

## General Application Note for the PWR Family of Power Resistors

Power Resistors from the PWR Series are used in a variety of different configurations of power supplies. The main functions are either to absorb the inrush current caused by the switching action of a power device such as a MOSFET or IGBT or as a shunt, which is used for measuring and controlling the current used in the power supply.



TO-220 style resistors use thick film on ceramic technology, which has the advantage of having a low inductance, which is quite useful in circuits where switching frequencies of 50 KHz are common. Thick film on ceramic also offers the advantage of being able to absorb large amounts of power. The TO-220 package is compact and offers space savings to designers.

Shunt Resistors often use thick film on ceramic or metal foil technology when high power is required. For lower powers bare metal shunts, which offer excellent temperature coefficients and low resistance values, are preferred. The main function of the shunt resistor is to measure the current consumed by the power supply although they are often used in a circuit protection mode as well.

Bourns® PWR series of power and shunt resistors are ideal for the following applications:

- Electric Welders
- Electric Actuators, Process Control Equipment
- Air Conditioning Equipment
- Electro Plating
- Emergency Lighting
- UPS
- Medical Equipment
- High Power Microscopes
- Battery Charger
- High Power Electric Motor Drives
- Low Power Electric Motor Drives (Window Motors, Power Steering)
- Medical Equipment
- Braking Systems
- Wind Power Generation