

80mΩ, 1.5A/1A/0.8A/0.5A High-Side Power Switches with Flag

General Description

The PN9711 is a low voltage, single N-MOSFET high-side power switch, optimized for self-powered and bus-powered Universal Serial Bus (USB) applications. The PN9711 equipped with a charge pump circuitry to drive the internal MOSFET switch; the switch's low $R_{DS(ON)}$, 80mΩ, meets USB voltage drop requirements; and a flag output is available to indicate fault conditions to the local USB controller.

Additional features include soft-start to limit inrush current during plug-in, thermal shutdown to prevent catastrophic switch failure from high-current loads, under-voltage lockout (UVLO) to ensure that the device remains off unless there is a valid input voltage present. The maximum current is limited to typically 2.1A/1.5A/1A/0.65A through the switch of PN9711A/B/C/D, lower quiescent current as 25uA making this device ideal for portable battery-operated equipment.

The PN9711 is available in SOT-23-5L and SOP8/MSOP8 packages requiring minimum board space and smallest components.

Applications

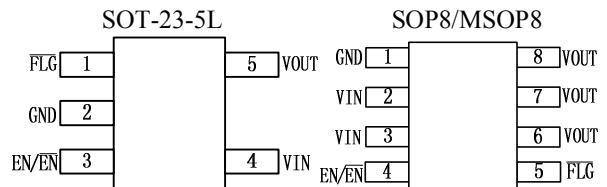
- USB Bus/Self Powered Hubs
- USB Peripherals
- ACPI Power Distribution
- PC Card Hot Swap
- Notebook, Motherboard PCs

- Battery-Powered Equipment
- Hot-Plug Power Supplies
- Battery-Charger Circuits

Features

- Wide Input Voltage Ranges : 2.5V to 5.5V
- Compliant to USB Specifications
- Typical $R_{DS(ON)}$:
80mΩ (SOT-23-5L) ,90mΩ (SOP8/MSOP8)
- 1.7V Typical Under-Voltage Lockout (UVLO)
- Output Can Be Forced Higher Than Input (Off-State)
- Low Supply Current :
25uA Typical at Switch on State
1uA Typical at Switch off State
- Guaranteed 1.5A/1A/0.8A/0.5A for PN9711A/B/C/D Continuous Load Current
- Open-Drain Fault Flag Output
- Hot Plug-In Application (Soft-Start)
- Current Limiting Protection
- Thermal Shutdown Protection
- Reverse Current Flow Blocking (no body diode)

Package



Typical Application Circuit

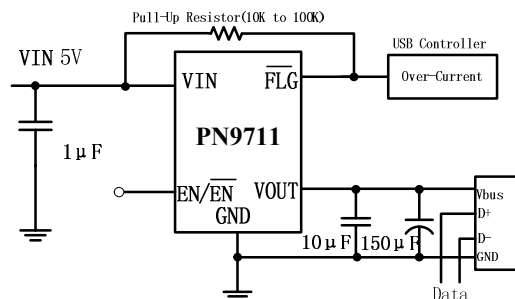


Figure 1. Basic Application Circuit with PN9711