

## Super Small Package PFM Control Step-Up Switching Regulator

### General Description

The PN2201 Series is a CMOS PFM-control step-up switching regulator that mainly consists of a reference voltage source, an oscillator, and a comparator, enabling products with a low ripple over a wide range, high efficiency, and high output current. Products with a fixed duty ratio of 75 % (Lower Output Voltage) or 88% (Higher Output Voltage) are also available. With the PN2201 Series, a step-up switching regulator can be configured by using an external coil, capacitor, and diode. A protection circuit turns off the built-in MOS FET when the voltage at the CONT pin exceeds the limit to prevent it from being damaged. This feature, along with the mini package and low current consumption, makes the PN2201 Series ideal for applications such as the power supply unit of portable equipment.

### Applications

- Power supply for portable equipment such as digital cameras, electronic notebooks, and PDA
- Power supply for audio equipment such as portable CD/MD players
- Constant voltage power supply for cameras, video

### Typical Application Circuit

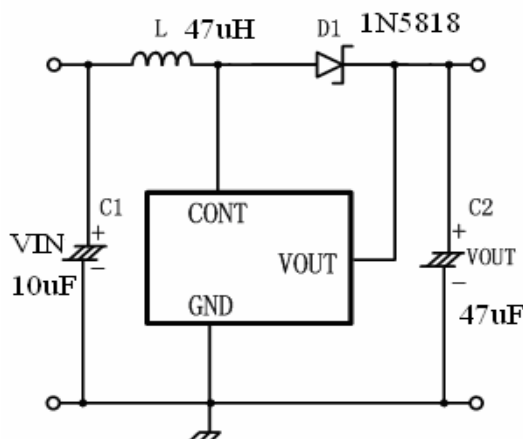


Figure 1. Basic Application Circuit with PN2201 adjustable version

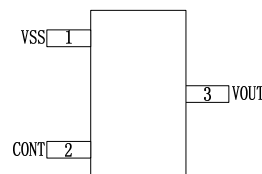
- equipment, and communications equipment
- Power supply for microcomputers

### Features

- Low voltage operation: Startup at 0.9 V min (Iout = 1mA) guaranteed
- Low input current: 11uA (Vout = 3.0V)
- Duty ratio: 75 % Built-in fixed-type PFM controller
- External parts: Coil, capacitor, and diode
- Output voltage: Settable to between 1.5 to 5.0V accuracy of 2%

### Package

SOT-23-3L



SOT-89-3L

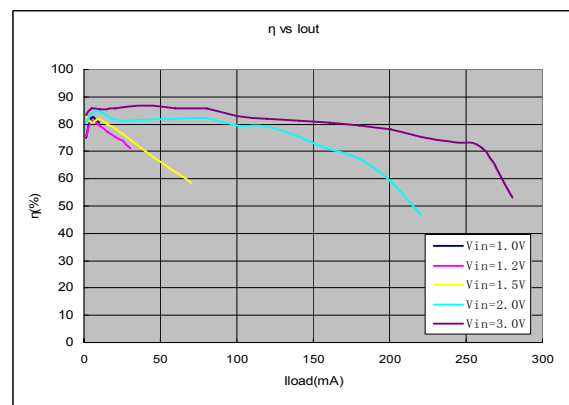
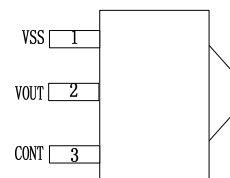


Figure 2. Typical Efficiency Curve