

MP5021B

12 V, 7 mΩ RDSon Hot-Swap Protection Device with Current Monitoring

DESCRIPTION

FEATURES

The MP5021B is a hot-swap protection device designed to • 4.8 V to 16 V Operating Input Range protect circuitry on its output from transients on its input. Also, . Integrated 7 mΩ Power FET it protects its input from undesired shorts and transients · Adjustable Current Limit coming from its output.

At start-up, the slew rate at the output limits the inrush • ±5% Current Monitor Accuracy current. An external capacitor at SS controls the slew rate. The maximum output load is current limited using a sense · PG Detector and FLTB Indication FET topology where a low-power resistor from ISET to ground • PG Assert Low at VIN = 0

controls the magnitude of the current limit. An internal charge pump drives the gate of the power device, · External Soft-Start allowing a power FET with a very low on resistance of 7 mΩ.
• Programmable EN Blanking Time The MP5021B includes an IMON option to produce a voltage · Under/Over-Voltage Lockout proportional to the current through the power device, as set by • Thermal Protection a resistor from IMON to ground.

The MP5021B includes an optional discharge function that provides a discharge path for the external output capacitor when the part is disabled. Fault protections include currentlimit protection, thermal shutdown, and damaged MOSFET detection. Both the current limit and thermal shutdown have user-settable auto-retry and latch-off mode. Also, the device features over-voltage protection (OVP) and under-voltage protection (UVP).

The MP5021B is available in a 3mm x 5mm QFN package.

TYPICAL APPLICATION

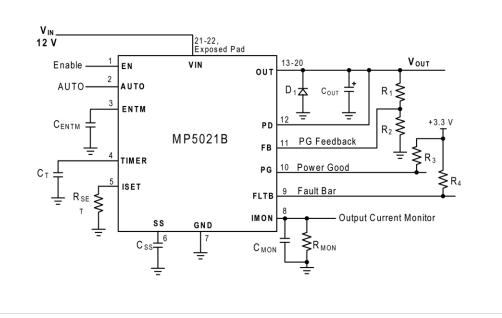
- Output Current Measurement
- Fast Response (<200 ns) for Short Protection
- Damaged MOSFET Detection

- Small QFN-22 (3mmx5mm) Package

APPLICATIONS

- · Hot Swappable
- · PC Cards
- Disk Drives
- Laptops

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