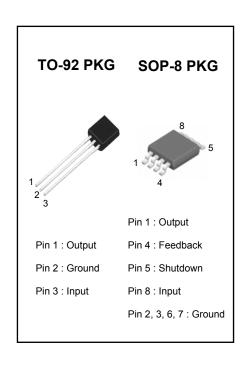
FEATURES

- 3-Terminal regulators (TO-92)
- 100mA output within 2% over temperature
- Very low quiescent current
- Extremely tight load and line regulation
- Very low temperature coefficient
- Current and thermal limiting
- Unregulated DC input can withstand -20V reverse battery and +60V positive trabsients
- Moisture Sensitivity Level 3

APPLICATION

- High-efficiency linear regulator
- Battery powered systems
- Portable consumer equipment
- Portable / Parm, Desktop / Notebook computers
- Portable Instrumentation
- Automotive Electronics
- SMPS Post-Regulator



ORDERING INFORMATION

DEVICE	PKG	
LM2930TA-XX	TO-92	
LM2931D-XX	SOP-8	

(XX = Output Voltage = 5.0V, 8.0V, ADJ)

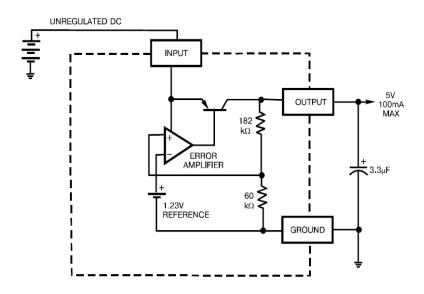
PRODUCT DESCRIPTION

This series of fixed-voltage and adjustable monolithic micropower voltage regulators is designed for a wide range of applications. This device excellent coice for use in battery-powered application.

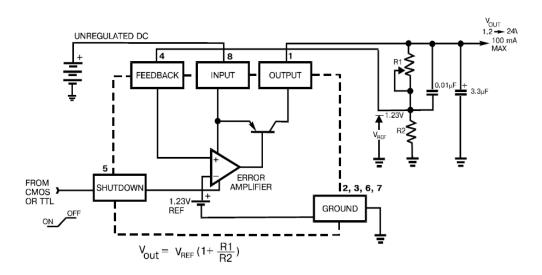
Futhermore, the quiescent current increases only slightly at dropout, which prolongs battery life.

This series of fixed-voltage and adjustable voltage regulators features very low quiescent current (100uA Typ.) and very low drop output voltage (Typ. 60mV at light load 300mV at 100mA). This Include a tight initial tolerance of 0.5% typ, extremely food load and line regulation of 0.05% Typ., and very low output temperature coefficient. This series of fixed-voltage and adjustable regulators is offered in 3-Pin TO-92 package for LM2930 and 8-Pin SOP-8 package for LM2931 compatible with other fixed-voltage regulators.

BLOCK DIAGRAM AND TYPICAL APPLICATIONS (Fixed)



BLOCK DIAGRAM AND TYPICAL APPLICATIONS (Adjustable)



ABSOLUTE MAXIMUM RATINGS

POWER DISSIPATION	INTERNALLY LIMITED		
Lead Temperature (Soldering, 5 seconds)	260℃		
Storage Temperature Range	-65℃ to +150℃		
Operating Junction Temperature Range	-55℃ to +150℃		
Input Supply Voltage	-20V to +35V		

100mA LOW DROPOUT VOLTAGE REGULATORS

ELECTRICAL CHARACTERISTICS (at T_A =25 $^{\circ}$ C, V_{IN} =15V, unles otherwise specified)

	(A , - IIV ,			/	
PARAMETER	CONDITIONS (Note 2)	MIN	TYP	MAX	UNITS
Output Voltage	-25°C ≤T _J ≤85°C	0.985 Vo	.,	1.015 V _O	
	Full Operating Temperature	0.980 Vo	V _o 1.020 V _o V _o	1.020 V _O	
Output Voltage	100μ A \leq I _L \leq 100 mA, T _J \leq T _{JMAX}	0.975 Vo		V	
Input Supply Voltage				26	
Output Voltage Temperature Coefficient	(Note 1)		50	150	ppm/℃
Line Regulation (Note 2)	$13V \le V_{IN} \le 26V \text{ (Note 3)}$		0.1	0.4	%
Load Regulation (Note 2)	$1mA \le I_L \le 100mA$		0.1	0.6	%
Dropout Voltage (Note 4)	I _L =10mA		60	250	mV
	I _L =100mA		300	600	
Ground Current (Note 5)	I _L =100 <i>μ</i> A		100	150	μA
	I _L =10mA		0.9	1.5	mA
	I _L =100mA		8	12	mA
Dropout Ground Current (Note 5)	V _{IN} =V _o -0.5V, I _L =100 <i>μ</i> Α		110	170	μA
Current Limit	V _o =0		160	200	mA
Thermal Regulation (Note 6)			0.05	0.3	%/W
Output Noise, 10Hz to 100kHz IL=10mA	C _L =2.2 \(\mu \)F		500		μVrms
	C _L =3.3 µF		350		
	C _L =33 <i>µ</i> F		120		
Ripple Rejection Ratio	Io=10mA, f=120Hz, Co=100uF Vin = Vo + 3V + 2Vpp	60			dB
SOP-8 PKG only					
Reference Voltage		1.21	1.235	1.26	V
Reference Voltage	Over Temperature (Note 7)	1.185		1.285	
Feedback Pin Bias Current			20	40	nA
Reference Voltage Temperature Coefficient	(Note 1)		50		ppm/℃
Feedback Voltage Temperature Coefficient			0.1		nA/℃
Shutdown Input					
Input Logic Voltage	Low (Regulator ON)		1.3	0.7	V
	High (Regulator OFF)	2			
Shutdown Pin Input Current	V _S =2.4V		30	50	
	V _S =26V		450	600	- <i>μ</i> Α
Regulator Output Current Shutdown	(Note 8)				
	$5.0V \le V_0 < 15.0V$			10	
	$3.3V \le V_0 < 5.0V$			20	
	$2.0V \le V_{O} < 3.3V$			30	

100mA LOW DROPOUT VOLTAGE REGULATORS

- Note 1 : Output or reference voltage temperature coefficients defined as the worst case voltage change divided by the total temperature range.
- Note 2: Regulations 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.
- Note 3 : Line regulation is tested at 150 $^{\circ}$ C for IL=1mA. For IL=100uA and TJ=125 $^{\circ}$ C, line regulation is guaranteed by design to 0.2%.
- Note 4 : Dropout voltage is defined as the input to output differential at which the output voltage drops 2% below its nominal value measured at 1V differential.
- Note 5 : Ground pin current is the regulator quiescent current. The total current drawn from the source is the sum of the ground pin current and output load current.
- Note 6: Thermal regulation is the change in output voltage at a time T after a change in power dissipation, excluding load or line regulation effects. Specifications are for a 50mA load pulse (1.25W) for T=10ms.
- Note 7: $V_{REF} \le V_O \le (V_{IN}-1V)$, 2.3 $V \le V_{IN} \le 30V$, $100 \mu A \le I_L \le 100 \mu A$, $T_J \le T_{JMAX}$
- Note 8 : Vshutdown≥2V, Vin≤26V, Vo=0, Feed-back pin tied to -XX V Tap.