

GENERAL DESCRIPTION

OB2225M is a high performance, high precision and low cost PWM Power switch for non-isolated buck and buck-boost application. It combines a dedicated current mode PWM controller with a high voltage power Bipolar in SOP8 package. Its built-in error amplifier is optimized for good overshoot and dynamic response for low cost and component count. With precise inner resistor divider, precise reference of EA, constant voltage regulation of 12V at universal AC input can be guaranteed. Frequency reduction and burst mode control is implemented for high efficiency at light load. Good EMI performance is achieved with On-Bright proprietary frequency shuffling technique and soft base driver design. Low startup current and low operating current contribute to a reliable power on startup and low standby power consumption with OB2225M. Constant power operation is supported at over load application with OB2225M, which makes it suitable for small home appliance application where instant large power consumption is required such as start-up of a fan.

OB2225M offers power on soft start control and protection coverage with auto-recovery features including cycle-by-cycle current limiting, output short circuit protection, on-chip Over Temperature Protection (OTP), VDD Over Voltage Protection (OVP), and VDD Under Voltage Lockout Protection (UVLO).

The tone energy at below 20KHz is minimized in the design so that audio noise is eliminated during operation.

OB2225M is offered in SOP8 package.

FEATURES

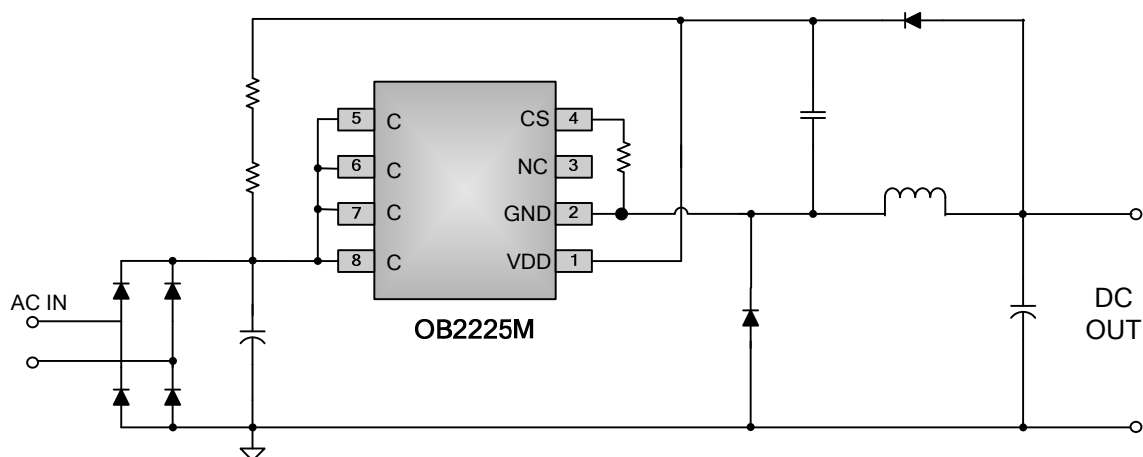
- Universal AC input range and 12V output voltage
- Constant power mode operation at over load application
- Low cost and less BOM for buck and buck-boost applications
- Current mode control
- 40kHz (typical) maximum switching frequency
- Frequency-reduction and burst mode control for high efficiency
- Frequency shuffling for EMI improvement
- Power on soft-start
- Built-in Leading Edge Blanking (LEB)
- Cycle-by-cycle current limiting
- Output short-circuit protection
- VDD Under Voltage Lockout with Hysteresis
- VDD OVP
- On-Chip OTP

APPLICATIONS

Low power AC/DC offline SMPS for

- Small home appliance
- Linear regulator/RCC replacement

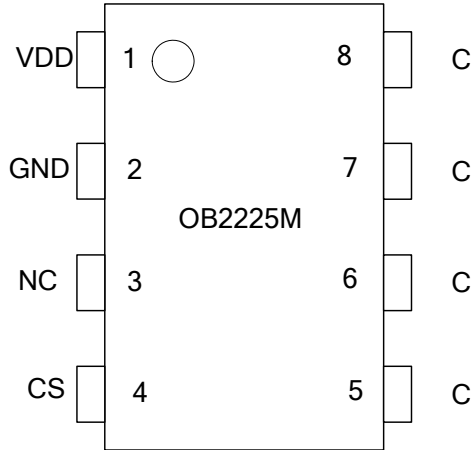
TYPICAL APPLICATION



GENERAL INFORMATION

Pin Configuration

The pin map is shown as below for SOP8



Ordering Information

Part Number	Description
OB2225MCP	SOP8, Pb-free, Tube
OB2225MCPA	SOP8, Pb-free, T&R

Package Dissipation Rating

Package	R θ JA (°C/W)
SOP8	90

Note: C Pin Connected 66mm² PCB copper clad.

Output Power Table

Topology	90~264Vac (open frame)	176~264Vac (open frame)
Buck/Buck-Boost	250mA	300mA

Note: Maximum continuous power with drain pattern connected 100mm² PCB copper clad, at 50°C ambient.

Topology	90~264Vac (open frame)	176~264Vac (open frame)
Buck/Buck-Boost	200mA	250mA

Note: Maximum continuous power with drain pattern connected 100mm² PCB copper clad, at 85°C ambient.

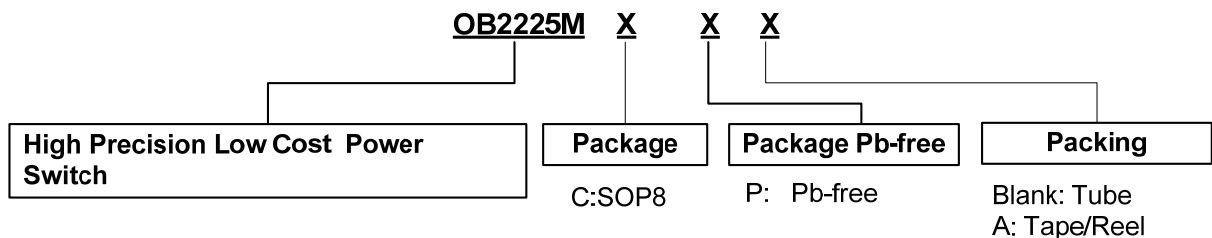
Absolute Maximum Ratings

Parameter	Value
C-B Voltage	700V
VDD Voltage	-0.3 to 20V
CS Input Voltage	-0.3 to 7V
Min/Max Operating Junction Temperature T _J	-40 to 150 °C
Operating Ambient Temperature T _A	-40 to 85 °C
Min/Max Storage Temperature T _{stg}	-55 to 150 °C
Lead Temperature (Soldering, 10secs)	260 °C

Note: Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute maximum-rated conditions for extended periods may affect device reliability.

Recommended Operating Condition

Symbol	Parameter	Range
VDD	VDD Supply Voltage	5.5 to 12V



Marking Information



Y: Year Code
 WW: Week Code(01-52)
 ZZ: Lot Code
 C: SOP8 Package
 P: Pb-free Package
 S: Internal Code(Optional)

TERMINAL ASSIGNMENTS

Pin Num	Pin Name	I/O	Description
1	VDD	I	Power Supply and Output Voltage Feedback
2	GND	P	Ground
3	NC	NC	It should be floating or connect ground during normal operation state
4	CS	I	Current sense input
5/6/7/8	C	O	Power bipolar collector pins.

