TL432AT2

three-terminal adjustable shunt regulator

Description

The TL432AT2 is a three-terminal adjustable shunt regulator with guaranteed thermal stability over a full operation range. It features sharp turn-on characteristics, low temperature coefficient and low output impedance, which make it ideal substitute for Zener diode in applications such as switching power supply, charger and other adjustable regulators.

The TL432AT2 precision reference is offered in voltage tolerance: 0.5%.

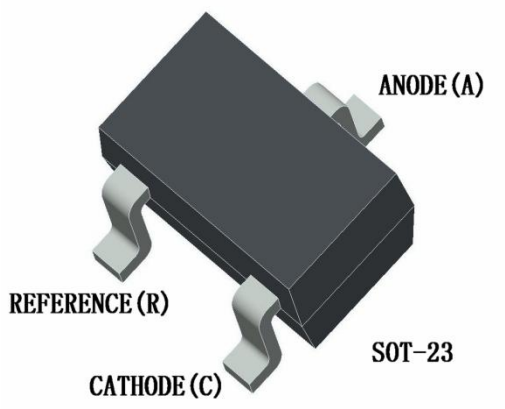
Features

- Programmable Precise Output Voltage from 1.25V to 18V
- High Stability under Capacitive Load
- Low Equivalent Full-range Temperature Coefficient
- Sink Current Capacity from 1mA to 100 mA
- Low Output Noise
- Wide Operating Range of -40 to 125℃

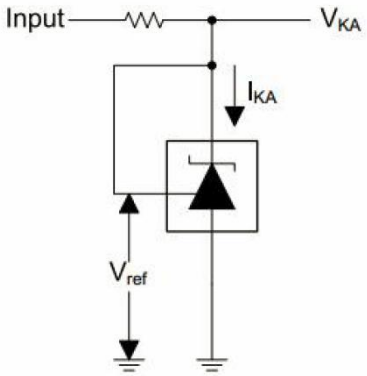
Applications

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

Pin Assignment

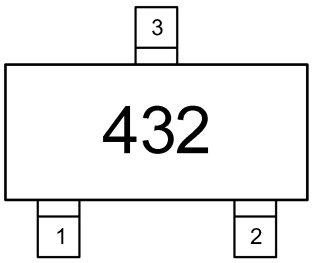


Simplified Block Diagram



Test Circuit for $V_{KA}=V_{ref}$

Marking



Absolute Maximum Ratings(Note)

项目	符号	数值	单位
阴极-阳极击穿电压	V_{KA}	20	V
连续阴极电流	I_{KA}	100	mA
耗散功率	P_D	0.77	W
工作结温	T_j	0~150	℃
工作温度范围	T_g	0~70	℃
储存温度范围	T_{stg}	-65~150	℃

Electrical Characteristics(T_A=25℃, unless otherwise noted)

项目	符号	条件	最小	典型	最大	单位
参考输入电压	V_{REF}	$V_{KA}=V_{REF}$，I_K=10mA	1.244	1.25	1.256	V
温度范围内参考输入电压偏差	$\triangle V_{REF}/\triangle T$	$V_{KA}=V_{REF}$，I_K=10mA，$T_{MIN}\leqq T_A\leqq T_{MAX}$			16	mV
参考输入电压变化与阴极到阳极电压变化的比值	$\triangle V_{REF}/\triangle V_{KA}$	I_K=10mA，$\triangle V_{KA}$ =1.25V~15V			2.4	mV/V
参考输入电流	I_{REF}	I_K=10mA			0.4	uA
稳压时最小阴极电流	I_{kmin}	$V_{KA}=V_{REF}$			0.1	mA
截止态阴极电流	I_{koff}	V_{KA}=18V			0.5	uA
动态阻抗	Z_{KA}	$V_{KA}=V_{REF}$，I_K=1~100mA		0.05	0.15	Ω

Typical Performance Characteristics(T_A=25℃，unless otherwise noted.)

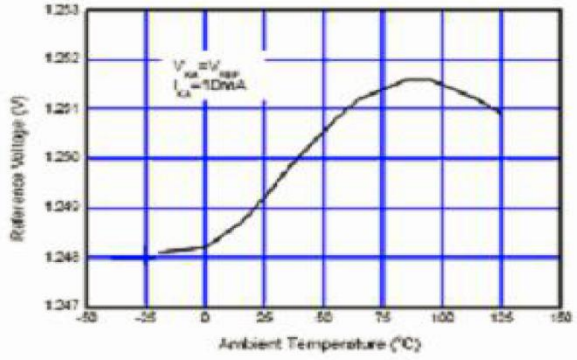


Figure 6. Reference Voltage vs. Ambient Temperature

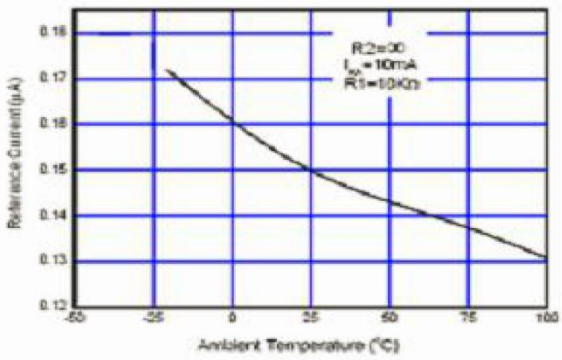


Figure 7. Reference Current vs. Ambient Temperature

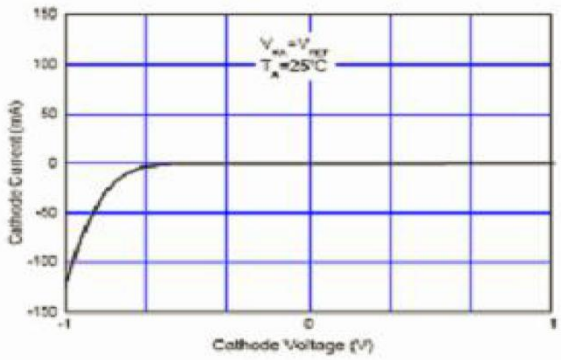


Figure 8. Cathode Current vs. Cathode Voltage

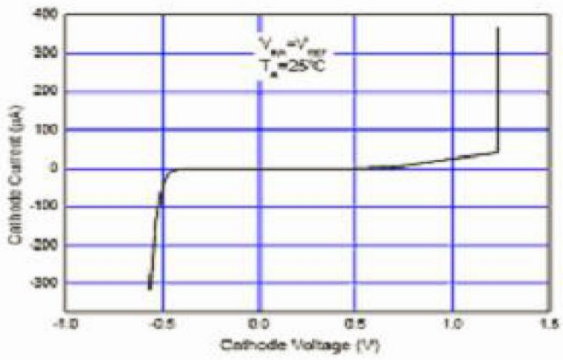
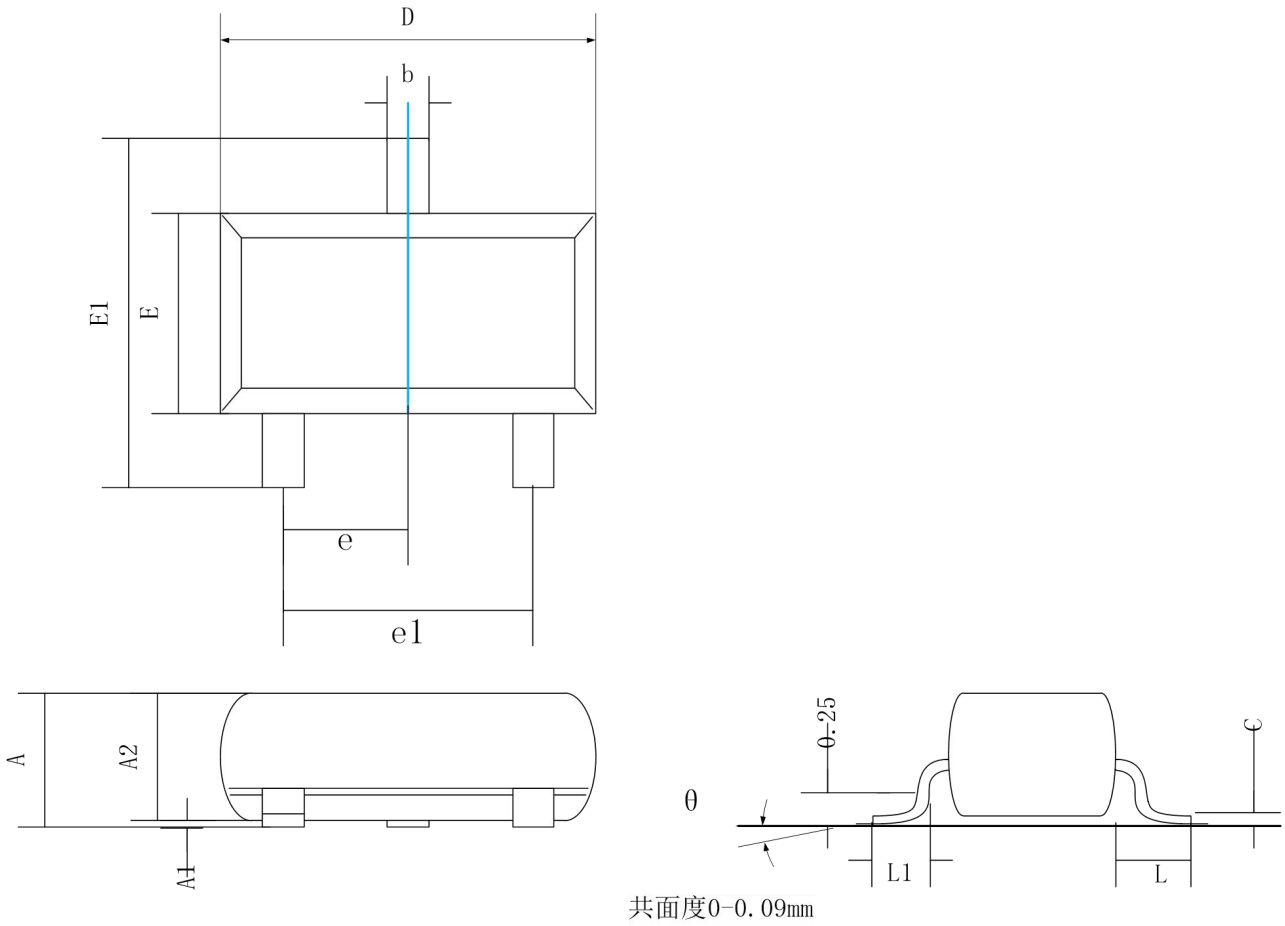


Figure 9. . Current vs. cathode Voltage

SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°

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