

**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.

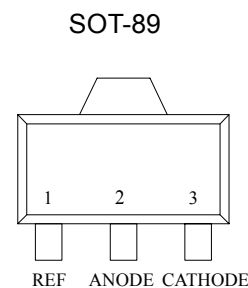
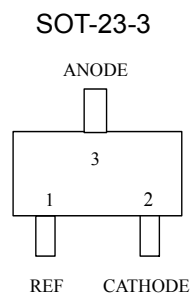
The AZ431-A precision reference is offered in two band-gap tolerance: 0.4% and 0.8%.

**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**

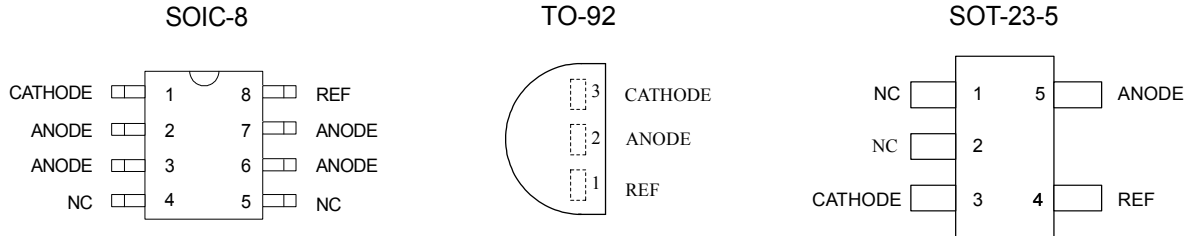
- Samples
- Datasheet
- Reliability Report
- ESD Report



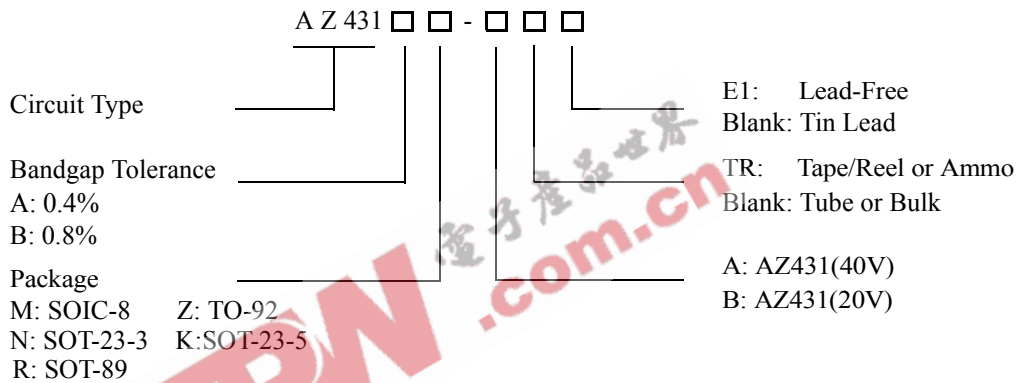
**ADJUSTABLE PRECISION SHUNT REGULATORS**

**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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