

Adjustable Reference Source

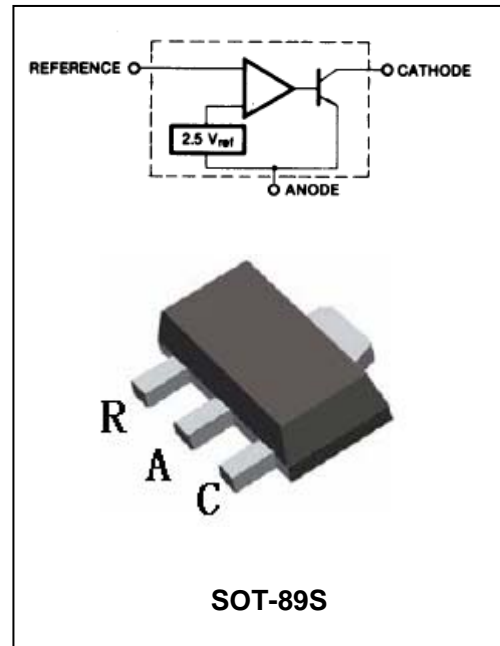
BL431

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
BL431	431	SOT-89S

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
$V_{(ESD)}$	Electrostatic discharge Human-body model(HBM),per ANSI/ESDA/JEDEC JS-001 ^(Note1)	± 2000	V
	Electrostatic discharge Charged-device model(CDM), per JEDEC specification JESD22C101 ^(Note2)	± 1000	
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	500	mW
T_j	Junction Temperature	150	°C
T_{stg}	Storage temperature range	-65 to +150	°C

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Notes:

1. JEDEC document JEP155 states that 500-v HBM allows safe manufacturing with a standard ESD control process. Manufacturing with less than 500-v HBM is possible with the necessary precautions.
2. JEDEC document JEP157 states that 250-v CDM allows safe manufacturing with a standard ESD control process. Manufacturing with less than 250-v CDM is possible with the necessary precautions.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference input voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.45	2.5	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	μA
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$ $T_A= Full Range$		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	$I_{KA(OFF)}$	$V_{KA}=36V, V_{REF}=0$		0.05	1.0	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}, I_{KA}=1 to 100mA$ $f \geq 1.0KHz$		0.15	0.5	Ω

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

CLASSIFICATION OF V_{ref}

Rank	0.5%	1%	2%
Range	2.488-2.512	2.475-2.525	2.450-2.550

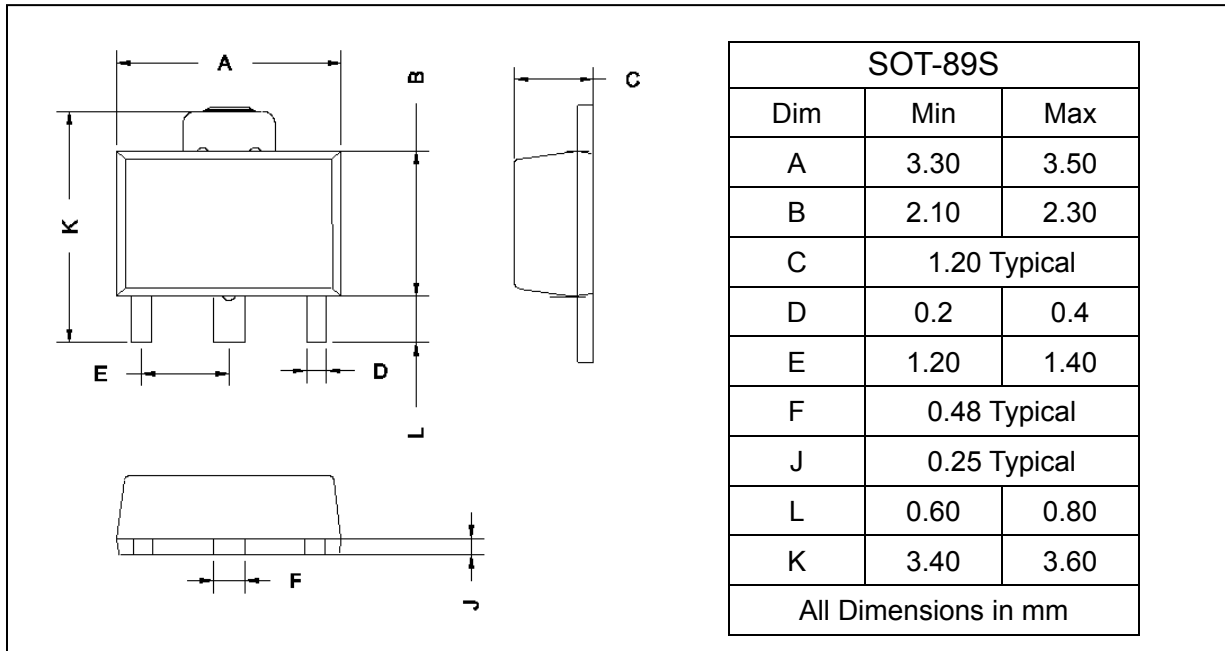
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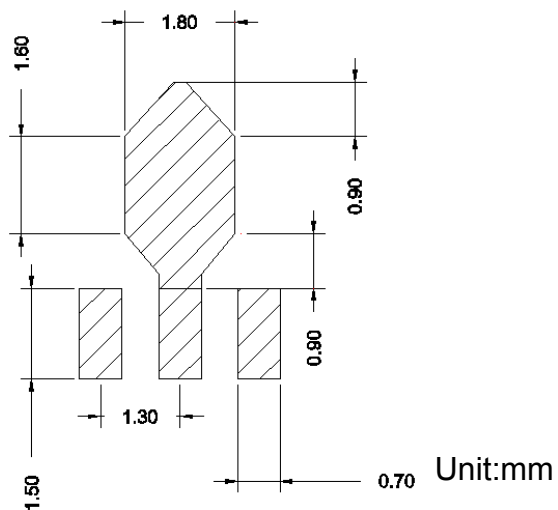
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89S



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BL431	SOT-89S	1500/Tape&Reel