

## GENERAL DESCRIPTION

OB2225R 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 Mosfet 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 gate driver design. Low startup current and low operating current contribute to a reliable power on startup and low standby power consumption with OB2225R.

OB2225R 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), Over Loading Protection(OLP) 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.

OB2225R is offered in SOP8 package.

## FEATURES

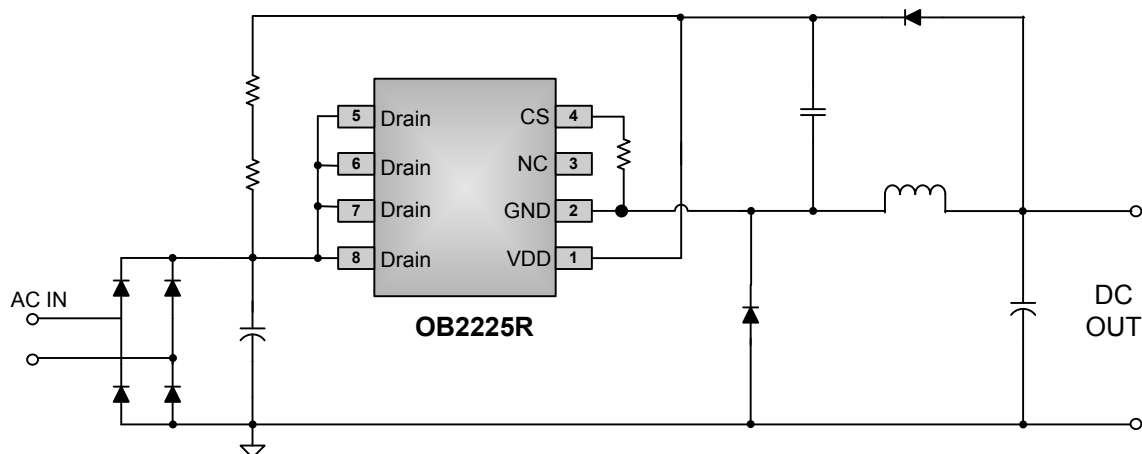
- Universal AC input range and 12V output voltage
- Low cost and less BOM for buck and buck-boost applications
- Current mode control
- 40kHz (typical) maximum switching frequency
- Frequency-reduction and burst mode control for high efficiency
- Frequency shuffling for EMI improvement
- Power on soft-start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

## APPLICATIONS

Low power AC/DC offline SMPS for

- Small home appliance
- Linear regulator/RCC replacement

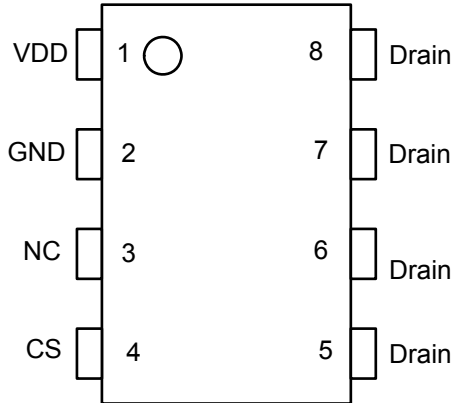
## TYPICAL APPLICATION



### GENERAL INFORMATION

#### Pin Configuration

The pin map is shown as below for SOP8



#### Ordering Information

Part Number	Description
OB2225RCP-H	SOP8, Halogen-free, Tube
OB2225RCPA-H	SOP8, Halogen-free, T&R

#### Package Dissipation Rating

Package	R $\theta$ JA (°C/W)
SOP8	90

**Note:** Drain Pin Connected 100mm<sup>2</sup> PCB copper clad.

#### Recommended Operating Condition

Symbol	Parameter	Range
VDD	VDD Supply Voltage	8 to 12V

#### Output Power Table

Topology	90~264Vac (open frame)	176~264Vac (open frame)
Buck / Buck-Boost	500mA	500mA

**Note:** Maximum continuous power with drain pattern connected 100mm<sup>2</sup> PCB copper clad, at 50°C ambient.

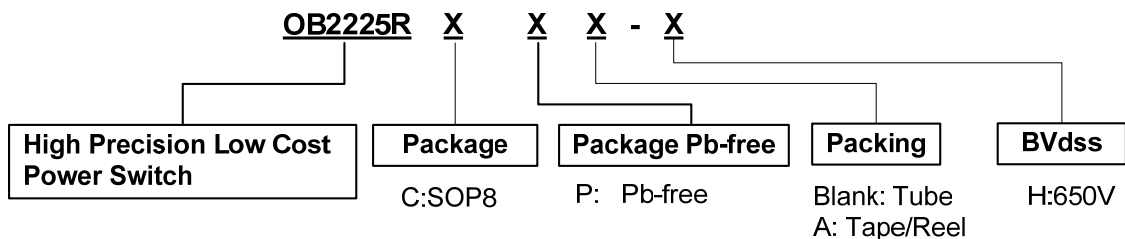
Topology	90~264Vac (open frame)	176~264Vac (open frame)
Buck / Buck-Boost	400mA	400mA

**Note:** Maximum continuous power with drain pattern connected 100mm<sup>2</sup> PCB copper clad, at 85°C ambient.

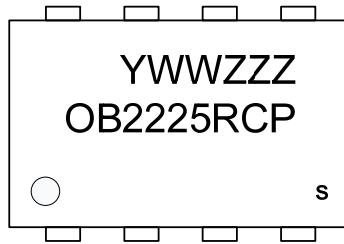
#### Absolute Maximum Ratings

Parameter	Value
Drain Voltage(off state)	-0.3V to Bvdss
VDD Voltage	-0.3 to 20V
CS Input Voltage	-0.3 to 7V
Min/Max Operating Junction Temperature T <sub>J</sub>	-40 to 150 °C
Operating Ambient Temperature T <sub>A</sub>	-40 to 85 °C
Min/Max Storage Temperature T <sub>stg</sub>	-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.



### Marking Information



Y:Year Code  
 WW:Week Code(01-52)  
 ZZZ:Lot Code  
 C:SOP8 Package  
 P:Green Package(Halogen-free)  
 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	Drain	O	Power Mosfet Drain pins.

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