

## Adjustable Reference Source

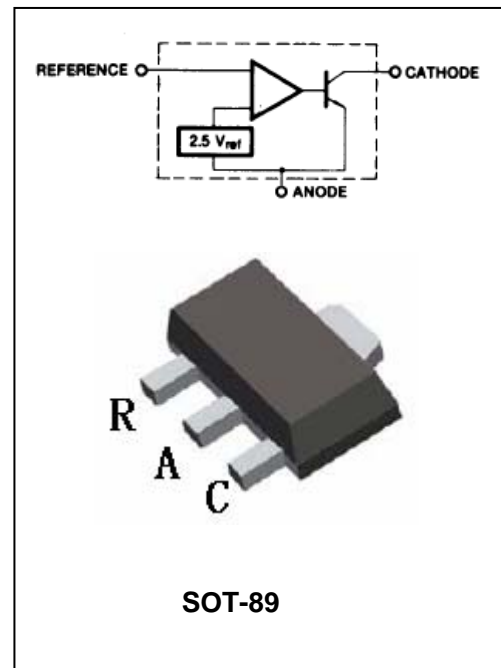
## BL431A

### 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 effective temperature compensation in the working.
- Low output noise voltage.
- Fast on -state respons
- The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C.



Lead-free



### APPLICATIONS

- Adjustable accurate reference source.

### ORDERING INFORMATION

Type No.	Marking	Package Code
BL431A	431	SOT-89

### MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
$V_{KA}$	Cathode voltage	37	V
$I_{KA}$	Cathode current range(Continuous)	-100 to +150	mA
$I_{ref}$	Reference input current range	0.05 to 10	mA
$P_D$	Power dissipation	770	mW
$T_{OPR}$	Operating temperature range	-25 to +85	°C
$T_j, T_{stg}$	Storage temperature range	-65 to +150	°C



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## BL431A

### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference input voltage	$V_{ref}$	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.44	2.495	2.55	V
Load regulation	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_A \leq T_{max}$		4.5	17	mV
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10mA$	$\Delta V_{KA}=10V - V_{ref}$	-1.0	-2.7	mV/V
			$\Delta V_{KA}=36V - 10V$	-0.5	-2.0	mV/V
Reference input current	$I_{ref}$	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$		1.5	4	$\mu A$
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta V_{ref}/\Delta T$	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$ $T_A = \text{Full Range}$		0.4	1.2	$\mu A$
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA(OFF)}$	$V_{KA}=36V, V_{REF}=0$		0.05	1.0	$\mu A$
Dynamic impedance	$Z_{KA}$	$V_{KA}=V_{REF}, I_{KA}=1 \text{ to } 100mA$ $f \geq 1.0KHz$		0.15	0.5	$\Omega$

Note:  $T_{MIN}=0^\circ C, T_{MAX}=+70^\circ C$

### CLASSIFICATION OF $V_{ref}$

Rank	0.5%	1%	2%
Range	2.483-2.507	2.470-2.520	2.440-2.550

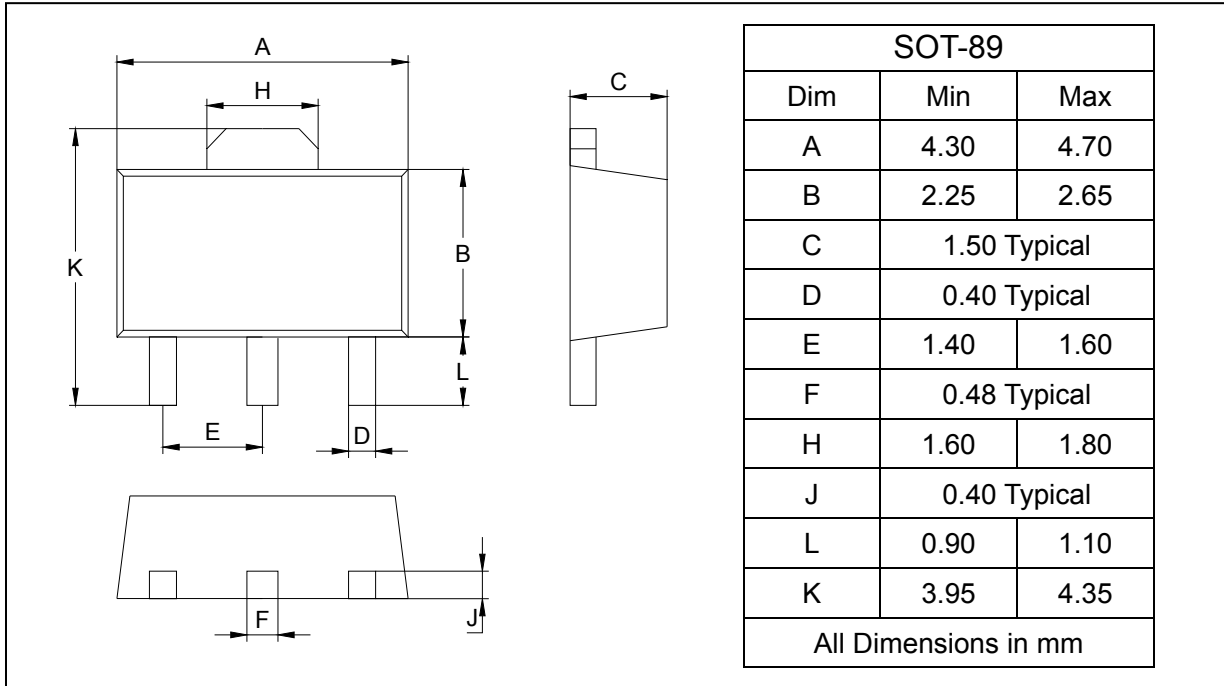
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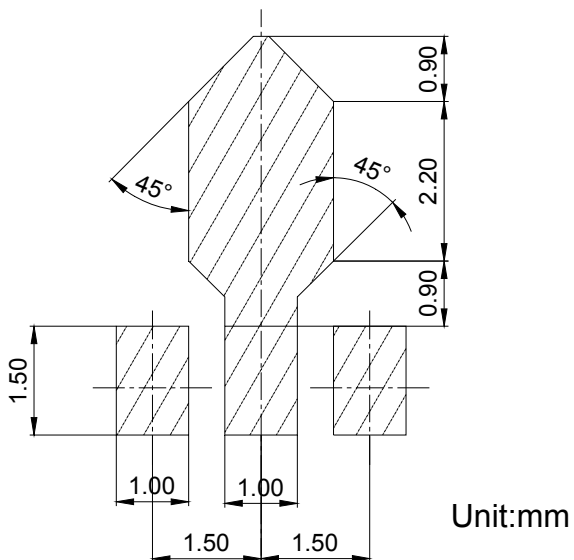
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
BL431A	SOT-89	1000/Tape&Reel