

## DESCRIPTION

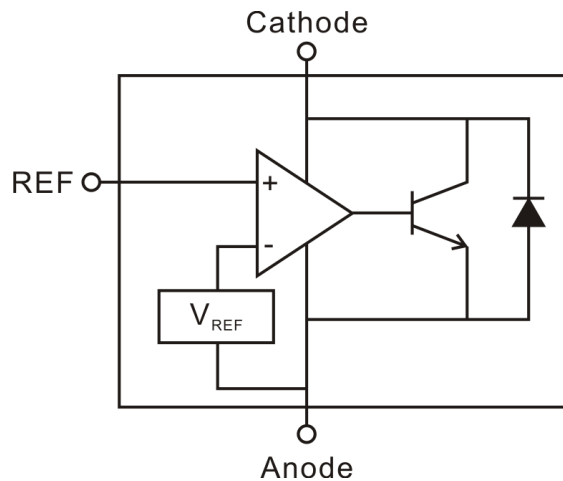
The RS431 series are three-terminal adjustable regulators with guaranteed thermal stability over applicable temperature ranges. The output voltage may be set to any value between  $V_{REF}$  (approximately 2.5V) and 36V with two external resistors. These devices have a typical dynamic output impedance of  $0.2\Omega$ . Active output circuitry provides a very sharp turn-on characteristic, making these devices excellent replacement for zener diodes in many applications.

## FEATURES

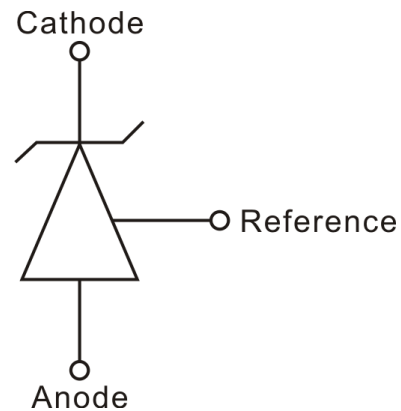
- Programmable Precise Output Voltage from 2.5V to 36V
- High Stability under Capacitive Load
- Low Temperature Deviation: 4.5mV Typical
- Low Dynamic Output Resistance:  $0.2\Omega$  Typical
- Sink Current Capacity from 1mA to 100mA
- Low Output Noise
- Wide Operating Range of  $-40$  to  $125^\circ\text{C}$
- Low Equivalent Full-range Temperature Coefficient with 20PPM/ $^\circ\text{C}$  Typical

## BLOCK DIAGRAM

Functional Block Diagram



Symbol



# APPLICATION CIRCUIT

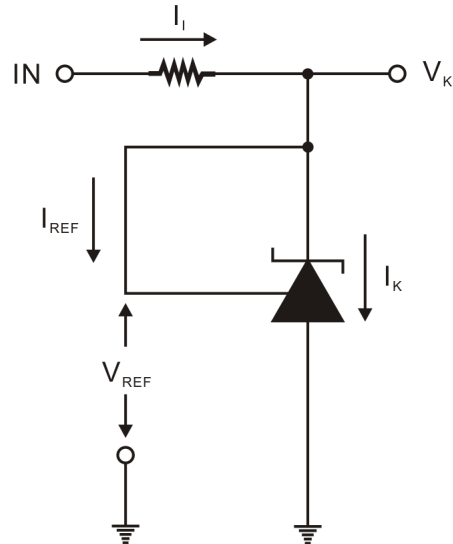


Figure 1.  $V_K = V_{REF}$

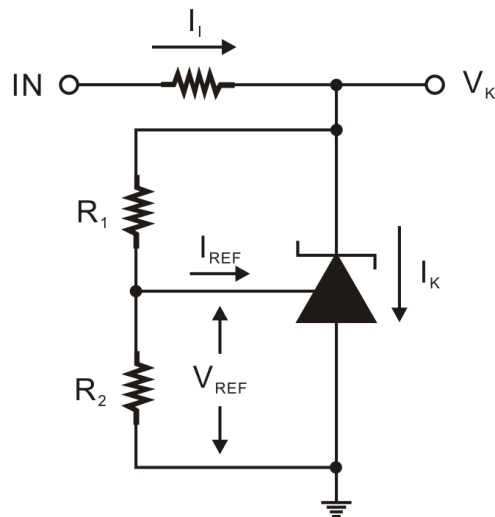


Figure 2.  $V_K > V_{REF}$

Note:  $V_K = V_{REF}(1 + R_1/R_2) + I_{REF} \times R_1$

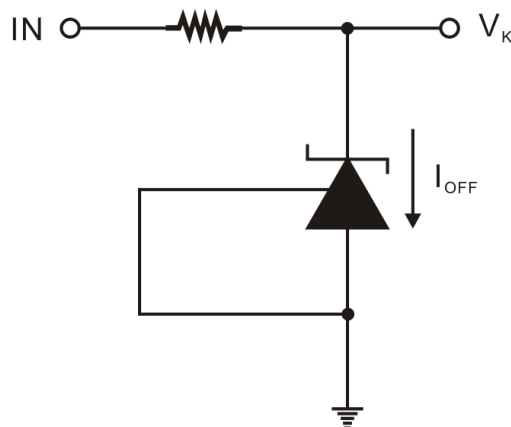


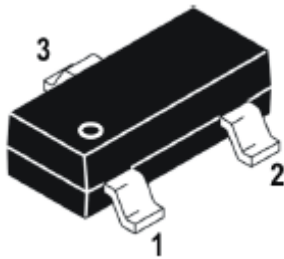
Figure 3. Off-State Current

## ORDER INFORMATION

Device	Device Code
RS431 X YY Z	<p><b>X is Reference voltage precision designator:</b>                      A: 2.5V±0.4%                      B: 2.5V±0.8%</p> <p><b>YY is package designator:</b>                      A: TO-92 (Straight lead option)                      AT: TO-92 (Formed lead option)                      N: SOT-23</p> <p><b>Z is Lead Free designator:</b>                      P: Commercial Standard, Lead (Pb) Free and Phosphorous (P) Free Package                      G: Green (Halogen Free with Commercial Standard)</p>

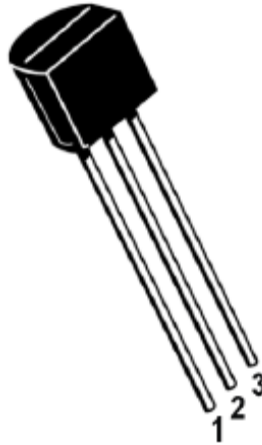
## PIN ASSIGNMENTS

### SOT-23



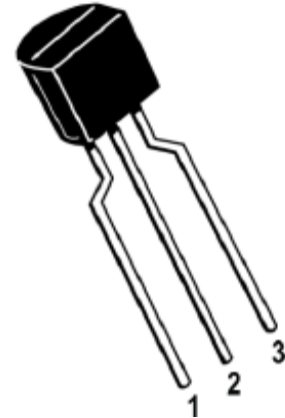
### TO-92

(STRAIGHT LEAD OPTION)



### TO-92

(FORMED LEAD OPTION)



## PIN DESCRIPTION

Package	Pin No.	Description
SOT-23	1	Reference
	2	Cathode
	3	Anode
TO-92	1	Reference
	2	Anode
	3	Cathode

## **IMPORTANT NOTICE**

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