Preliminary – **LD6323**

100mA Low Dropout Voltage Regulator

Features

- High accuracy output voltage
- Guaranteed 100mA output
- Very low quiescent current
- Low dropout voltage
- Extremely tight load and line regulation
- Very low temperature coefficient
- Needs only 3μF for stability
- Output programmable from 1.24 to 29V

Applications

- Battery powered systems
- Cordless telephones
- Radio control systems
- Portable/Palm top/Notebook computers
- Portable consumer equipment
- Portable Instrumentation
- Avionics
- Automotive Electronics
- SMPS Post-Regulator
- Voltage Reference

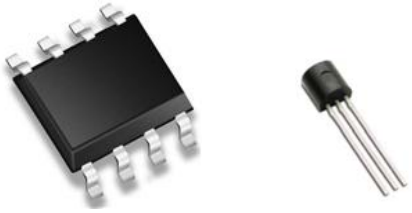
General Description

The LD6323 is a low power voltage regulator. This device excellent choice for use in battery powered application such as cordless telephone, radio control systems, and portable computers.

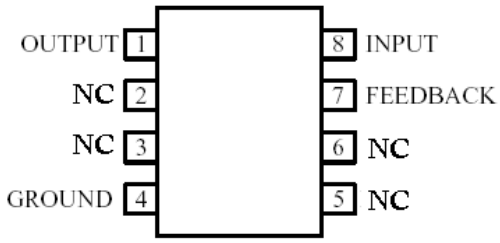
The LD6323 features very low quiescent current (75μA Typ.) and very low drop output voltage (Typ. 40mV at light load and 380mV at 100mA). This includes a tight initial tolerance of 0.5% typ., extremely good load and line regulation of 0.05% typ., and very low output temperature coefficient, making the LD6323 useful as a low-power voltage reference. The LD6323T1 is offered in 3-pin TO-92 package compatible with other fixed regulator.

The LD6323 may be programmed from 1.24V to 29V with external pair of resistors.

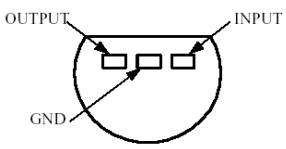
Package Pin Out



SOP-8



TO-92



Ordering Information

		Packing Options		
Part No.	Package	**Tube(TU)**	**Bag(BG)**	**Tape & Reel(TR)**
LD6323	SOP-8	LD6323S1-TU	N/A	LD6323S1-TR
	TO-92	N/A	LD6323T1-BG	N/A

LD8888
SSSSS…
●

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

Absolute Maximum Ratings

Parameter	Maximum	Unit
Input Supply Voltage	-0.3 to +30	V
Operating Input Supply Voltage	+2.3 to +30	V
Storage Temperature Range	-65 to +150	°C
Operating Junction Temperature Range	-40 to +125	°C
Power Dissipation	Internally Limited	
Lead Temperature (Soldering, 5 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

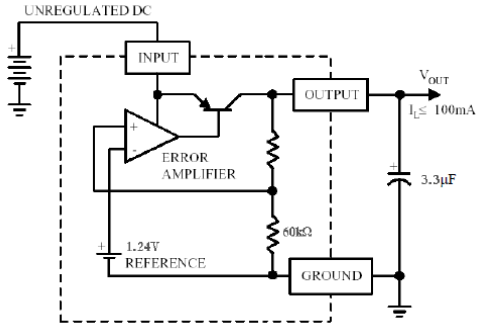
Unless otherwise specified all limits guaranteed for $V_{IN} = V_0 + 1V$, $I_L = 100\mu A$, $C_L = 3\mu F$, Full Operating Temperature.

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Output Voltage for Fixed Versions, Reference Voltage for Adjustable Version[*1]	V_O	-25°C≤TJ≤85°C	0.985	–	1.015	V
		–	0.98	–	1.02	
		100μA ≤ I_L ≤ 100mA	0.976	–	1.024	
Output or Reference Voltage Temperature Coefficient	$\Delta V_O/\Delta T$	*2	–	50	150	ppm/°C
Line Regulation[*3]	$\Delta V_O/V_O$	V_O + 1V ≤ V_{IN} ≤ 30V	–	0.04	0.4	%
Load Regulation[*3]	$\Delta V_O/V_O$	100μA ≤ I_L ≤ 100mA	–	0.1	0.3	%
Dropout Voltage[*4*5]	V_{IN}-V_O	I_L=100 μA	–	50	80	mV
		I_L=100 mA	–	380	450	
Ground Current	I_{GND}	I_L=100 μA	–	75	120	μA
		I_L=100 mA	–	5	12	mA
Dropout Ground Current[*5]	$I_{GNDDROP}$	V_{IN}=V_O - 0.5V, I_L=100 μA	–	110	170	μA
Current Limit	I_{LIMIT}	V_O=0	–	160	250	mA
Thermal Regulation	$\Delta V_O/\Delta P_D$	TJ=25°C	–	0.05	0.2	%W
Output Noise,10Hz to 100KHz[*5]	$\Delta V_O/\Delta F$	C_L=3μF, (TJ=25°C)	–	430	–	μVrms
		C_L=200μF, (TJ=25°C)	–	160	–	
Feedback Pin Bias Current	I_{FBBIAS}	–	–	20	40	nA

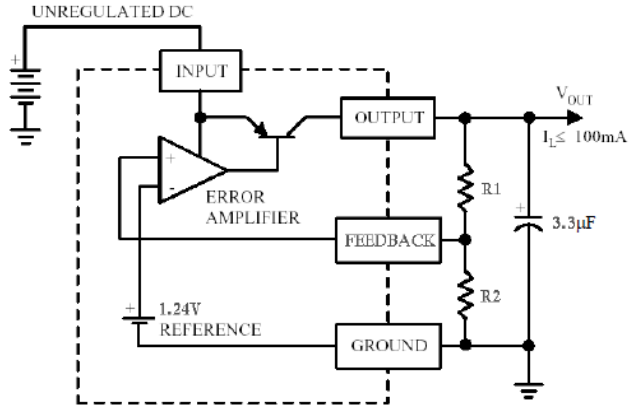
Notes:

1. The nominal value of reference voltage is 1.24V.
2. Output or reference voltage temperature coefficients defined as the worst case voltage change divided by the total temperature range.
3. Regulation is measured at constant junction temperature, using pulse testing with a low duty cycle. Changes in output voltage due to heating effects are covered under the specification for thermal regulation.
4. Dropout voltage is defined as the input to output differential at which the output voltage drops 100mV below its nominal value measured at 1V differential. At V_0=1.5V and V_0=1.8V the minimum input supply voltage of 2V (2.3V over temperature) must be taken into account.
5. Adjustable version programmed to 5V.

Block Diagram

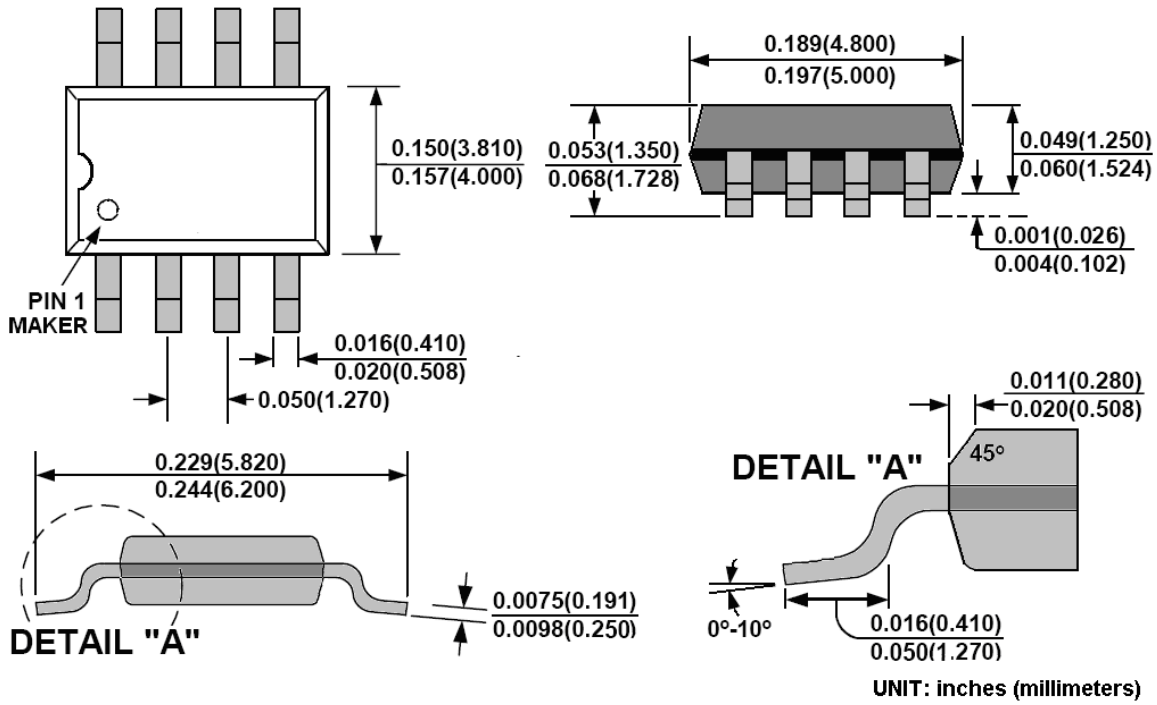


Typical Application Circuit and OTP Function Chart

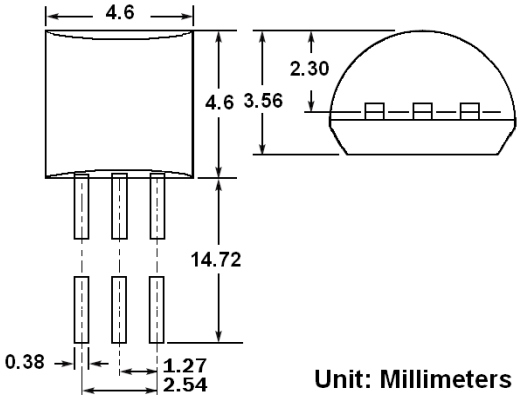


Vout = (Vref) * (1+R1/R2)

Package Outline
SOP-8:



TO-92:



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