - Dead-Phase Detect Protection
 - 2.0 A Sink, 1.0 A Source, High-Current Gate Drivers
 - High Power Factor, Low Total Harmonic Distortion
 - Voltage-Mode Control with (VIN)2 Feedforward
 - Closed-Loop Soft-Start with User-Programmable Soft-Start Time for Reduced Overshoot
 - Minimum Restart Frequency to Avoid Audible Noise
 - Maximum Switching Frequency Clamp
 - Brownout Protection with Soft Recovery
- For more features, see the data sheet

Applications

- AC-DC Merchant Power Supply
- LCD TV
- PDP TV
- Desktop PC

Part Electrical Specifications

Product	Compliance	Status	PFC Mode	Frequency Operation	Control Mode	Topology	f _{sw} Typ (kHz)	V _{cc} Max (V)	Drive Cap. (mA)	UVLO (V)	Latch	UVP	Inhibition	Package Type
FAN9611MX	Pb-free	Active	CrCM/BCM	Variable	Voltage Mode	Step-Up	Variable	20	1000 / 2000	10	Yes	Yes	No	SOIC-16

For more information please contact your local sales support at www.onsemi.com.

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