

36V, 1.5A Monolithic Step-Down Switching Regulator

1 Features

- 1.5A continuous output current capability
- 4.5V to 36V wide operating input range with 33V input Over Voltage Protection
- Integrated 36V, 250mΩ high side and 36V, 140mΩ low side power MOSFET switches
- Up to 97% efficiency
- Internal Soft-Start limits the inrush current at turn-on
- Internal compensation to save external components
- Input Under-Voltage Lockout
- Input over-voltage protection to protect device from working in high voltage and high current condition
- Output Over-Voltage Protection
- Output short protection with both high side current limit and low side current limit to protect the device in hard short
- Over-Temperature Protection
- Pulse skip mode at light load to improve light load efficiency
- Stable with Low ESR Ceramic Output Capacitors
- Fixed 150KHz Switching Frequency
- Fewest external components and intensive internal protection features
- Available in ESOP-8 Package

2 Applications

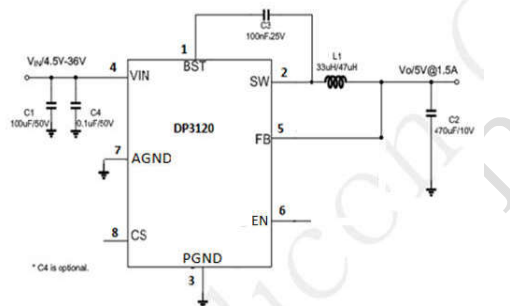
- USB car charger
- Portable charging device
- General purpose DC-DC conversion

3 Description

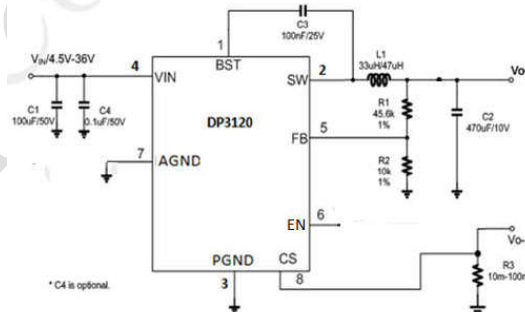
DP3120 is a monolithic 36V, 1.5A step-down switching regulator. DP3120 integrates a 36V 250mΩ high side and a 36V, 140mΩ low side MOSFETs to provide 1.5A continuous load current over a 4.5V to 36V wide operating input voltage with 33V input over voltage protection. Peak current mode control provides fast transient responses and cycle-by-cycle current limiting.

DP3120 has configurable line drop compensation, configurable charging current limit. CC/CV mode control provides a smooth transition between constant current charging and constant voltage charging stages. Built-in soft-start prevents inrush current at power-up.

4 Typical Application Schematic



Work Mode 0: CS floating



Work Mode 1: CS to GND with sensing resistor

Fig. 1 Schematic

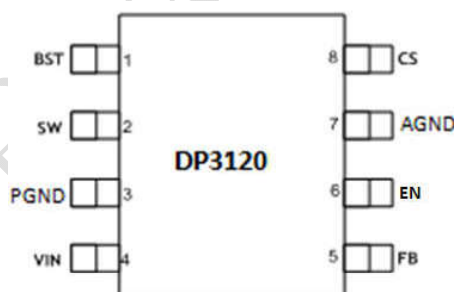


Fig. 2 Pin-out diagram



Fig. 3 Efficiency curve