

Encapsulate Adjustable Reference Source

Adjustable Accurate Reference Source

DEVICE DESCRIPTION

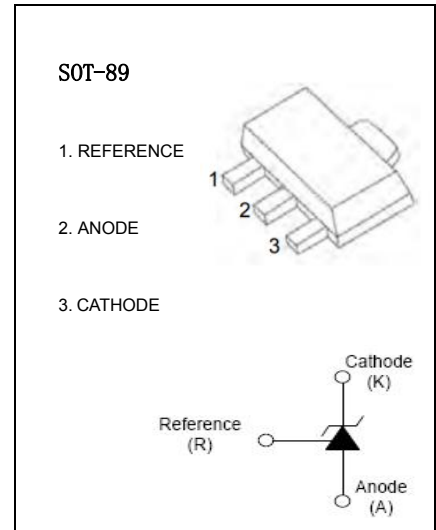
The TL432U is a three-terminal Shunt Voltage Reference providing a highly accurate 1.24V. The TL432U thermal stability and wide operating current, makes it suitable for all variety of applications that are looking for a low cost solution with high performance.

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 to 100mA

APPLICATION

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



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

Parameter	Symbol	Value	Units
Cathode Voltage	V_{KA}	18	V
Cathode Current Range (continuous)	I_{KA}	100	mA
Reference Input Current Range	I_{ref}	6	μA
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Operating Temperature	T_{opr}	$\sim +70$	$^{\circ}C$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	$-65 \sim +150$	$^{\circ}C$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference input voltage (Fig 1)	V_{ref}	$V_{\text{KA}}=V_{\text{REF}}, I_{\text{KA}}=10\text{mA}$	1.2214		1.2586	V
Deviation of reference voltage over full temperature range (Fig 1)	$\Delta V_{\text{ref(DEV)}}$	$V_{\text{KA}}=V_{\text{REF}}, I_{\text{KA}}=10\text{mA}$ $0^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$			16	mV
Ratio of change in reference input voltage to the change in cathode voltage (Fig 2)	$\Delta V_{\text{ref}} / \Delta V_{\text{KA}}$	$I_{\text{KA}}=10\text{mA},$ $\Delta V_{\text{KA}}=1.25\text{V} \sim 15\text{V}$			2.4	mV/V
Deviation of reference input current over full temperature range (Fig 2)	$\Delta I_{\text{ref}} / \Delta T$	$I_{\text{KA}}=10\text{mA}, R_1=10\text{k}\Omega,$ $R_2=\infty, 0^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$			0.6	μA
Minimum cathode current for regulation (Fig 1)	$I_{\text{KA(min)}}$	$V_{\text{KA}}=V_{\text{REF}}$			0.1	mA
Off-state cathode current(Fig 3)	I_{off}	$V_{\text{KA}}=15\text{V}, V_{\text{REF}}=0$			0.5	μA
Dynamic impedance	Z_{KA}	$V_{\text{KA}}=V_{\text{REF}}, I_{\text{KA}}=0.1 \sim 20\text{mA},$ $f \leq 1.0\text{kHz}$			0.5	Ω

CLASSIFICATION OF V_{ref}

Rank	1%	1.5%
Range	1.2276~1.2524	1.2214~1.2586

Typical Characteristics

