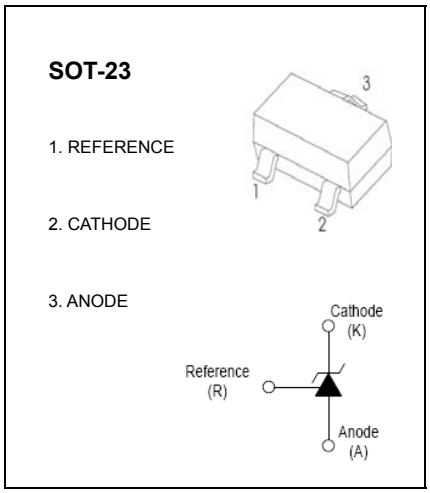
# Jiangsu Weida Semiconductor Co.,Lid

## CJ432 Adjustable Reference Source

**CJ432** Adjustable Accurate Reference Source




### DEVICE DESCRIPSION

The CJ432 is a three-terminal Shunt Voltage Reference providing a highly accurance 1.24V. The CJ432 thermal stability and wide operating current, makes is sritable 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 to100mA

### APPLICATION

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

### ABSOLUTE MAXIMUM RATINGS (Operating temperature rangeapplies 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 | ℃/W |
| Operating Temperature | $T_{opr}$ | 0~+70 | ℃ |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{stg}$ | -65~+150 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)

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

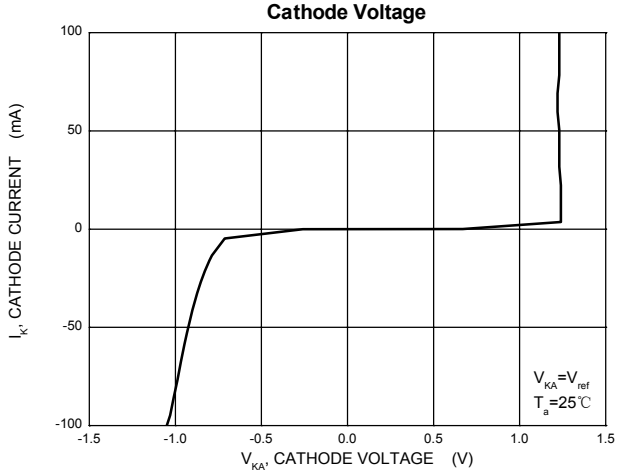
**CLASSIFICATION OF $V_{ref}$**

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

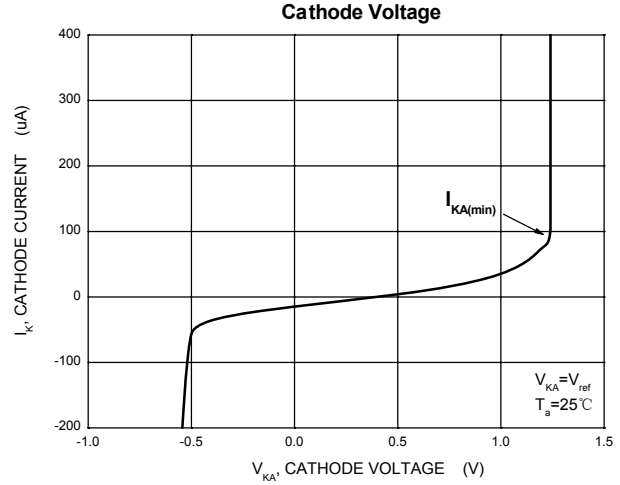
# Typical Characteristics

# CJ432

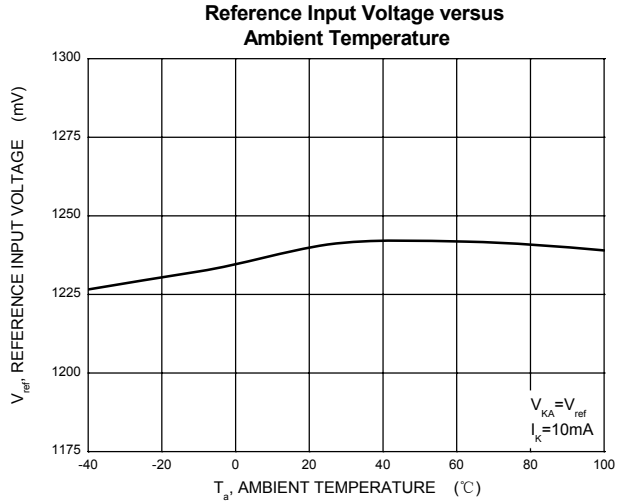
**Cathode Current versus Cathode Voltage**

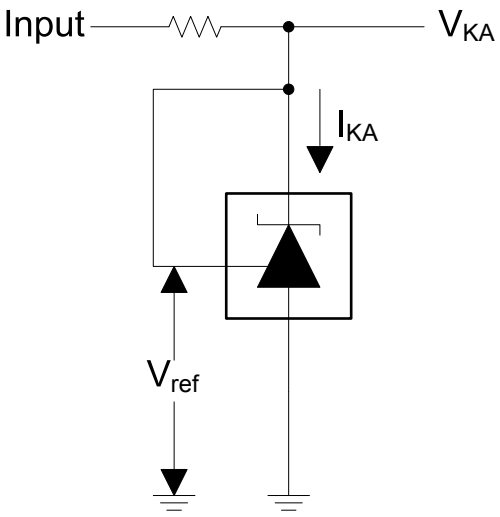



**Cathode Current versus Cathode Voltage**

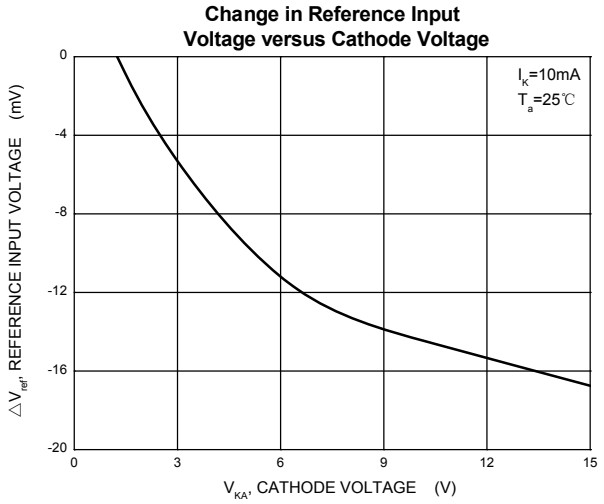


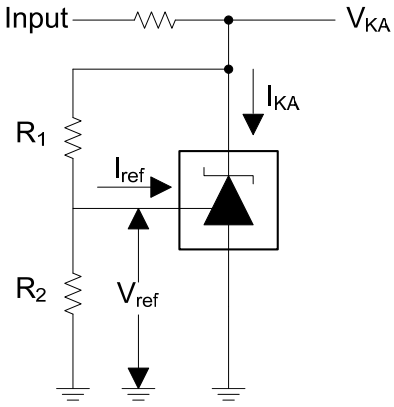

**Reference Input Voltage versus Ambient Temperature**



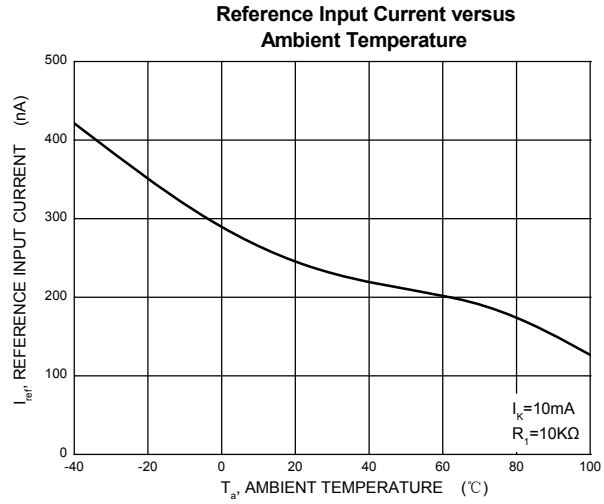



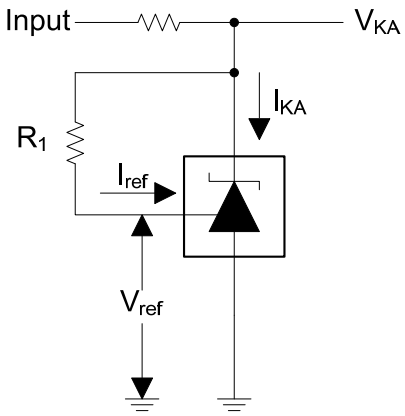

Test Circuit for $V_{KA}=V_{ref}$



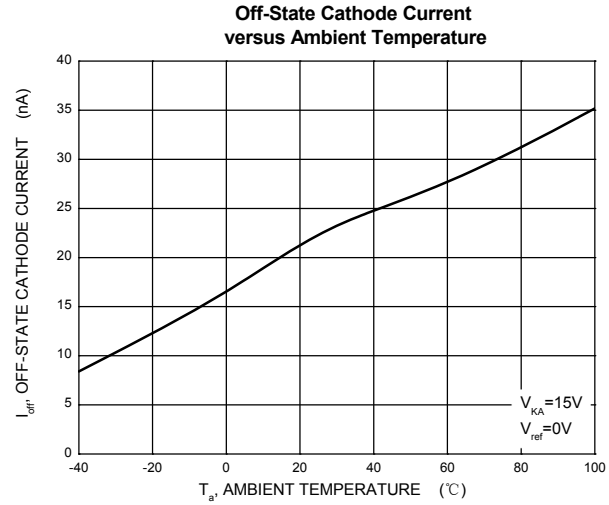



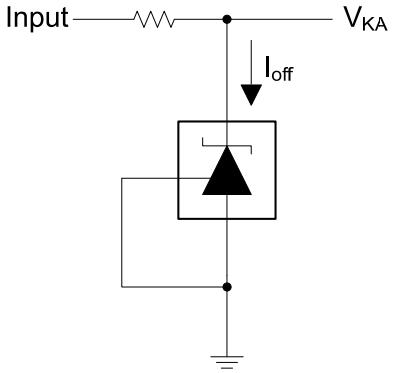

Test Circuit for $V_{KA}=V_{ref}(1+R1/R2)+R1*I_{ref}$




Test Circuit for $I_{ref}$




Test Circuit for $I_{off}$

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