

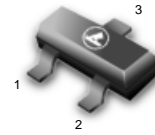
# LR432ALT1G LINEAR INTEGRATED CIRCUIT

## PROGRAMMABLE PRECISION REFERENCE

### Description

The LRC LR432ALT1G 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.

## LR432ALT1G



SOT-23

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

### Features:

- Precise Reference Voltage to 1.24V
- Guaranteed 1% Reference Voltage Tolerance
- Sink Current Capability, 80 $\mu$ A to 100mA
- Quick Turn-on
- Adjustable Output Voltage,  $V_o = V_{REF}$  to 18V
- 0.2  $\Omega$  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
LR432ALT1G	EA	3000/Tape & Reel
LR432ALT3G	EA	10000/Tape & Reel

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## 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	LR432ALT1G			Unit
			Min	Typ	Max	
$V_{REF}$	Reference voltage	$V_{KA}=V_{REF}$ , $I_K=10\text{mA}$ (Fig. 1) $T_A=25^{\circ}\text{C}$	1.228	1.240	1.252	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	$\mu\text{A}$
$I_{REF(DEV)}$	$I_{REF}$ 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	$\mu\text{A}$
$I_k(\text{off})$	Off-state cathode current	$V_{REF}=0\text{V}$ , (Fig.3) $V_K=18\text{V}$		0.04	0.5	$\mu\text{A}$
$Z_{ka}$	Dynamic Output Impedance	$V_{ka}=V_{ref}$ , $I_k=1\text{mA}$ to $100\text{mA}$ $F \leq 1\text{kHz}$ (Fig. 1)		0.2	0.4	$\Omega$
$I_K(\text{MIN})$	Minimum Operating Current	$V_{KA}=V_{REF}$ (Fig. 1)		60	80	$\mu\text{A}$

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## TEST CIRCUITS

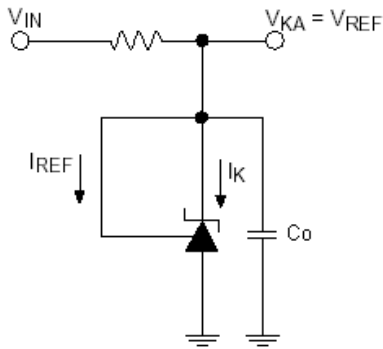


Fig.1 Test Circuit for  $V_{ka}=V_{ref}$ ,  
 $V_o=V_{ka}=V_{ref}$ ,  $C_o=0.1\mu F$

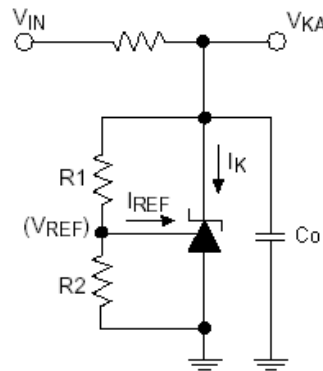


Fig.2 Test Circuit for  $V_{ka}>V_{ref}$ ,  
 $V_o=V_{ka}=V_{ref}\cdot(1+R_1/R_2)+I_{ref}\cdot R_1$ ,  
 $C_o=0.1\mu F$

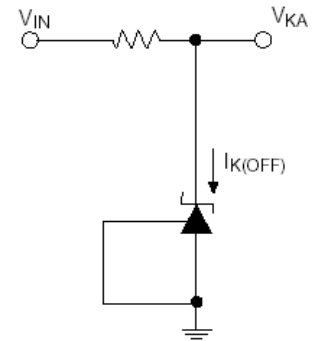


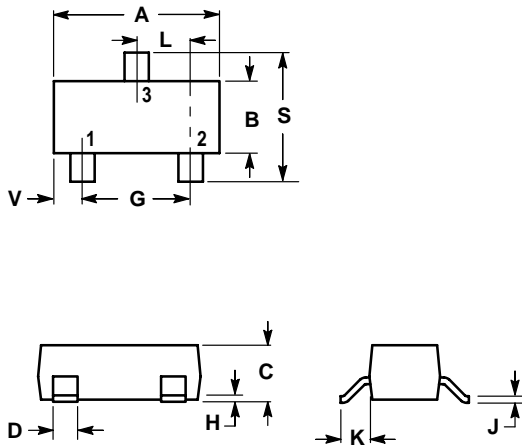
Fig.3 Test Circuit for  $I_{k(off)}$

# LR432ALT1G LINEAR INTEGRATED CIRCUIT

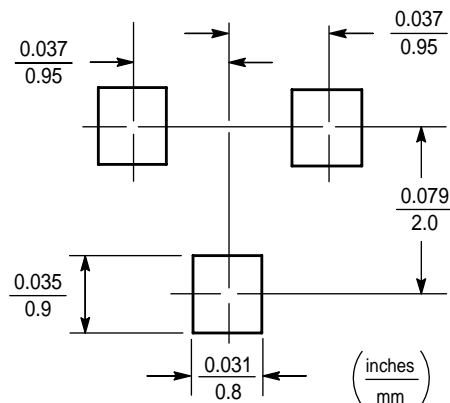
## SOT-23

### 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



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