

AT431, AT431L

Adjustable Precision Shunt Regulators



Immense Advance Tech.

FEATURES

- Programmable Output Voltage to 40 V
- Voltage Reference Tolerance 1.0% for B Series and 0.5% for A Series
- Low Dynamic Output Impedance 0.2Ω
- Sink Current Capability of 0.5 mA to 100 mA
- Equivalent Full-Range Temperature Coefficient of 50ppm/°C
- Temperature Compensated for Operation over Full Rated Operating Temperature Range
- Low Output Noise Voltage
- Fast Turn on Responses
- Available in SOT-23, SOT-25(SOT-23-5), SOT-89 or TO-92 packages

DESCRIPTION

The AT431, AT431L, A, B is a three-terminal adjustable regulator series with a guaranteed thermal stability over applicable temperature ranges. The output voltage may be set to any value between Vref (approximately 2.5 volts) and 40 volts with two external resistors. These devices have a typical dynamic output impedance of 0.2Ω. Active output circuitry provides a very sharp turn-on characteristic, making these devices excellent replacement for zener diodes in many applications. The AT431, AT431L, A, B is characterized for operation from 0°C to +70°C.

APPLICATION

- Low Output Voltage (3.0 V to 3.3 V) Switching Power Supply Error Amplifier
- Adjustable Voltage or Current Linear and Switching Power Supplies
- Voltage Monitoring
- Current Source and Sink Circuits
- Analog and Digital Circuits Requiring Precision References
- Low Voltage Zener Diode Replacements

TYPICAL APPLICATION CIRCUITS

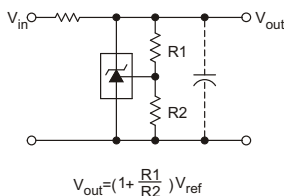


Figure 1. Shunt Regulator

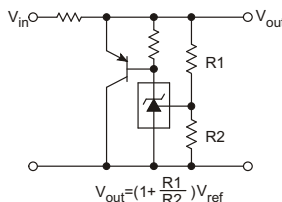


Figure 2. High Current Shunt Regulator

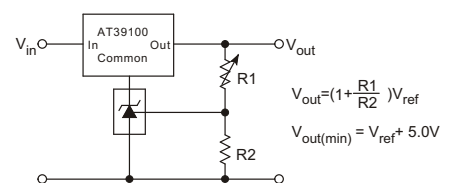


Figure 3. Output Control for a Three Terminal Fixed Regulator

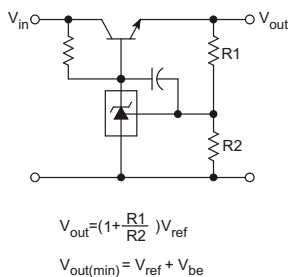


Figure 4. Series Pass Regulator

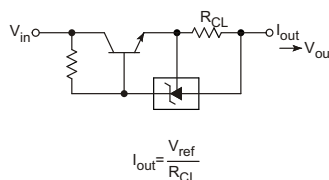


Figure 5. Constant Current Source

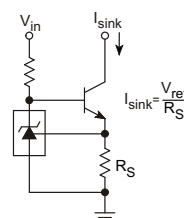


Figure 6. Constant Current Sink

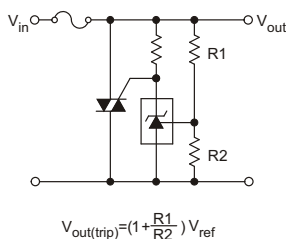


Figure 7. TRIAC Crowbar

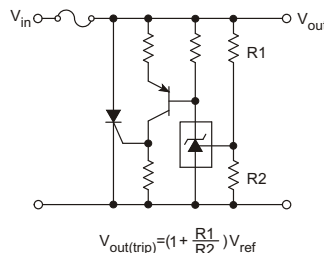


Figure 8. SCR Crowbar

