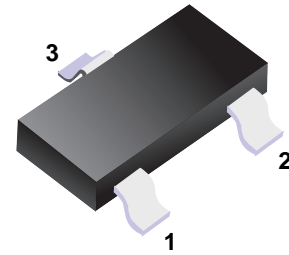


■ Adjustable Accurate Reference Source

■ Features

- The output voltage can be adjusted to 36V
- Low dynamic output impedance, its typical value is  $0.2\ \Omega$
- Trapping current capability is 1 to 100mA
- The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C
- The effective temperature compensation in the working range of full temperature
- Low output noise voltage
- Fast on-state response



1.Reference  
2.Cathode  
3.Anode

■ Simplified outline(SOT-23)

■ Classification Of VREF

|       |             |             |             |             |
|-------|-------------|-------------|-------------|-------------|
| Rank  | 0.3%        | 0.5%        | 1%          | 2%          |
| Range | 2.493~2.508 | 2.487~2.512 | 2.475~2.525 | 2.450~2.550 |

■ Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

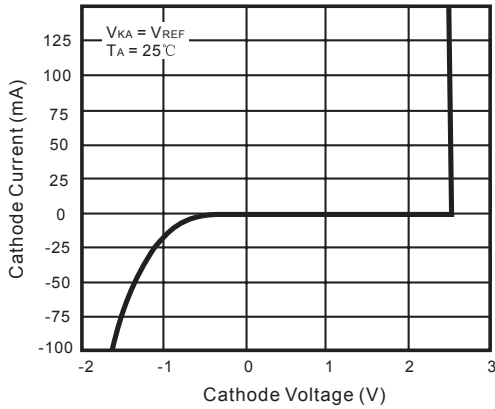
| Parameter                          | Symbol           | Rating      | Unit |
|------------------------------------|------------------|-------------|------|
| Cathode Voltage                    | V <sub>KA</sub>  | 37          | V    |
| Cathode Current Range (Continuous) | I <sub>KA</sub>  | -100 ~ +150 | mA   |
| Reference Input Current Range      | I <sub>REF</sub> | 0.05 ~ +10  | mA   |
| Power Dissipation                  | P <sub>D</sub>   | 350         | mW   |
| Operating Temperature              | T <sub>OPR</sub> | 0 ~ 70      | °C   |
| Storage Temperature Range          | T <sub>STG</sub> | -65 ~ +150  | °C   |

■ Electrical Characteristics (T<sub>a</sub> = 25°C unless otherwise specified)

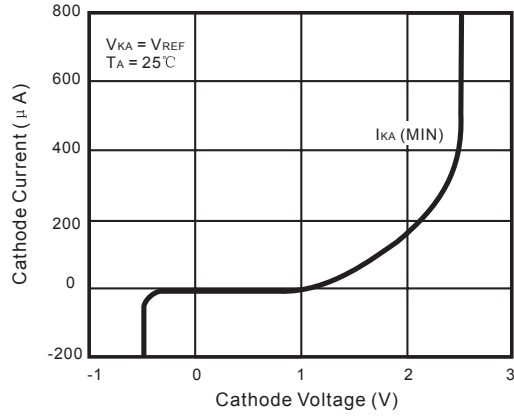
| Parameter   | Symbol                         | Testconditons  | Min  | Typ  | Max  | Unit     |
|---|--------------------------------|--|------|------|------|----------|
| Reference Input Voltage   | V <sub>REF</sub>               | V <sub>KA</sub> = V <sub>REF</sub> , I <sub>KA</sub> = 10mA  | 2.45 | 2.5  | 2.55 | V        |
| Deviation of Reference Input Voltage Over Temperature (*)                   | $\Delta V_{REF}/\Delta T$      | V <sub>KA</sub> = V <sub>REF</sub> , I <sub>KA</sub> = 10mA<br>T <sub>min</sub> ≤ T <sub>a</sub> ≤ T <sub>max</sub>    |      | 4.5  | 17   | mV       |
| Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage | $\Delta V_{REF}/\Delta V_{KA}$ | I <sub>KA</sub> = 10mA, $\Delta V_{KA}$ = 10V ~ V <sub>REF</sub>   |      | -1.0 | -2.7 | mV/V     |
|   |                                | I <sub>KA</sub> = 10mA, $\Delta V_{KA}$ = 36V ~ 10V  |      | -0.5 | -2.0 | mV/V     |
| Reference Input Current   | I <sub>REF</sub>               | I <sub>KA</sub> = 10mA, R <sub>1</sub> = 10K $\Omega$ , R <sub>2</sub> = $\infty$                                      |      | 1.5  | 4    | $\mu$ A  |
| Deviation of Reference Input Current Over Full Temperature Range            | $\Delta I_{REF}/\Delta T$      | I <sub>KA</sub> = 10mA, R <sub>1</sub> = 10K $\Omega$ , R <sub>2</sub> = $\infty$<br>T <sub>A</sub> = Full Temperature |      | 0.4  | 1.2  | $\mu$ A  |
| Minimum Cathode Current for Regulation                                      | I <sub>KA(min)</sub>           | V <sub>KA</sub> = V <sub>REF</sub>   |      | 0.45 | 1.0  | mA       |
| Off-state Cathode Current   | I <sub>KA(OFF)</sub>           | V <sub>KA</sub> = 36V, V <sub>REF</sub> = 0  |      | 0.05 | 1.0  | $\mu$ A  |
| Dynamic Impedance   | Z <sub>KA</sub>                | V <sub>KA</sub> = V <sub>REF</sub> , I <sub>KA</sub> = 1 to 100mA,<br>f ≤ 1.0KHz                                       |      | 0.15 | 0.5  | $\Omega$ |

\* T<sub>MIN</sub> = 0°C, T<sub>MAX</sub> = +70°C

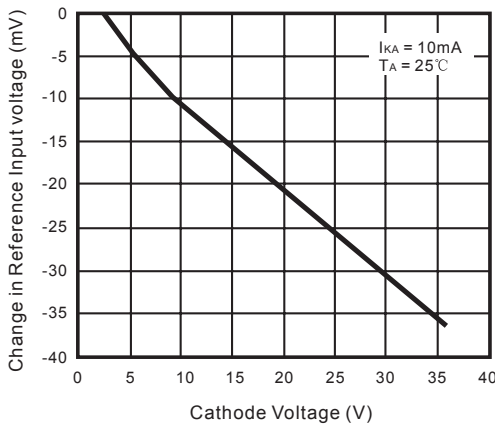
■ Typical Characteristics



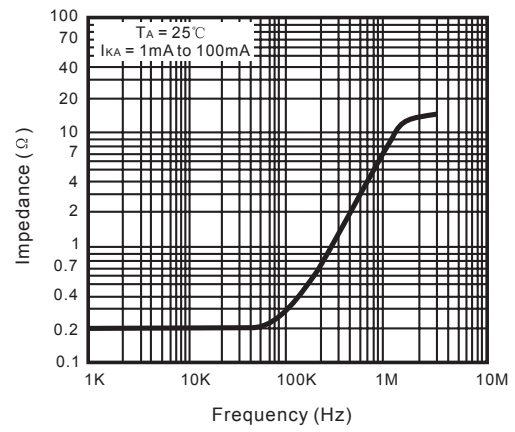
Cathode Current vs. Cathode Voltage



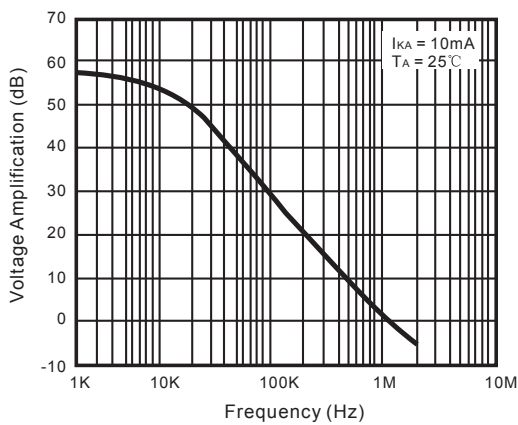
Cathode Current vs. Cathode Voltage



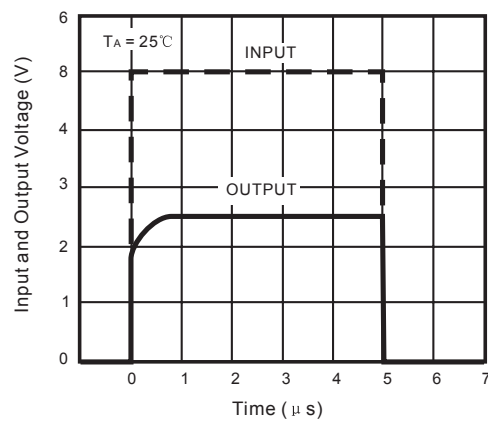
Change in Reference Input Voltage vs. Cathode Voltage



Dynamic Impedance Frequency



Small Signal Voltage Amplification vs. Frequency



Pulse Response

**Package Outline**

**SOT-23**



**DIMENSIONS (mm are the original dimensions)**

| UNIT | A          | A <sub>1</sub><br>max. | b <sub>p</sub> | c            | D          | E          | e   | e <sub>1</sub> | H <sub>E</sub> | L <sub>p</sub> | Q            | v   | w   |
|------|------------|------------------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm   | 1.1<br>0.9 | 0.1                    | 0.48<br>0.38   | 0.15<br>0.09 | 3.0<br>2.8 | 1.4<br>1.2 | 1.9 | 0.95           | 2.5<br>2.1     | 0.45<br>0.15   | 0.55<br>0.45 | 0.2 | 0.1 |

**Summary of Packing Options**

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOT-23  | Tape/Reel, 7" reel  | 3000             | EIA-481-1         |

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Voltage References](#) category:*

*Click to view products by [YFW Electronics](#) manufacturer:*

Other Similar products are found below :

[5962-8686103XC](#) [REF01J/883](#) [SC431ILPRAG](#) [AP432AQG-7](#) [LM4040B25QFTA](#) [EL5226IR](#) [EL5326IR](#) [EL5326IRZ](#) [ISL21007DFB825Z](#)  
[ISL21009BFB812Z](#) [ISL21009CFB812Z](#) [ISL60002BIH312](#) [TS3320AMR](#) [TS3325AMR](#) [TS3330AMR](#) [TS3333AMR](#) [X60003CIG3-41](#)  
[X60003DIG3Z-41T1](#) [X60250V8I](#) [REF3025TB-GT3](#) [SC432BVSNT1G](#) [TL431CPG](#) [LM336Z-5.0](#) [MRTL432](#) [TL431A](#) [LR432ATLT1G](#)  
[TL432](#) [TL431A](#) [TL431NSG-AE2-R](#) [TL432](#) [TL431](#) [TL431](#) [CD431A](#) [TL432](#) [LM285M3-2.5/TR](#) [TL432AIM3/TR](#) [LM431AIM3/TR](#)  
[MC1403MM/TR](#) [TL431CM3/TR](#) [HT432ARTZ](#) [TL431Z-AST](#) [LTL431APKLT1G](#) [JD431A](#) [431S](#) [TL432](#) [WD431NTR-BG](#) [CJ431](#) [CD431](#)  
[TL431A 0.4%](#) [ADR4520ARZ-R7](#)