

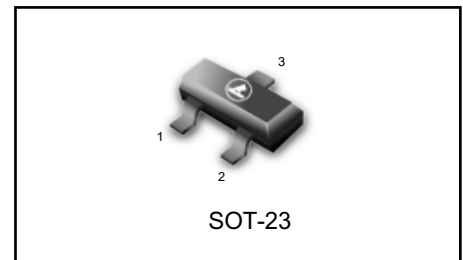
LR432ALT1G LINEAR INTEGRATED CIRCUIT

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 1: Ref; 2: Cathode; 3: Anode

Features:

- Precise Reference Voltage to 1.24V
- Guaranteed 1% 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 |
|------------|---------|-------------------|
| 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 | 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 |

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TEST CIRCUITS

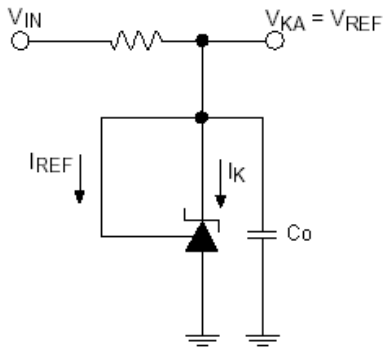


Fig.1 Test Circuit for $V_{ka}=V_{ref}$,
 $V_o=V_{ka}=V_{ref}$, $C_o=0.1\mu F$

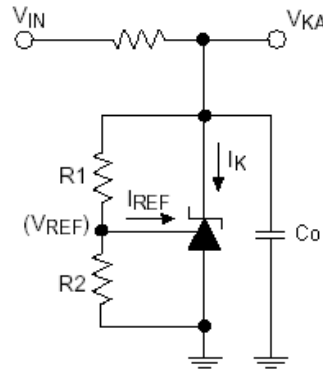


Fig.2 Test Circuit for $V_{ka}>V_{ref}$,
 $V_o=V_{ka}=V_{ref}\cdot(1+R_1/R_2)+I_{ref}\cdot R_1$,
 $C_o=0.1\mu F$

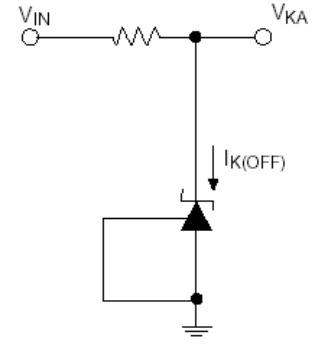


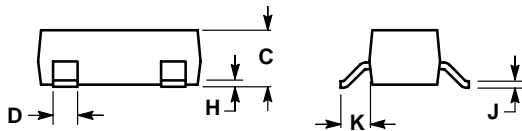
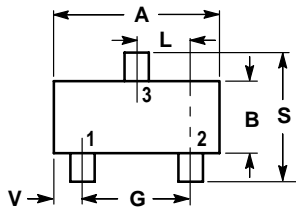
Fig.3 Test Circuit for $I_{k(off)}$

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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 |

