

Features

- Equivalent Full-Range Temperature Coefficient 30ppm/°C
- Temperature Compensated for Operation Over Full Rated Operating Temperature Range
- Adjustable Output Voltage
- Fast Turn-On Response
- Sink Current Capability 1mA to 100mA
- Low (0.2Ω) Dynamic Output Impedance
- Low Output Noise
- Industrial temperature range
- RoHS and green compliant packages

Applications

- Power Regulator

Equivalent Block Diagram



General Description

The LD6305 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.

These devices have a typical output impedance of 0.2Ω. Active output circuitry provides a very sharp turn-on characteristic, making these devices excellent replacements for zener diodes in many applications.

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

Ordering Information


Part No.	Package	Packing Options	
		Bag(BG)	Tape & Reel(TR)
LD6305	SOT-89-3	LD6305L5-BG	LD6305L5-TR
	TO-92-3	LD6305T1-BG	N/A
	SOT-23-3	LD6305L1-BG	LD6305L1-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
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Absolute Maximum Ratings

Parameter	Maximum	Units
Cathode voltage	37	V
Continuous cathode current range	-100 to 150	mA
Reference input current range	0.050 to 10	mA
Operating free-air temperature range	0 to 70	°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 input voltage	V _{ref}	V _{KA} =V _{ref} , I _K =10mA	2474	2500	2526	mV
		V _{KA} =V _{ref} , I _K =10mA, 0°C≤T _A ≤+70°C	2470	2495	2520	
Deviation of Ref input voltage over full temperature range	V _{ref} (dev)	V _{KA} =V _{ref} , I _K =10mA, 0°C≤T _A ≤+70°C	–	4	17	mV
Ratio of change in reference input voltage to the change in cathode voltage	ΔV _{ref} /V _{KA}	I _K =10Ma, V _{KA} =10V to V _{ref}	-2.7	-1.0	–	mV/V
		I _K =10Ma, V _{KA} = 36V to 10V	-2.0	-0.4	–	
Reference input current	I _{ref}	I _K =10mA, R1=10KΩ, R2=∞	–	0.7	4	μA
		I _K =10mA, R1=10KΩ, R2=∞, 0°C≤T _A ≤+70°C	–	1.3	4	
Deviation of Ref input current over full temperature range	I _{ref} (dev)	I _K =10mA, R1=10KΩ, R2=∞, 0°C≤T _A ≤+70°C	–	0.4	1.2	μA
Minimum cathode current for regulation	I _{min}	V _{KA} =V _{ref}	–	0.07	1	mA
		V _{KA} =V _{ref} , 0°C≤T _A ≤+70°C	–	0.4	1	
Off-state cathode current	I _{off}	V _{KA} =36V, V _{ref} =0V	–	0.1	1	μA
Dynamic impedance	Z _{KAL}	V _{KA} =V _{ref} , I _K =1mA to 100mA, f≤1KHz	–	0.2	0.5	Ω

Typical Application Circuit

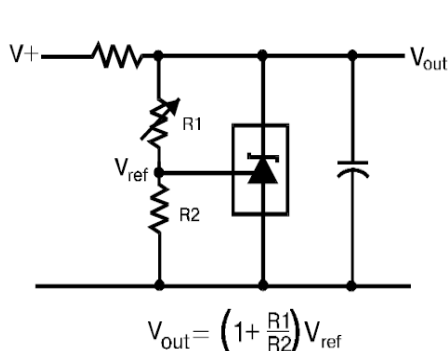


FIGURE 1. SHUNT REGULATOR

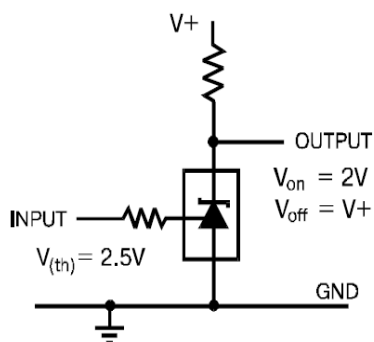
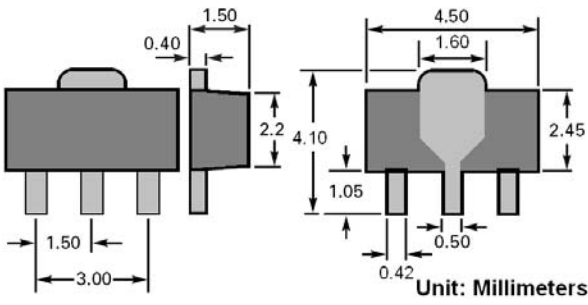


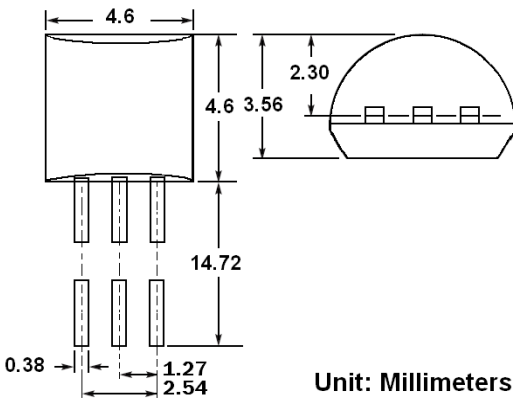
FIGURE 2. SINGLE-SUPPLY COMPARATOR WITH TEMPERATURE-COMPENSATED THRESHOLD

Package Outline

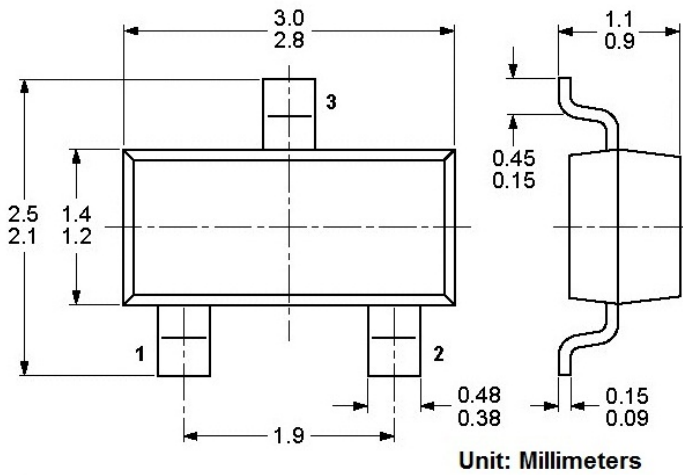
SOT-89:



TO-92:



SOT-23:



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