

SOT-89 Encapsulate Adjustable Reference Source

Adjustable Accurate Reference Source

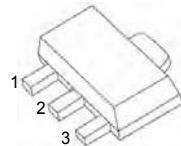
FEATURES

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

MARKING:431

SOT-89

1. REFERENCE
2. ANODE
3. CATHODE



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Cathode Voltage	V_{KA}	37	V
Cathode Current Range (Continuous)	I_{KA}	-100~+150	mA
Reference Input Current Range	I_{ref}	0.05~+10	mA
Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	$^\circ\text{C}/\text{W}$
Operating Ambient Temperature Range	T_{opr}	-25~+85	$^\circ\text{C}$
Storage temperature Range	T_{stg}	-65~+150	$^\circ\text{C}$
Operating JunctionTemperature	T_j	150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

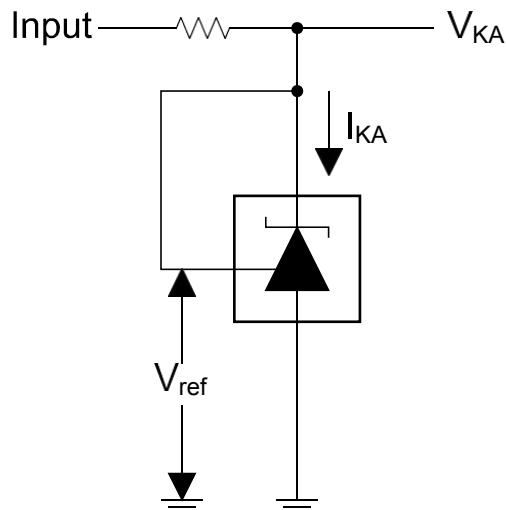
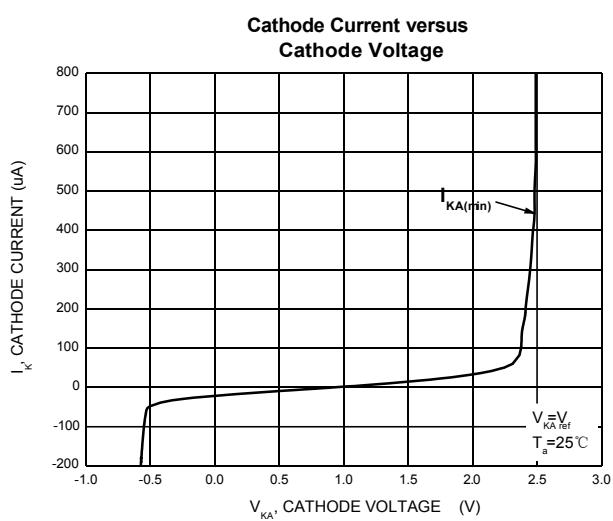
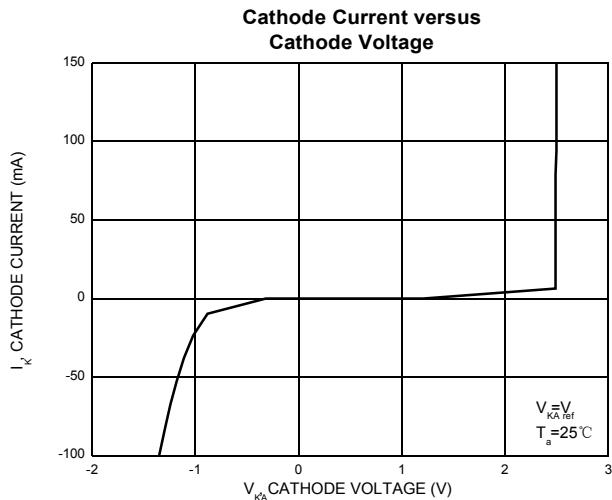
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Reference input voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$	2.47	2.495	2.52	V	
Deviation of reference Input voltage over temperature (note)	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$ $T_{MIN}\leq T_a \leq T_{MAX}$		4.5	17	mV	
Ratio of change in reference Input voltage to the change in cathode voltage	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10\text{mA}$	$\Delta V_{KA}=10\text{V} \sim V_{REF}$		-1.0	-2.7	mV/V
			$\Delta V_{KA}=36\text{V} \sim 10\text{V}$		-0.5	-2.0	mV/V
Reference input current	I_{ref}	$I_{KA}=10\text{mA}, R_1=10\text{k}\Omega, R_2=\infty$		1.5	4	μA	
Deviation of reference input current over full temperature range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10\text{mA}, R_1=10\text{k}\Omega, R_2=\infty$ $T_A=-25 \text{ to } 85^\circ\text{C}$		0.4	1.2	μA	
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA	
Off-state cathode current	$I_{KA(OFF)}$	$V_{KA}=36\text{V}, V_{REF}=0$		0.05	1.0	μA	
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}, I_{KA}=1 \text{ to } 100\text{mA}$ $f \leq 1.0\text{kHz}$		0.15	0.5	Ω	

Note: $T_{MIN}=-25^\circ\text{C}$, $T_{MAX}=+85^\circ\text{C}$

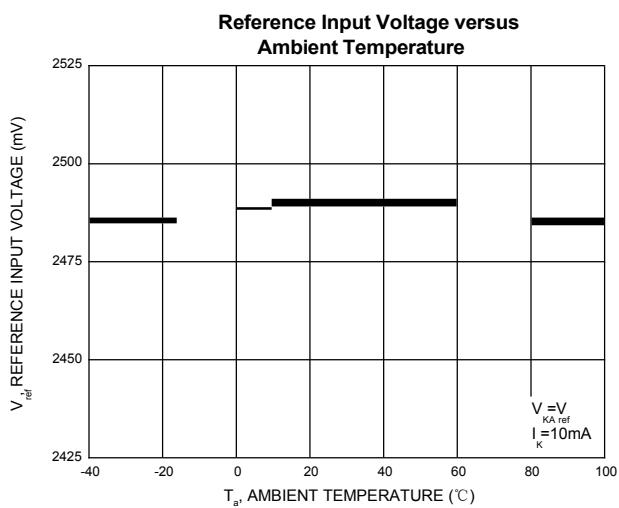
CLASSIFICATION of V_{ref}

Rank	0.5%	1%
Range	2.483-2.507	2.47-2.52

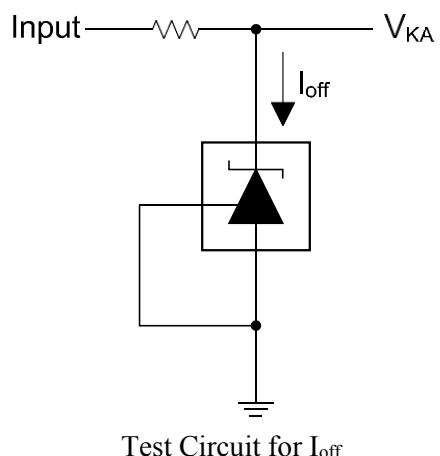
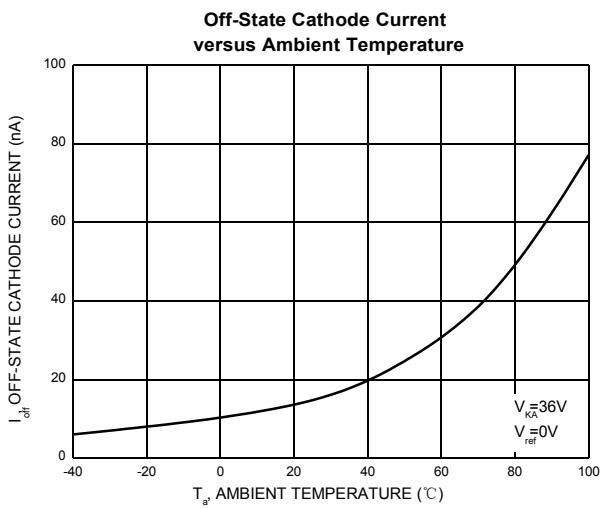
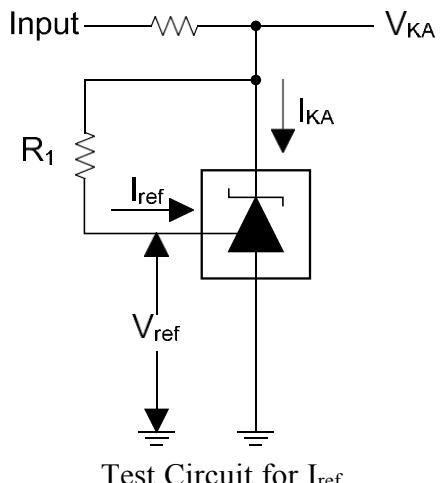
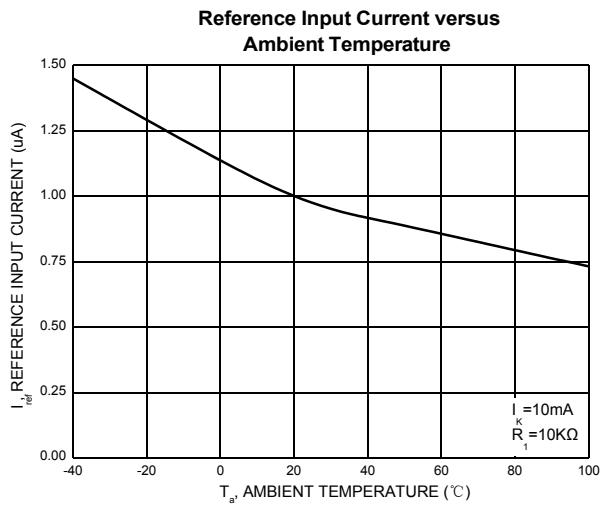
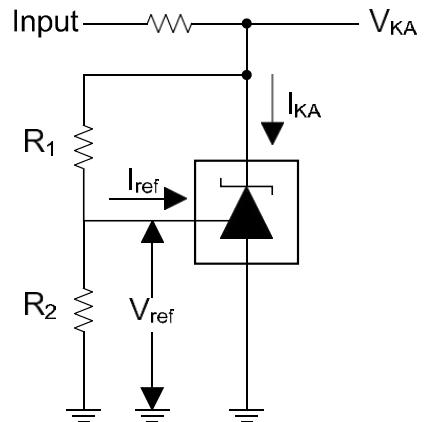
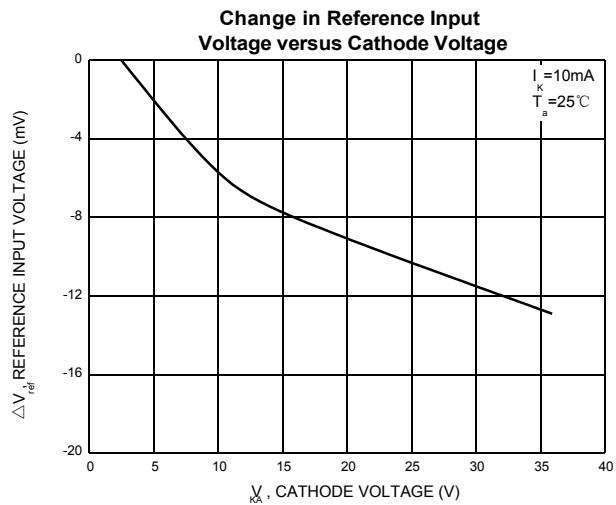
Typical Characteristics



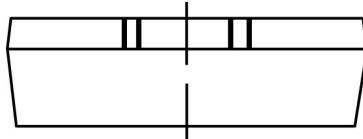
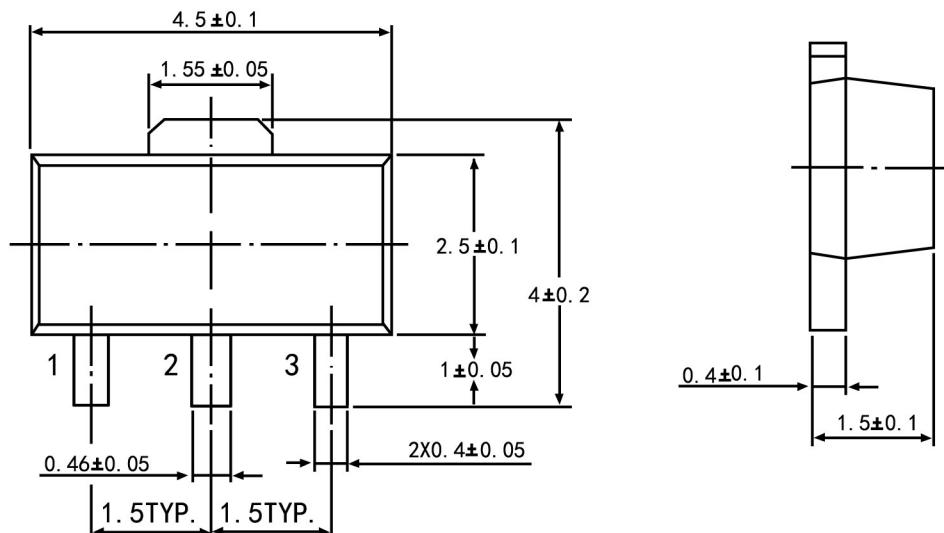
Test Circuit for $V_{KA} = V_{ref}$



Typical Characteristics



SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions In mm		