

## 80mΩ, 2.0A/1.5A/1A/0.8A/0.5A High-Side Power Switches with Flag

### General Description

The PN9721 is a low voltage, single N-MOSFET high-side power switch, optimized for self-powered and bus-powered Universal Serial Bus (USB) applications. The PN9721 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/2.5A through the switch of PN9721A/B/C/D/E, lower quiescent current as 25uA making this device ideal for portable battery-operated equipment.

The PN9721 is available in SOT-23-5L package requiring minimum board space and smallest components.

### Applications

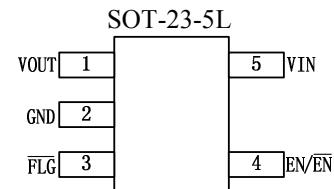
- USB Bus/Self Powered Hubs
- USB Peripherals
- ACPI Power Distribution
- PC Card Hot Swap
- Notebook, Motherboard PCs

- 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
- 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/2.0A for PN9721A/B/C/D/E 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

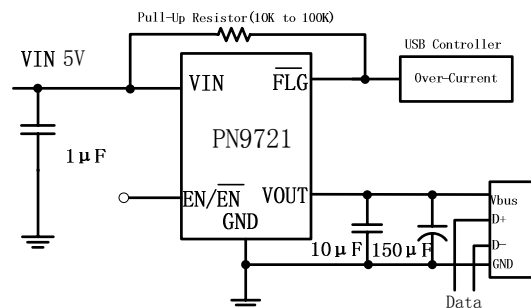


Figure 1. Basic Application Circuit with PN9721