



查询AS432供应商

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**ASTEC**

SEMICONDUCTOR

# AS432

1.24V Precision Adjustable Shunt Reference

**PTC**

## Features

- Temperature-compensated: 50 ppm/°C
- 0.25% to 2.0% bandgap offered
- Internal amplifier with 150 mA capability
- Multiple temperature ranges
- Low frequency dynamic output impedance: < 150 mΩ
- Low output noise

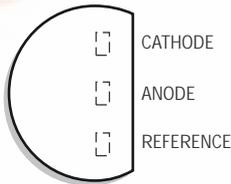
## Description

The AS432 is a three terminal adjustable shunt regulator utilizing an accurate 1.24V bandgap reference. The AS432 is functionally similar to an AS431 except for its lower reference voltage, making it usable in a wide variety of low voltage applications.

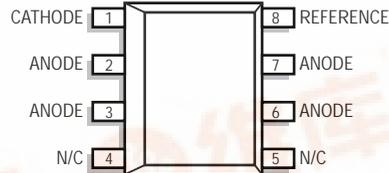
Because of its robust bipolar technology, the AS432 handles a wide range of current, and holds off more than 18V so its use is not limited to low power, low voltage systems. Significant care has been taken to provide adequate AC bandwidth to allow the AS432 as an amplifier in control systems and power electronics.

## Pin Configuration — Top view

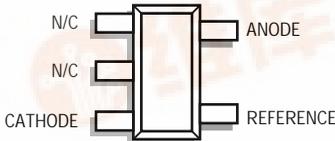
T0-92 (LP)



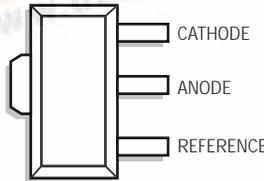
8L SOIC (8D)



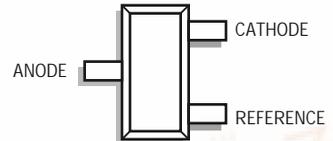
5L SOT-23 (5VS)



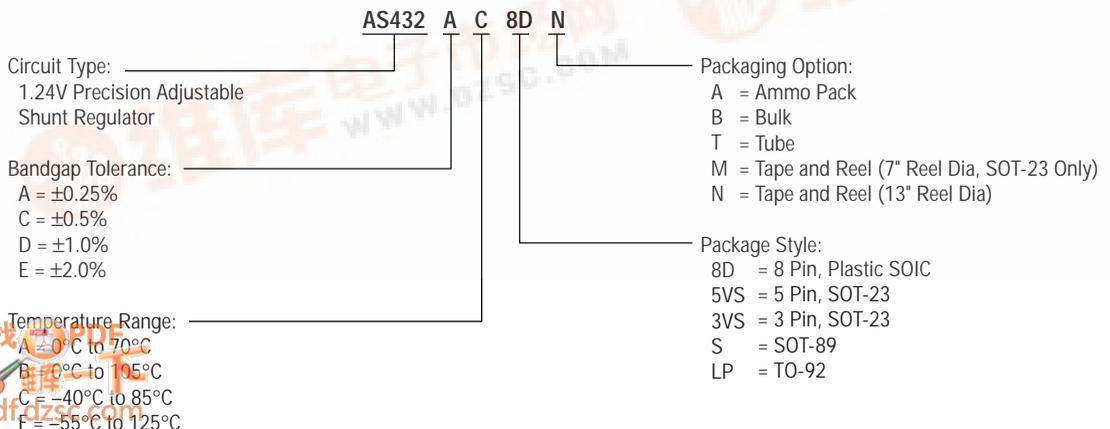
SOT-89 (S)



3L SOT-23 (3VS)

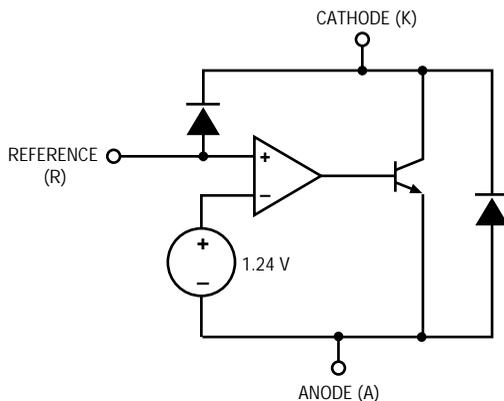


## Ordering Information



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## Functional Block Diagram



## Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Cathode-Anode Reverse Breakdown	$V_{KA}$	18	V
Anode-Cathode Forward Current	$I_{AK}$	1	A
Operating Cathode Current	$I_{KA}$	100	mA
Reference Input Current	$I_{REF}$	1	mA
Continuous Power at 25°C	$P_D$		
TO-92		775	mW
8L SOIC		750	mW
SOT-89		1000	mW
SOT-23/3L/5L		200	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-65 to 150	°C
Lead Temperature (Soldering 10 sec.)	$T_L$	300	°C

Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

## Recommended Conditions

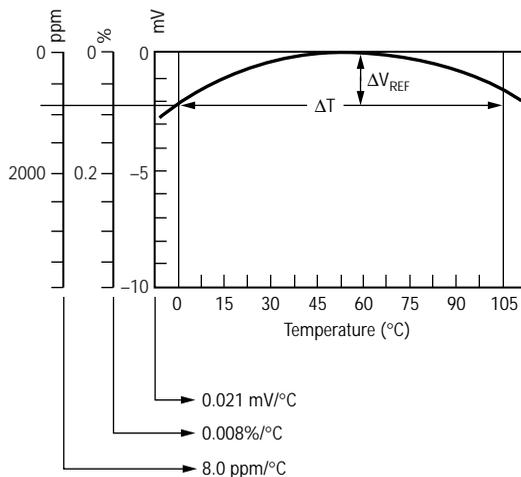
Parameter	Symbol	Rating	Unit
Cathode Voltage	$V_{KA}$	$V_{REF}$ to 18	V
Cathode Current	$I_K$	10	mA

## Typical Thermal Resistances

Package	$\theta_{JA}$	$\theta_{JC}$	Typical Derating
TO-92	160°C/W	80°C/W	6.3 mW/°C
SOIC	175°C/W	45°C/W	5.7 mW/°C
SOT-89	110°C/W	8°C/W	9.1 mW/°C
SOT-23/5L	575°C/W	150°C/W	1.7 mW/°C

### Typical Performance Curves

\* Calculating Average Temperature Coefficient (TC)



- TC in mV/°C =  $\frac{\Delta V_{REF} \text{ (mV)}}{\Delta T_A}$
- TC in %/°C =  $\frac{\left(\frac{\Delta V_{REF}}{V_{REF} \text{ at } 25^\circ\text{C}}\right) \times 100}{\Delta T_A}$
- TC in ppm/°C =  $\frac{\left(\frac{\Delta V_{REF}}{V_{REF} \text{ at } 25^\circ\text{C}}\right) \times 10^6}{\Delta T_A}$

### Test Circuits

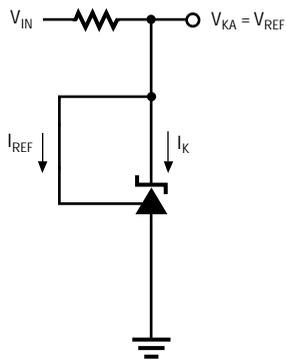


Figure 1a. Test Circuit 1

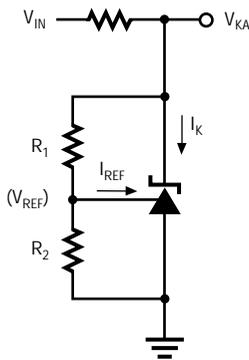


Figure 1b. Test Circuit 2

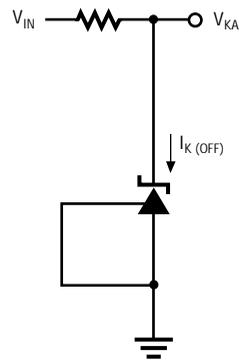


Figure 1c. Test Circuit 3

Typical Performance Curves

Low Current Operating Characteristics

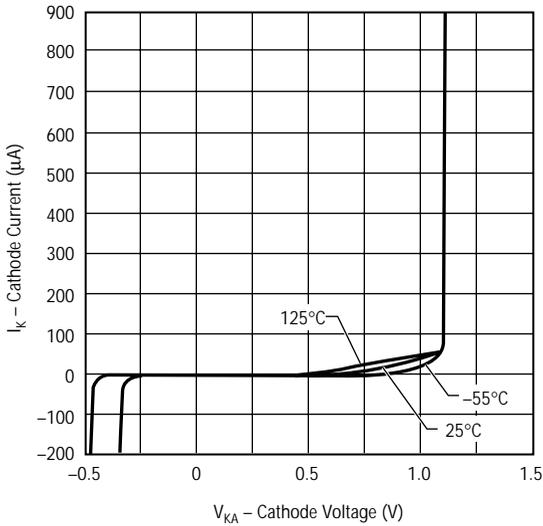


Figure 2

High Current Operating Characteristics

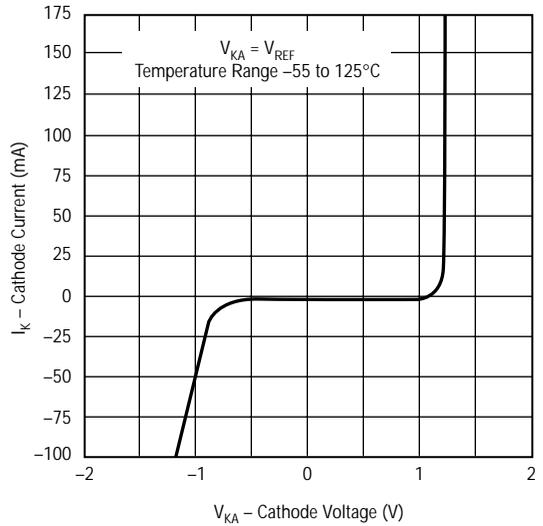


Figure 3

Off State Leakage

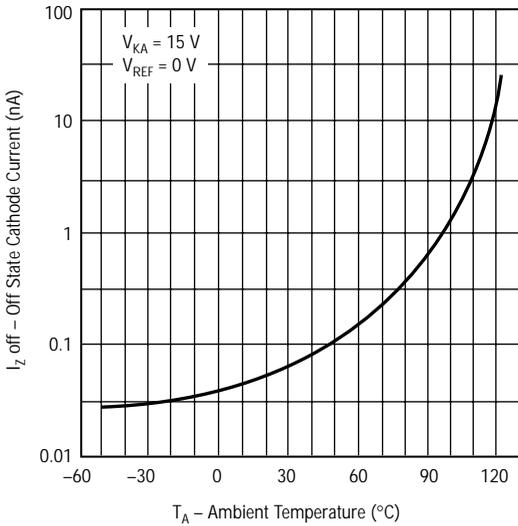


Figure 4

Reference Voltage vs Ambient Temperature

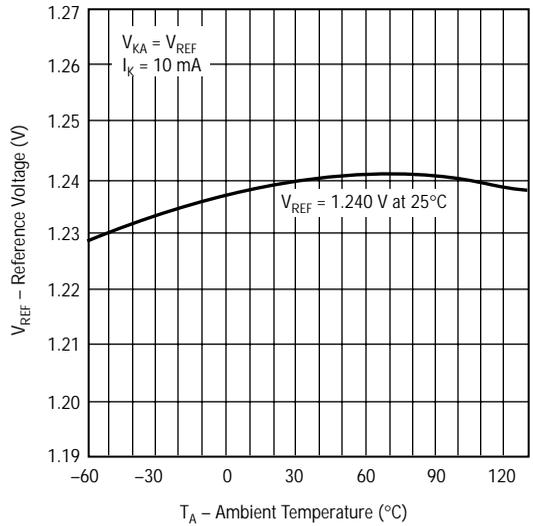


Figure 5

Typical Performance Curves

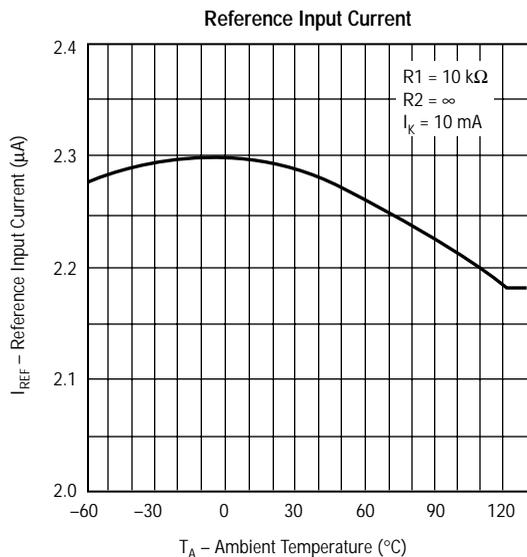


Figure 6

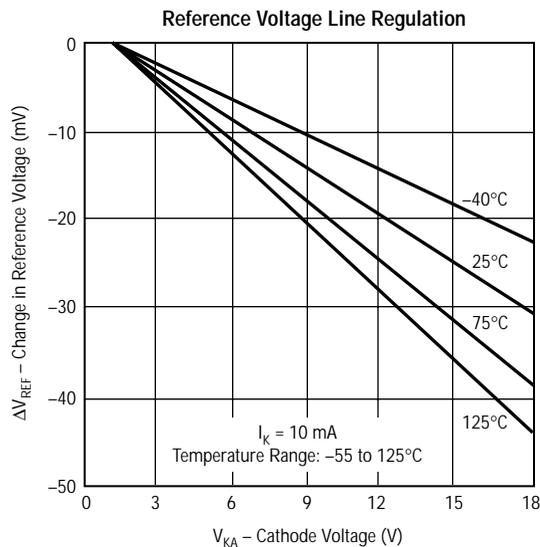


Figure 7

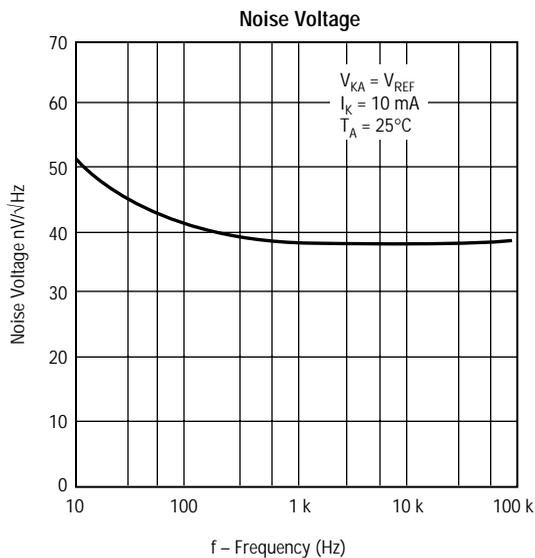


Figure 8

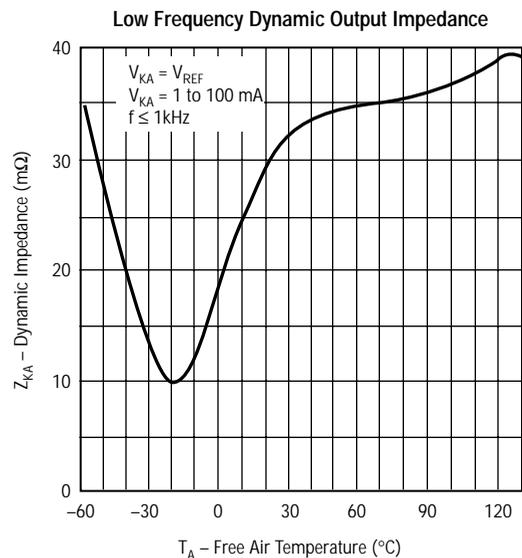


Figure 9

Typical Performance Curves

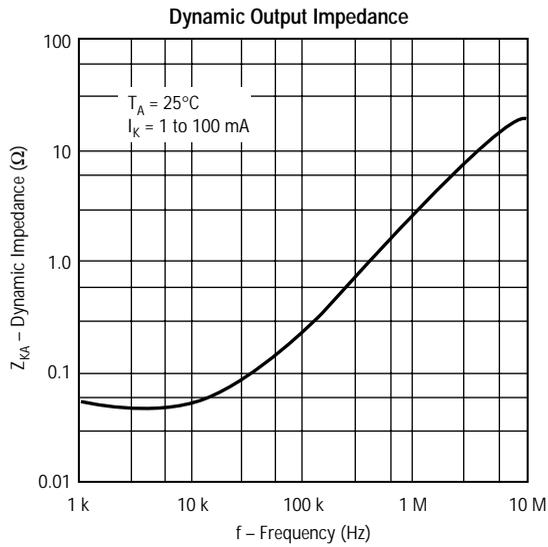


Figure 10

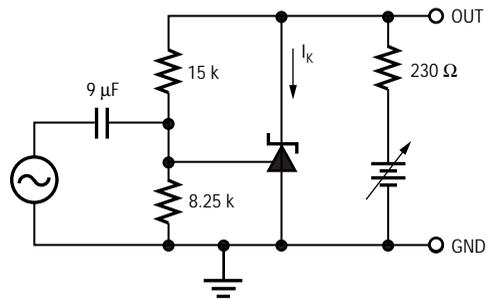
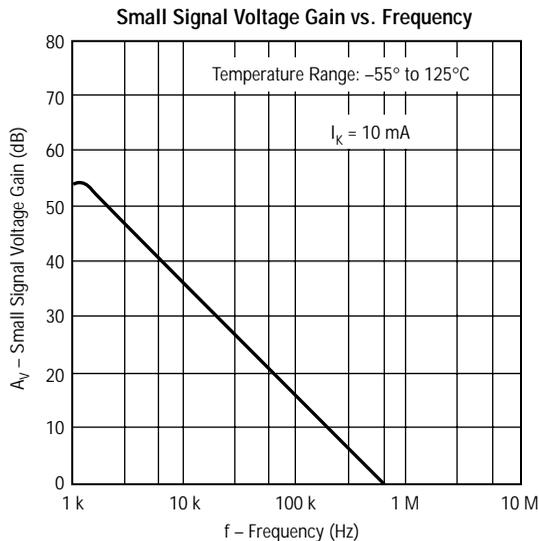


Figure 11

Typical Performance Curves

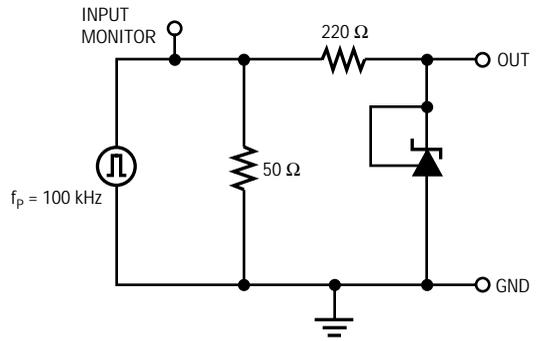
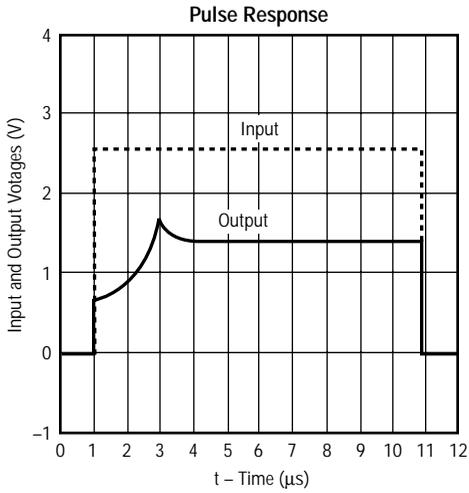


Figure 12