

PROGRAMMABLE PRECISION REFERENCE

LR432AALT1G

Description

The LR432AALT1G is a three-terminal adjustable regulator with a guaranteed thermal stability over applicable temperature ranges. The output voltage may be set to any value between V_{REF} (approximately 1.24V) and 18V with two external resistors. It provides very wide applications, including shunt regulator, series regulator, switching regulator, voltage reference and others.



SOT-23 1: Ref; 2: Cathode; 3: Anode

Features:

- Precise Reference Voltage to 1.24V
- Guaranteed 0.5% Reference Voltage Tolerance
- Sink Current Capability, 80 μ A to 100mA
- Quick Turn-on
- Adjustable Output Voltage, $V_o = V_{REF}$ to 18V
- 0.2 Ω Typical Output Impedance
- Marking: EA

We declare that the material of product is ROHS compliant and does not contain any Br, Cl, and Sb203

Ordering Information

Device	Marking	Shipping
LR432AALT1G	EA	3000/Tape & Reel
LR432AALT3G	EA	10000/Tape & Reel

Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
V_{KA}	Cathode voltage	18	V
I_K	Continuous cathode current range	100	mA
I_{REF}	Reference current range	3	mA
T_j	Operating Junction Temperature Range	150	°C
T_{opr}	Operating Ambient Temperature	- 40 to 105	°C

Electrical Characteristics $T_A=25^{\circ}\text{C}$ (unless otherwise noted)

Symbol	Parameter	Test Conditions	LR432AALT1G			Unit
			Min	Typ	Max	
V_{REF}	Reference voltage	$V_{KA}=V_{REF}$, $I_K=10\text{mA}$ (Fig. 1) $T_A=25^{\circ}\text{C}$	1.233	1.240	1.246	V
V_{DEV}	V_{REF} Temp Deviation	T_A =full range(see Note1) $V_{KA}=V_{REF}$, $I_K=10\text{mA}$ (Fig. 1)		10	25	mV
$\Delta V_{REF}/\Delta V_{KA}$	Ratio of Change in V_{REF} to Change in Cathode Voltage	$I_K=10\text{mA}$, $V_{KA}=18\text{V}$ to V_{REF} (Fig. 2)		-1	-2.7	mV / V
I_{REF}	Reference Input Current	$I_K=10\text{mA}$, $R_1=10\text{k}\Omega$ $R_2=\infty$ (Fig.2)		0.25	0.5	μA
$I_{REF(DEV)}$	I_{REF} Temp Deviation	T_K =full range (see Note 1), $R_1=10\text{k}\Omega$, $R_2=\infty$, $I_K=10\text{mA}$ (Fig. 2)		0.05	0.3	μA
$I_k(\text{off})$	Off-state cathode current	$V_{REF}=0\text{V}$, (Fig.3) $V_K=18\text{V}$		0.04	0.5	μA
Z_{ka}	Dynamic Output Impedance	$V_{ka}=V_{ref}$, $I_k=1\text{mA}$ to 100mA $F \leq 1\text{kHz}$ (Fig. 1)		0.2	0.4	Ω
$I_K(\text{MIN})$	Minimum Operating Current	$V_{KA}=V_{REF}$ (Fig. 1)		60	80	μA

TEST CIRCUITS

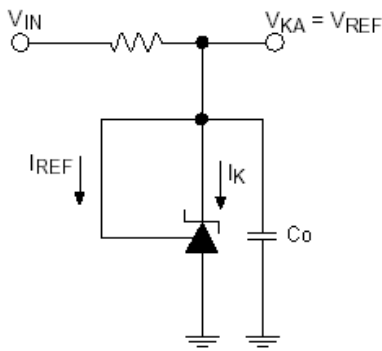


Fig.1 Test Circuit for $V_{ka}=V_{ref}$,
 $V_o=V_{ka}=V_{ref}$, $C_o=0.1\mu F$

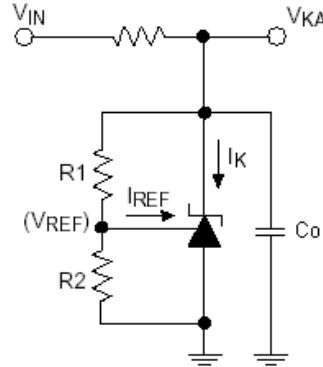


Fig.2 Test Circuit for $V_{ka}>V_{ref}$,
 $V_o=V_{ka}=V_{ref}\cdot(1+R1/R2)+I_{ref}\cdot R1$,
 $C_o=0.1\mu F$

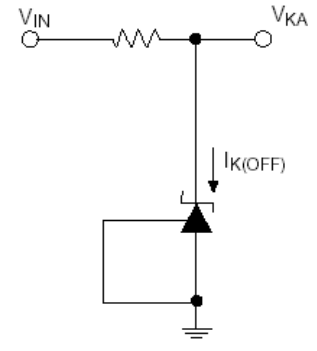


Fig.3 Test Circuit for $I_k(off)$

Typical Performance Characteristics

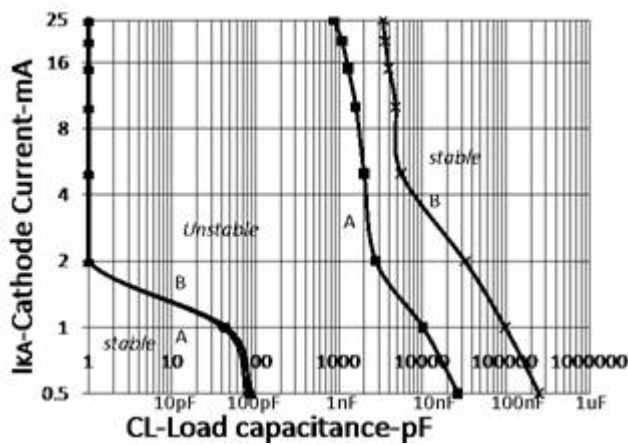
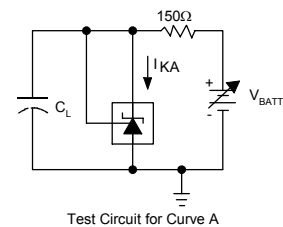
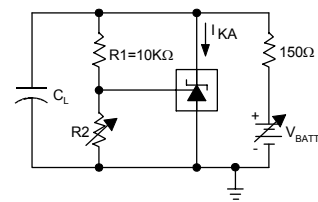


Fig.4 STABILITY BOUNDARY CONDITIONS



Test Circuit for Curve A



Test Circuit for Curve B, C, and D

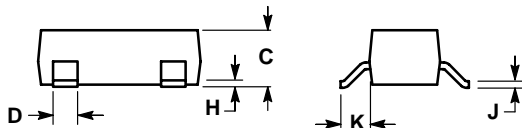
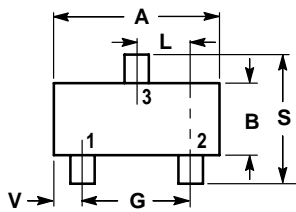
Unstable region	VKA(V)	R1(KΩ)	R2(KΩ)
A	Vref	0	∞
B	5.0	30	10

LR432AALT1G LINEAR INTEGRATED CIRCUIT

SOT-23

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

