

42V 3A CC/CV Step-Down DC/DC Converter

General Description

PN4030A is a wide input voltage, high efficiency CC/CV step-down DC/DC converter that operates in either CV (Constant Output Voltage) mode or CC (Constant Output Current) mode. PN4030A provides up to 3A output current at 230kHz switching frequency.

PN4030A eliminates the expensive, high accuracy current sense resistor, making it ideal for battery charging applications and adaptors with accurate current limit. The PN4030A achieves higher efficiency than traditional constant current switching regulators by eliminating its associated power loss on the additional current sensing resistor.

Protection features include cycle-by-cycle current limit, thermal shutdown, and frequency foldback at short circuit. PN4030A are available in a SOP8-PP package and require very few external devices for operation.

Applications

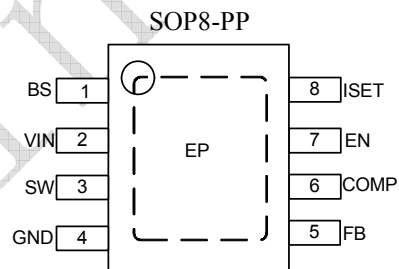
- Car Charger/ Adaptor
- Rechargeable Portable Devices
- General-Purpose CC/CV Supply

Features

- 42V Input Voltage Surge
- 40V Steady State Operation
- Up to 3A Output Current
- Output Voltage up to 12V
- 230kHz Switching Frequency

- Up to 91% Efficiency
- Stable with Low-ESR Ceramic Capacitors to Allow Low-Profile Designs
- 230kHz Switching Frequency Eases EMI Design
- Constant Current Control Without Additional Current Sensing Resistor Improves Efficiency and Lowers Cost.
- Resistor Programmable Current Limit from 1.5A to 3.5A
- Up to 0.5V Excellent Cable Voltage Drop Compensation
- $\pm 7.5\%$ CC Accuracy
- 2% Feedback Voltage Accuracy
- Advanced Feature Set
Integrated Soft Start
Thermal Shutdown
Cycle-by-Cycle Current Limit
- SOP8-PP Package

Package



Typical Application Circuit

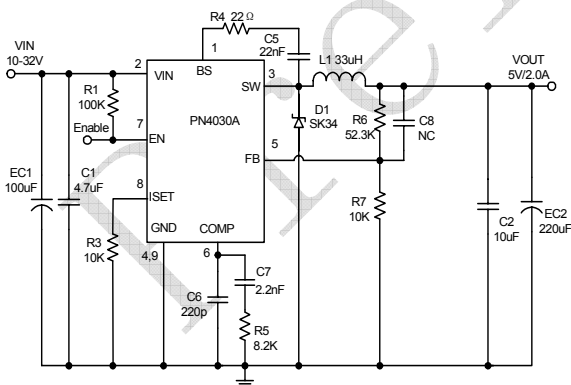


Figure 1. Typical Application Circuit with PN4030A

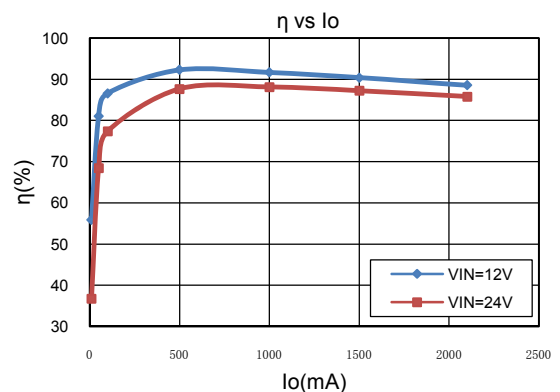


Figure 2. Typical Efficiency Curve