

Features

- On-wafer Vref trimming $\pm 0,3\%$
- Adjustable Output Voltage
- Fast Turn-On Response
- Sink Current Capability 1mA to 100mA
- Low Output Noise
- Industrial temperature range
- RoHS and green compliant packages

Applications

- Power Regulator

General Description

The LD6302 are three-terminal adjustable shunt regulators with a specified thermal stability. The output voltage may be set to any value between Vref (approximately 2.5V) and 36V with two external resistors.

The active output circuitry provides a very sharp turn-on characteristic, making these devices an excellent replacement for zener diodes in many applications.

For a wider application, the package is available in SOT-89, TO-92, and SOT-23.

Equivalent Block Diagram

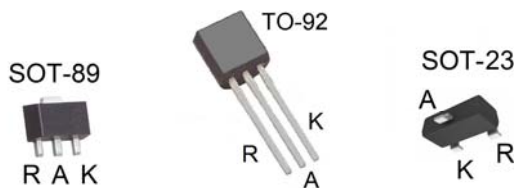


Ordering Information

Part No.	Package	Packing Options	
		Bag(BG)	Tape & Reel(TR)
LD6302	SOT-89-3	LD6302L5-BG	LD6302L5-TR
	TO-92-3	LD6302T1-BG	N/A
	SOT-23-3	LD6302L1-BG	LD6302L1-TR

- Package material default is "Green" package.

Package Pin Out



Product Marking

LD8888
SSSSS...

- ◇ Line 1 – "LD" is a fixed character
8888: product name
- ◇ Line 2 – SSSSS...: lot number

Absolute Maximum Ratings

Parameter	Maximum	Units
Cathode voltage	20	V
Continuous cathode current range	-100 to 150	mA
Reference input current range	0.050 to 10	mA
Operating free-air temperature range	-40 to 125	°C
Lead temperature (1.6mm aside from the case,10 seconds)	260	°C

The values beyond the boundaries of absolute maximum rating may cause the damage to the device. Functional operation in this context is not implied. Continuous use of the device at the absolute rating level might influence device reliability. All voltages have their reference to device ground.

Electrical Characteristics

T_A=25°C unless specified, otherwise minimum and maximum values are guaranteed by production testing requirements.

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Reference voltage accuracy at wafer test	dVref	Wafer testing V _{KA} =Vref	-0.3%	0%	0.3%	%
Reference input voltage	Vref	V _{KA} =Vref, I _K =10mA	2470	2495	2520	mV
Deviation of Reference input voltage over full temperature range	Vref(dev)	V _{KA} =Vref, I _K =10mA, 0°C≤T _A ≤+70°C	-	8	17	mV
Ratio of change in reference input voltage to the change in cathode voltage	ΔVref/V _{KA}	I _K =10mA, V _{KA} =10V to Vref	-2.7	-1.0	-	mV/V
		I _K =10mA, V _{KA} = 36V to10V	-2.0	-0.4	-	
Reference input current	Iref	I _K =10mA, R1=10KΩ, R2=∞	-	0.5	1.2	μA
Deviation of Reference input current over full temperature range	Iref(dev)	I _K =10mA, R1=10KΩ, R2=∞, 0°C≤T _A ≤+70°C	-	0.4	1.2	μA
Minimum cathode current for regulation	Imin	V _{KA} =Vref	-	0.4	1.0	mA
Off-state cathode current	Ioff	V _{KA} =36V, Vref=0V	-	0.1	1	μA
Dynamic impedance	Z _{KAL}	V _{KA} =Vref, I _K =1mA to 100mA, f≤1KHz	-	0.25	0.5	Ω

Typical Application Circuit

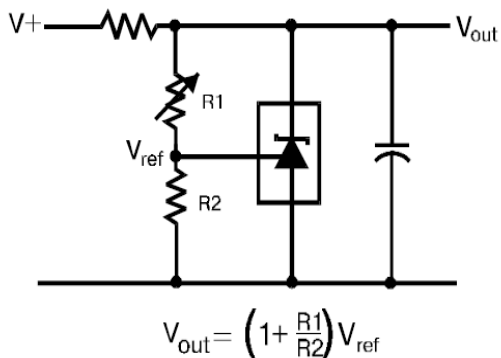


FIGURE 1. SHUNT REGULATOR

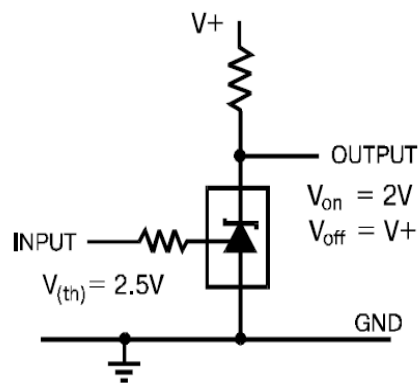
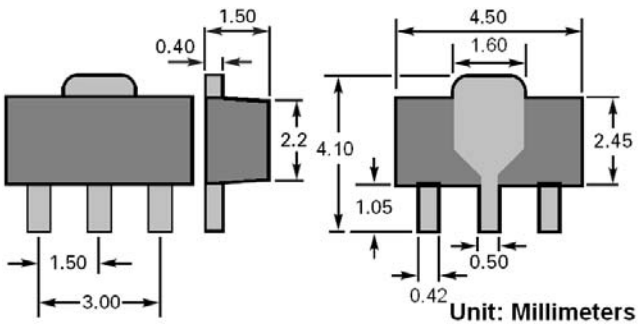


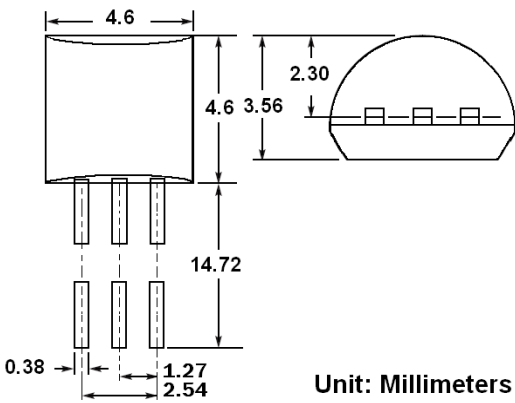
FIGURE 2. SINGLE-SUPPLY COMPARATOR WITH TEMPERATURE-COMPENSATED THRESHOLD

Package Outline

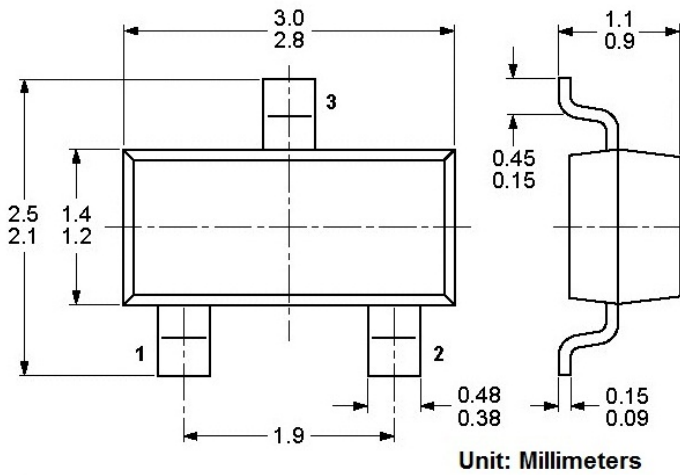
SOT-89:



TO-92:



SOT-23:



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