



晶丰明源半导体

# BP9938X

## Non-isolated Buck Offline LED Driver

### Description

BP9938X is a high precision Buck constant current LED driver. The device operates in critical conduction mode and is suitable for 85Vac~265Vac universal input offline LED lighting.

The BP9938X integrates a 500V power MOSFET. With proprietary MOSFET driving technique. It doesn't need VCC capacitor and startup resistor. It can achieve excellent constant current performance with very few external components, so the system cost and size are minimized.

BP9938X utilizes proprietary current control method. It can achieve precise output current and excellent line regulation. The driver operates in critical conduction mode, the output current does not change with the inductance and output voltage.

The BP9938X offers LED short circuit protection and thermal regulation function to improve the system reliability.

### Typical Application

### Features

- No VCC Capacitor and Startup Resistor
- Internal 500V Power MOSFET
- Integrated HV JFET for IC Power Supply
- No Auxiliary Winding
- Critical Conduction Mode Operation
- $\pm 5\%$  LED Output Current Accuracy
- LED Short Protection
- VCC Under Voltage Protection
- Thermal Regulation Function
- Available in SOT33-4 Package

### Applications

- LED Candle Light
- LED Bulb
- Other LED Lighting

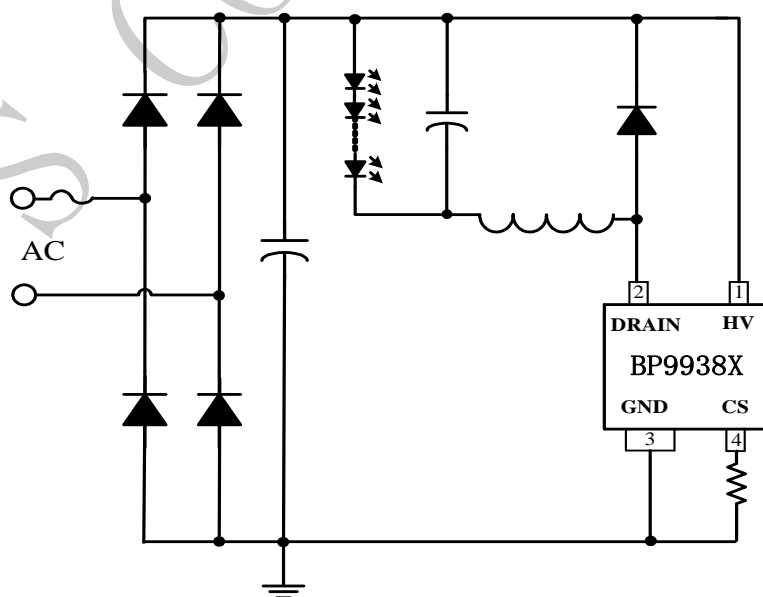


Figure 1. Typical application circuit for BP9938X

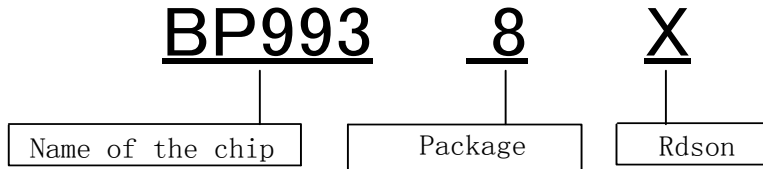


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Name of the chip



## Ordering Information

Part Number	Package	Operating Temperature	Packing Method	Marking
BP9938X	SOT33-4	-40 °C to 105 °C	Tape 15,000 Pcs/Reel	BP9938X FGHWWX

## Pin Configuration and Marking Information

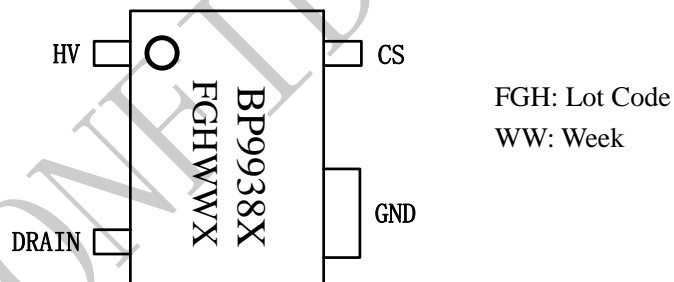


Figure 2. Pin configuration

## Pin Definition

Pin No.	Name	Description
1	HV	High voltage power supply Pin.
2	DRAIN	Internal HV Power MOSFET Drain.
3	GND	GND Pin.
4	CS	Current Sense. Connect a sense resistor between this pin and power GND.