



MKTL432

Adjustable Accurate Reference Source

DEVICE DESCRIPTION:

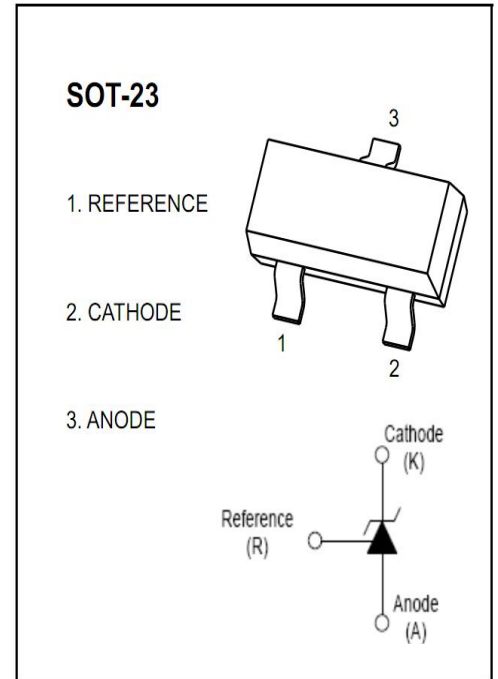
The MK TL432 is a three-terminal adjustable shunt regulator highly accurate 1.24V band gap reference with 0.5%, 1% tolerance. The device offers thermal stability, wide operating current (50mA) and an extended temperature range of 0 to 85C for operation in power supply applications. The MK TL432 offers a wide operating voltage range of up to 12V and is an excellent choice for voltage reference requirements in an isolated feedback circuit for 3.0V ~ 3.3V switching mode power supplies. The tight tolerance guarantees a lower design cost for the power supply manufacturer by virtually eliminating the need for an extra power supply manufacturing process of the power supply

FEATURES:

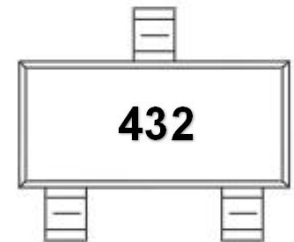
- #.Low dynamic output impedance
- #.The effective temperature compensation in the working range of full temperature
- #.Low output noise voltage
- #.Fast on -state response
- #.Sink current capability of 0.1mA to100mA

APPLICATION:

- Shunt Regulator
- High-Current Shunt Regulator
- Precision Current Limiter



MARKING:



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Cathode Voltage	VKA	18	V
Cathode Current Range (Continuous)	IKA	100	mA
Reference Input Current Range	Iref	6	mA
Power Dissipation	PD	350	mW
Thermal Resistance from Junction to Ambient	RθJA	350	/W
Operating Junction Temperature	Tj	125	
Operating Ambient Temperature Range	Topr	-40~+85	
Storage temperature Range	Tstg	-40~+150	



ELECTRICAL CHARACTERISTICS (Ta=25 unless otherwise specified)

Reference input voltage (Fig.1)	Vref	VKA=VREF, IKA=10mA	1.22	1.24	1.25	V
Deviation of reference voltage over full temperature range (Fig 1)	Vref / T	VKA =VREF, IKA =10mA 0 ≤Ta≤70		4.5	16	mV
Ratio of change in reference input voltage to the change in cathode voltage (Fig.2)	Vref / VKA	IKA=10mA VKA=1.24V~15V		1	2.5	mV/V
Reference input current (Fig.2)	Iref	IKA=10mA, R1=10kΩ R2=∞		1.5	4	μA
Deviation Of reference input current over full temperature range (Fig.2)	Iref / T	IKA=10mA, R1=10kΩ R2=∞ 0 ≤Ta≤70		0.2	0.6	μA
Minimum cathode current for regulation (Fig.1)	IKA(min)	VKA=VREF, IKA=10mA			0.1	mA
Off-state cathode Current (Fig.3)	IKA(OFF)	VKA=36V, VREF=0		0.05	0.5	μA
Dynamic impedance	ZKA	VKA=VREF, IKA=1 to100mA f≤1.0kHz		0.15	0.5	Ω

Note: TMIN=-25 ,TMAX=+85

CLASSIFICATION of Vref

Rank	0.5	1.00%
Range	1.234-1.246	1.228-1.252

Figure 1. Test Circuit for VKA = Vref

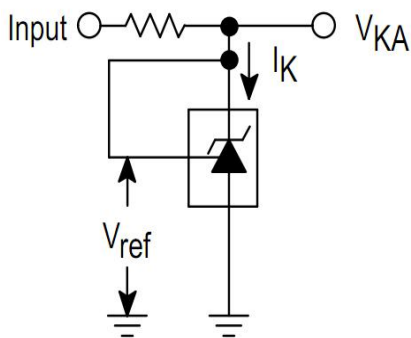
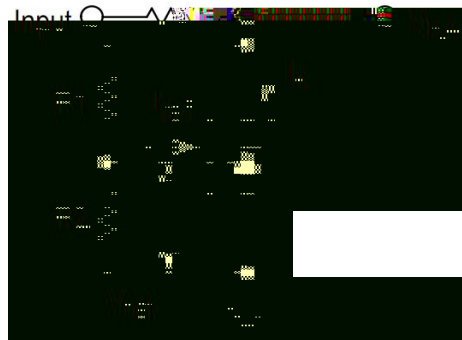
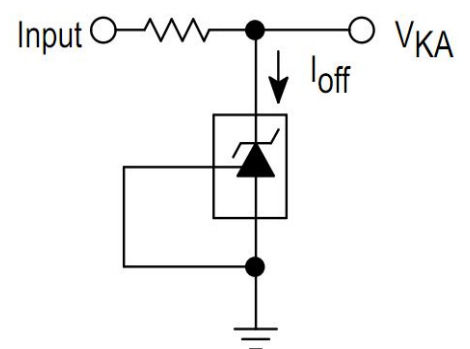


Figure 2. Test Circuit for VKA >Vref



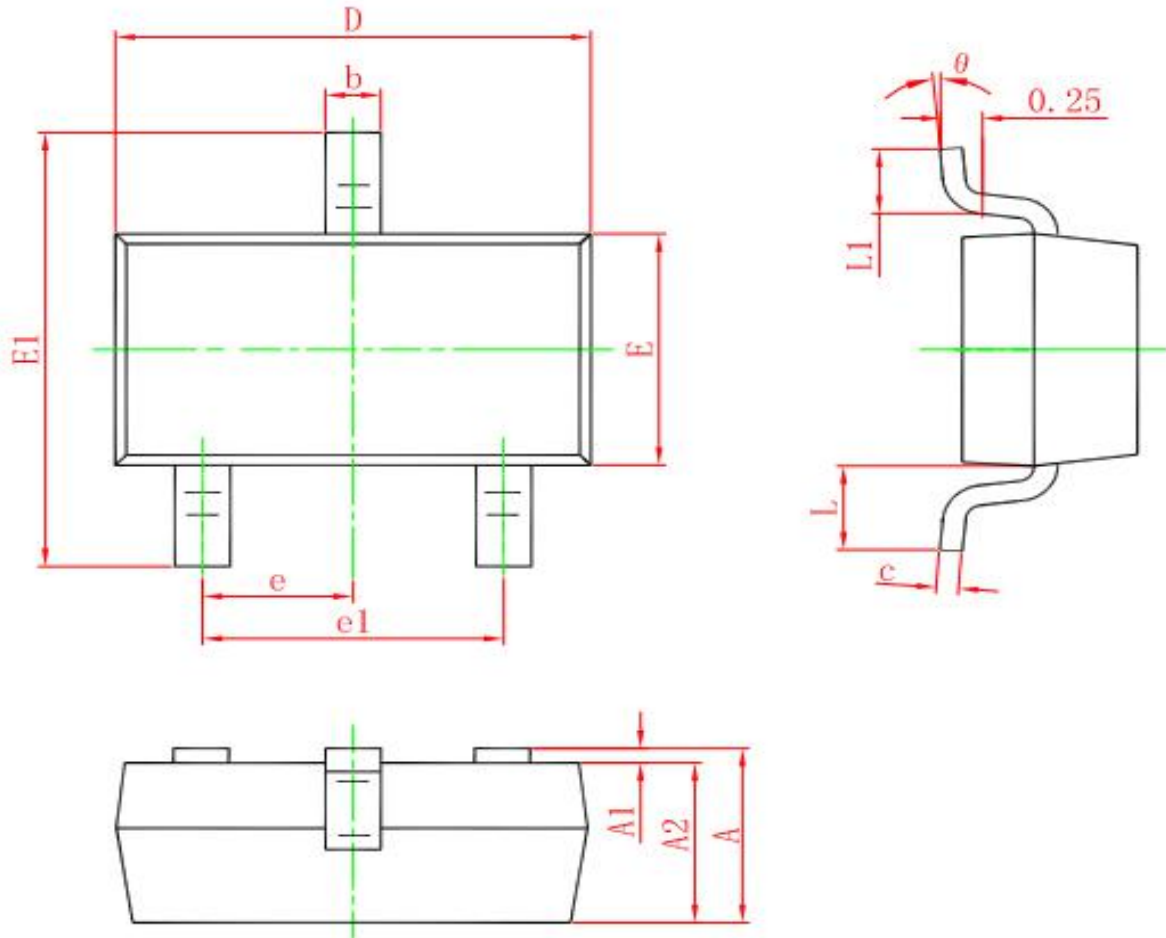
$$V_{KA} = V_{ref} \left(1 + \frac{R1}{R2} \right) + I_{ref} \cdot R1$$

Figure 3. Test Circuit for Ioff





SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
theta	0°	8°	0°	8°