

100V Input Voltage, 50mA, Very High Voltage LINEAR REGULATOR

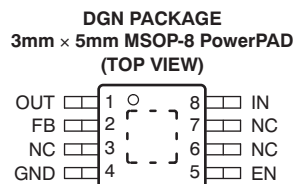
Check for Samples: [TPS7A4001](#)

FEATURES

- **Very High Maximum Input Voltage: 100V**
- **Wide Input Voltage Range: 7V to 100V**
- **Accuracy:**
 - **Nominal: 1%**
 - **Over Line, Load, and Temperature: 2.5%**
- **Low Quiescent Current: 25 μ A**
- **Quiescent Current at Shutdown: 4.1 μ A**
- **Maximum Output Current: 50mA**
- **CMOS Logic-Level-Compatible Enable Pin**
- **Adjustable Output Voltage from ~1.175V to 90V**
- **Stable with Ceramic Capacitors:**
 - **Input Capacitance: $\geq 1\mu$ F**
 - **Output Capacitance: $\geq 4.7\mu$ F**
- **Dropout Voltage: 290mV**
- **Built-In Current-Limit and Thermal Shutdown Protection**
- **Package: High Thermal Performance MSOP-8 PowerPAD™**
- **Operating Temperature Range: -40°C to $+125^{\circ}\text{C}$**

APPLICATIONS

- **Microprocessors, Microcontrollers Powered by Industrial Busses with High Voltage Transients**
- **Industrial Automation**
- **Telecom Infrastructure**
- **Automotive**
- **Power over Ethernet (PoE)**
- **LED Lighting**
- **Bias Power Supplies**



DESCRIPTION

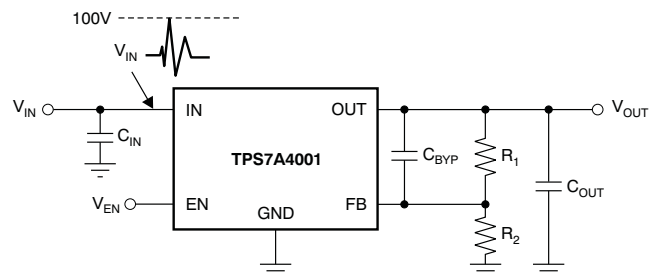
The TPS7A4001 is a very high voltage-tolerant linear regulator that offers the benefits of a thermally-enhanced package (MSOP-8), and is able to withstand continuous dc or transient input voltages of up to 100V.

The TPS7A4001 is stable with any output capacitance greater than 4.7 μ F and any input capacitance greater than 1 μ F (over temperature and tolerance). Therefore, implementations of this device require minimal board space because of its miniaturized packaging (MSOP-8) and a potentially small output capacitor. In addition, the TPS7A4001 offers an enable pin (EN) compatible with standard CMOS logic to enable a low-current shutdown mode.

The TPS7A4001 has an internal thermal shutdown and current limiting to protect the system during fault conditions. The MSOP-8 packages has an operating temperature range of $T_J = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$.

In addition, the TPS7A4001 is ideal for generating a low-voltage supply from intermediate voltage rails in telecom and industrial applications; not only it can supply a well-regulated voltage rail, but it can also withstand and maintain regulation during very high and fast voltage transients. These features translate to simpler and more cost-effective electrical surge-protection circuitry for a wide range of applications, including PoE, bias supply, and LED lighting.

Typical Application



Post DC/DC Converter Regulation for High-Performance Analog Circuitry



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