BP87112

Integrated Flyback Switcher IC

Description

The BP87112 is a current mode PWM switcher IC with high performance, high integration and low standby consumption.

The BP87112 integrates a 650 V MOS-bipolar composite power switch and a high-voltage current source which eliminates the startup resistors. It supports CCM and DCM operations. At full load, the IC operates in 65 kHz fixed frequency. When the load goes down, it operates in Green Mode while the oscillator frequency is controlled by the feedback voltage on the FB pin. At no load condition, the IC operates in burst mode to reduce the standby power.

Frequency modulation and intelligent driving circuit are built in, which helps to achieve excellent EMI performance. Internal slope compensation improves the system stability.

The BP87112 features comprehensive protections, including cycle-by-cycle current limit, output over voltage protection and under voltage protection, VCC over voltage protection and under voltage lock out, and over temperature protection.

The BP87112 is available in ESOP-6 package.

ESOP-6 package

Features

- Less than 75 mW no-load consumption
- Integrated 650 V composite power switch
- High-voltage current source eliminates startup resistors
- Internal 4 ms soft start
- Fixed 65 kHz frequency at heavy load
- Green mode at light load
- Frequency modulation and intelligent driving for excellent EMI
- Audible noise free operation
- Built-in slope compensation
- Built-in leading-edge blanking (LEB)
- Comprehensive protections
  - Cycle-by-Cycle current limit
  - Output over voltage protection (OVP)
  - Output under voltage protection (UVP)
  - Constant output power
  - VCC over voltage protection (VCC OVP)
  - VCC under voltage lock out (UVLO)
  - Over temperature protection (OTP)

Applications

- QC / USB PD Chargers
- AC/DC Adapters
- Standby Power Supply

Typical Application

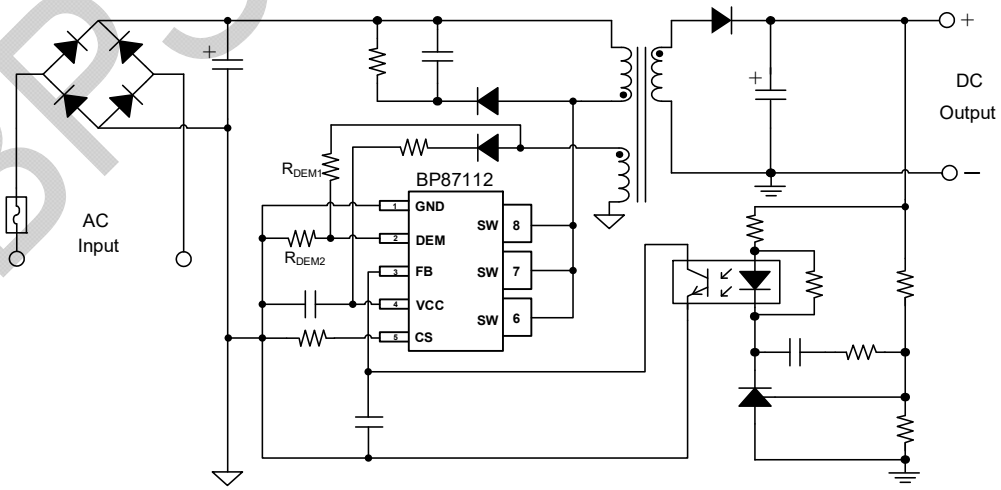
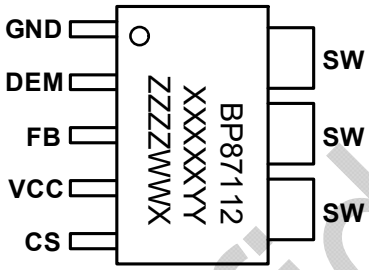


Figure 1. Typical Application Circuit

Ordering Information

Part Number	Package	Packing	Marking
BP87112	ESOP-6	Tape & Reel 5,000 pcs/Reel	BP87112 XXXXXYY ZZZZWWX

Pin Configuration and Marking Information



BP87112: Part number
XXXXXYY: Lot code
ZZZZ: Internal code
WW: Week code
X: Reserved code

Figure 2. ESOP-6 pin configuration

Pin Functions

Pin NO.	Pin Name	Description
1	GND	Ground reference for the VCC and FB pins
2	DEM	Output voltage sense for OVP and UVP by detecting the auxiliary winding voltage
3	FB	Output voltage feedback. Connect to the collector of the opto-coupler
4	VCC	Power supply pin of the IC. An external bypass capacitor(≥4.7 μF) to GND is recommended
5	CS	Current sense input
6/7/8	SW	Collector of the internal power switch. Input of the high-voltage current source.

Recommended Output Power

Part Number	Output Power（90～265VAC）(Note 1)
BP87112	20W

Note 1: Lowest Maximum continuous power in a typical non-ventilated enclosed adapter, measured at 45 °C ambient.

Disclaimer

The information provided in this datasheet is believed to be accurate and reliable. However, Bright Power Semiconductor (BPS) reserves the right to make changes at any time without prior notice.

No license, to any intellectual property right owned by BPS or any other third party, is granted under this document. BPS provides information in this datasheet "AS IS" and with all faults, and makes no warranty, express or implied, including but not limited to, the accuracy of the information provided in this datasheet, merchantability, fitness of a specific purpose, or non-infringement of intellectual property rights of BPS or any other third party. BPS disclaims any and all liabilities arising out of this datasheet or use of this datasheet, including without limitation consequential or incidental damages.