

**ADJUSTABLE PRECISION SHUNT REGULATORS****AZ431-A****Description**

The AZ431-A series ICs are three-terminal adjustable shunt regulators with guaranteed thermal stability over a full operation range. These ICs feature sharp turn-on characteristics, low temperature coefficient and low output impedance, which make them ideal substitutes for Zener diodes in applications such as switching power supply, charger and other adjustable regulators.

The AZ431-A series ICs are of 40V voltage type. Its output voltage can be set to any value between $V_{REF}(2.5V)$ and 36V.

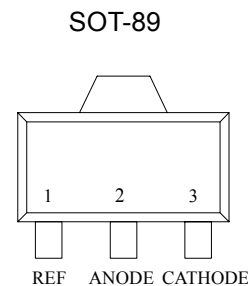
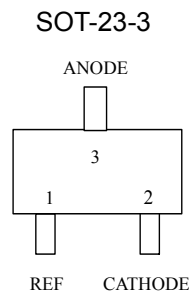
The AZ431-A precision reference is offered in two band-gap tolerance: 0.4% and 0.8%.

Features

- Programmable Precise Output Voltage from 2.5V to 36V
- Very Accurate Reference Voltage: 0.15% Typical
- High Stability under Capacitive Load
- Low Temperature Deviation: 4.5mV Typical
- Low Equivalent Full-range Temperature Coefficient with 20PPM/°C Typical
- Low Dynamic Output Resistance: 0.2Ω Typical
- Sink Current Capacity from 1mA to 100 mA
- Low Output Noise
- Wide Operating Range of -40 to 125°C

Applications

- Charger
- Voltage Adapter
- Switching Power Supply
- Graphic Card
- Precision Voltage Reference

Pin Configuration**Parametric Table**

| | AZ431A-A | AZ431B-A |
|--------------------------------------|----------|----------|
| I_{KA} (Max) (mA) | 100 | 100 |
| I_{KA} (Min) (mA) | 0.4 | 0.4 |
| V_{OUT} / V_{REF} Initial Tol. (%) | 0.4 | 0.8 |
| V_{OUT} (Max) (V) | 36 | 36 |
| V_{OUT} (Min) (V) | 2.5 | 2.5 |
| Z_{KA} (Typ) (Ω) | 0.15 | 0.15 |
| Temp Coeff. (Typ) (PPM/°C) | 20 | 20 |
| Operating Temperature (Min) (°C) | -40 | -40 |
| Operating Temperature (Max) (°C) | +125 | +125 |

Benefits

- Easier to Stabilize
- Ultra Low Temperature Coefficient
- Higher V_{REF} Accuracy
- Wider Operating Temperature Range
- Very Competitive Price

Additional Available Materials

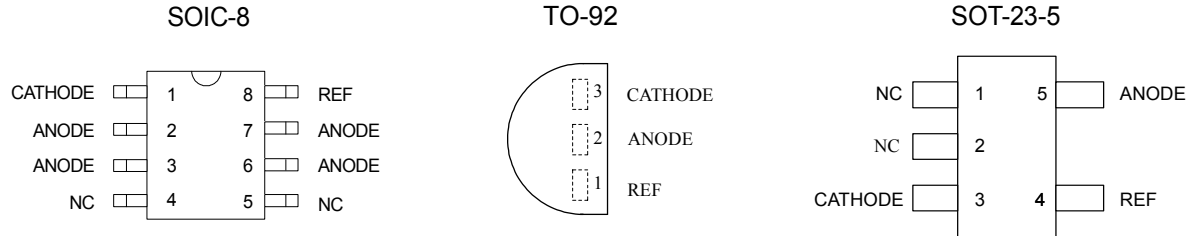
- Samples
- Datasheet
- Reliability Report
- ESD Report



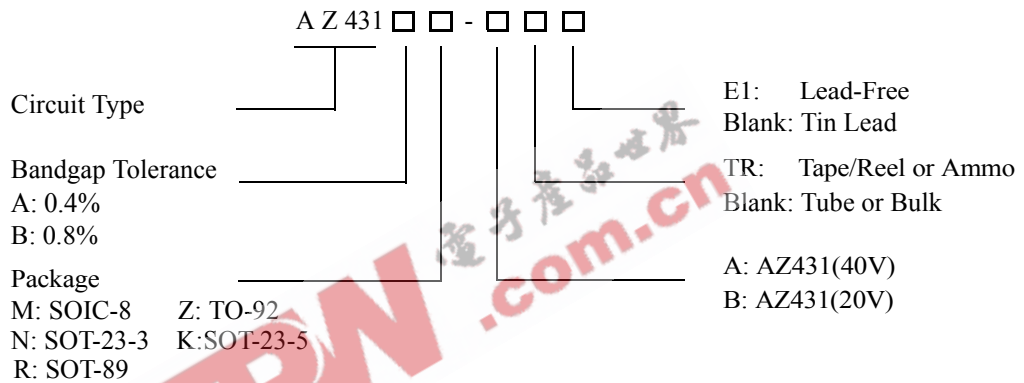
ADJUSTABLE PRECISION SHUNT REGULATORS

AZ431-A

Pin Configuration



Ordering Information Example



| Package | Temperature Range | Voltage Tolerance | Part Number | | Marking ID | | Packing Type |
|----------|-------------------|-------------------|-------------|---------------|------------|-------------|--------------|
| | | | Tin Lead | Lead Free | Tin Lead | Lead Free | |
| SOT-23-5 | -40 to 125°C | 0.4% | AZ431AK-ATR | AZ431AK-ATRE1 | K3A | E3A | Tape & Reel |
| | | 0.8% | AZ431BK-ATR | AZ431BK-ATRE1 | K3B | E3B | Tape & Reel |
| TO-92 | -40 to 125°C | 0.4% | AZ431AZ-A | AZ431AZ-AE1 | AZ431AZ-A | AZ431AZ-AE1 | Bulk |
| | | 0.4% | AZ431AZ-ATR | AZ431AZ-ATRE1 | AZ431AZ-A | AZ431AZ-AE1 | Ammo |
| | | 0.8% | AZ431BZ-A | AZ431BZ-AE1 | AZ431BZ-A | AZ431BZ-AE1 | Bulk |
| | | 0.8% | AZ431BZ-ATR | AZ431BZ-ATRE1 | AZ431BZ-A | AZ431BZ-AE1 | Ammo |

Detailed information please refer to the relevant datasheet.

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