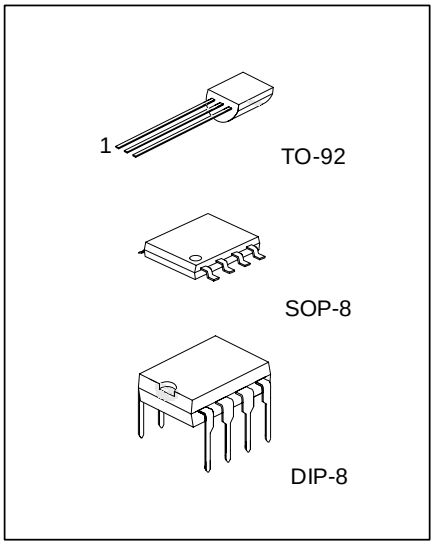
JL2950G/JL2951L

LINEAR INTEGRATED CIRCUIT

100 mA LOW-DROPOUT VOLTAGE REGULATOR



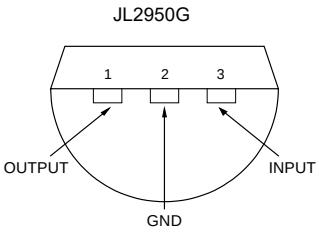
■ DESCRIPTION

The **JL2950G/2951L** are monolithic integrated

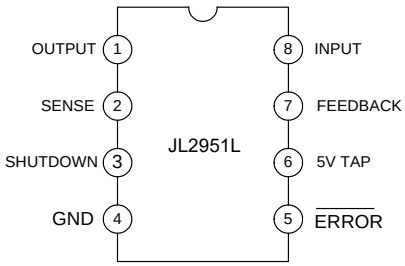
■ FEATURES

* Fixed output versions, 2.5V, 3V, 3.3V, 3.6V and 5V, are available.
* High accuracy output voltage.
* Extremely low quiescent current and dropout voltage.
* Extremely tight load and line regulation.
* Current and thermal limiting.
* Very low temperature coefficient.
* Logic controlled shutdown and err flog available for 8 pin package.
* Output voltage programmable for JL2951L.

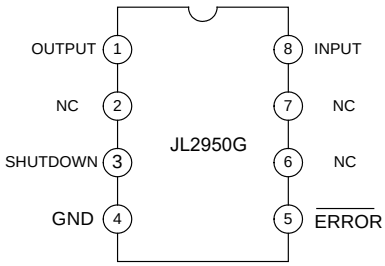
■ PIN CONFIGURATIONS



TO-92 Plastic Package
Bottom View

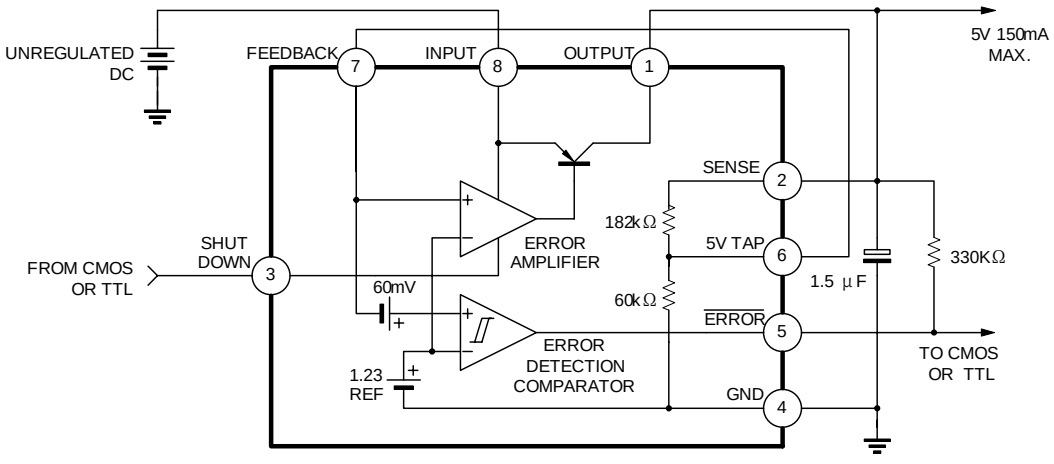


SOP-8 OR DIP-8
PACKAGE FOR
JL2951L



SOP-8 OR DIP-8
PACKAGE FOR
JL2950G

■ BLOCK DIAGRAM



FOR JL2951L

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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.3 ~ +30	V
Feedback Voltage	V_{FB}	-1.5 ~ +30	V
Shutdown Voltage	V_{SHDN}	-0.3 ~ +30	V
Operation Junction Temperature	T_J	-40 ~ +125	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, V_{IN}=6V, I_L=100μA, C_L=1μF, unless otherwise specified.)

For All Version:

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	T_J=25°C (Note 1)	V_{OUT}×0.98	V_{OUT}	V_{OUT}×1.02	V
		-25°C≦T_J≦+85°C(Note 1)	V_{OUT}×0.98	V_{OUT}	V_{OUT}×1.02	V
Output Voltage	V_{OUT}	100μA≦I_L≦100mA, T_J≦T_J(max)	V_{OUT}×0.98	V_{OUT}	V_{OUT}×1.02	V
Output Voltage Temperature Coefficient	TcVo		20		100	ppm/°C
Line Regulation	ΔV_{OUT}	6V≦V_{IN}≦30V	0.03	0.1	0.2	%
Load Regulation	ΔV_{OUT}	100μA≦I_L≦100 mA	0.04	0.1	0.2	%
Dropout Voltage	V_D	I_L=100μA I_L=100mA (Note 2)	50 380	80 450	150 600	mV
Ground Current	I_G	I_L=100μA I_L=100mA	75 8	120 12	140 14	μA mA
Dropout Ground Current		V_{IN}=4.5V,I_L=100μA	110	170	200	μA
Current Limit	I_{LIMIT}	V_{OUT}=0	160	200	220	mA
Output Noise (10Hz ~ 100KHz) (Bypass=0.01μF pins 7 to 1 (LP2951L))	eN	C_L=1μF C_L=200μF C_L=3.3μF			430 160 100	μV

For JL2951L 8-Pin Version Only

PARAMETER		SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Reference Voltage		V_{REF}		1.22	1.235	1.25	V
Reference Voltage		V_{REF}	Over temperature(Note 4)	1.19		1.27	V
Feedback pin Bias Current		I_{FB}			20	40	nA
Reference Voltage Temperature Coefficient		$V_{REF(TC)}$			50		ppm/°C
Feedback Bias Current Temperature Coefficient		$I_{FB(TC)}$			0.1		nA/°C
Error Comparator							
Output Leakage Current		$I_{O(LEAK)}$	V_{OH}=30V			1	μA
Output Low Voltage		V_{OL}	V_{IN}=4.5V, I_{OL}=400μA			250	mV
Threshold Voltage	Upper	V_{THU}	(Note 3)	3.2			%VO
	Lower	V_{THL}	(Note 3)			7.6	%VO
Hysteresis		V_{HYS}	(Note 3)		15		mV

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■ ELECTRICAL CHARACTERISTICS(Cont.)

For JL2951L 8-Pin Version Only

PARAMETER		SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Shutdown Input							
Input Logic Voltage	Low	V_{IL}	Regulator ON		1.3	0.70	V
	High	V_{IH}	Regulator OFF	2.0			
Shutdown Pin Input Current		I_{SHDN}	V_{SHDN}=2.4V		30	50	μA
			V_{SHDN}=30V		450	600	μA
Regulator Output Current Shutdown		I_{DFF}	$V_{SHDN}\geqq$2V, $V_{IN}\leqq$30V, V_{OUT}=0 Feedback pin tied to 5V Tap.		3	10	μA

Note 1:Additional conditions for 8-pin versions are FB pin tied to $5V_{TAP}$, Output tied to Sense(V_{OUT}=5V) and $V_{SHDN}\leq$0.8V.

Note 2: 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.

Note 3: Comparator thresholds are expressed in terms of percentage value of voltage output.

Note 4: $V_{REF}\leq V_{OUT}\leq(V_{IN}-1V)$, $2.3V\leq V_{IN}\leq 30V$, $100\mu A\leq I_L\leq 100mA$, $T_J\leq T_{J(MAX)}$

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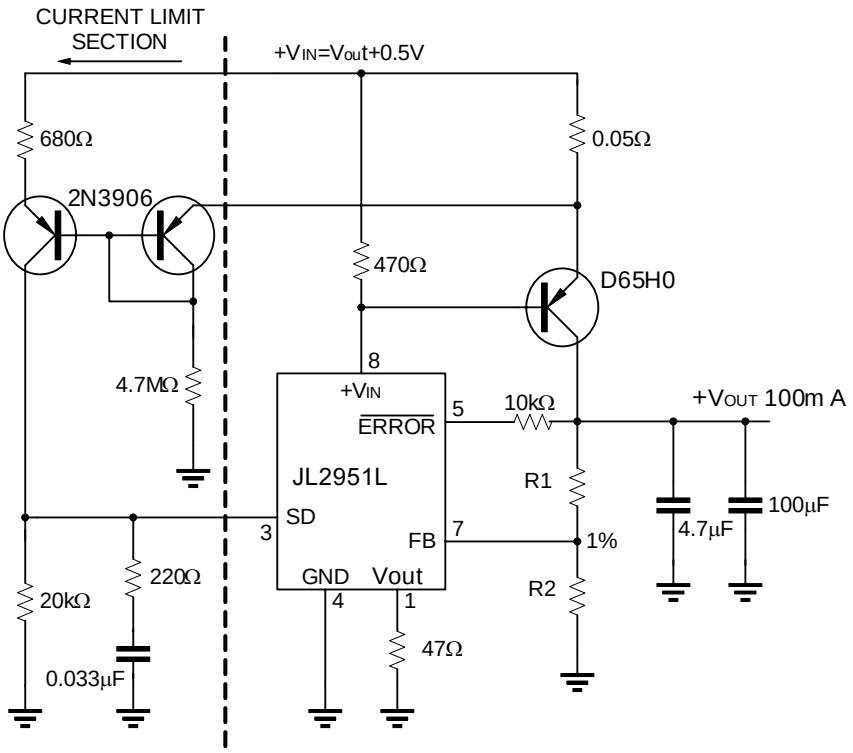
■ TYPICAL APPLICATION CIRCUIT

10 Ampere Low Dropout Regulator



VOUT=1.23V*(1+R1/R2)
For 5V output use internal resistors.Wire pin 6 to 7 and wire pin2 to +VOUT

Fig.1

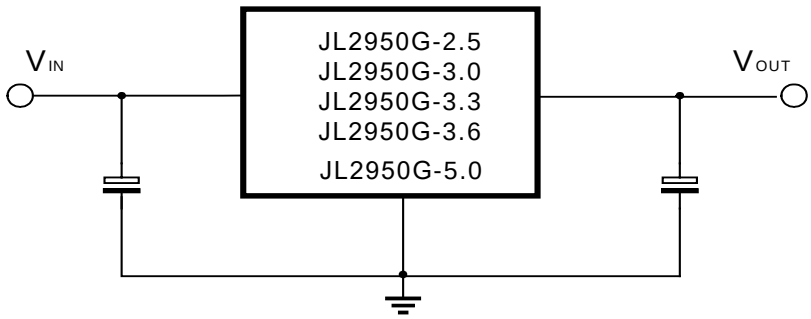


Fig.2

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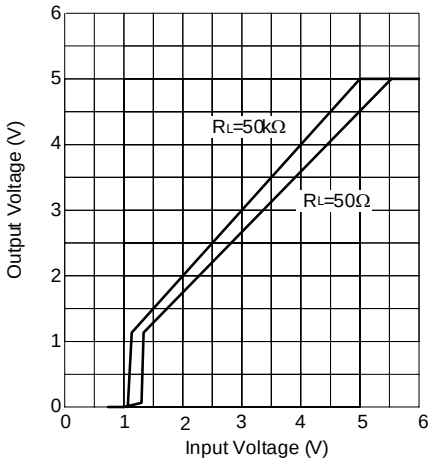
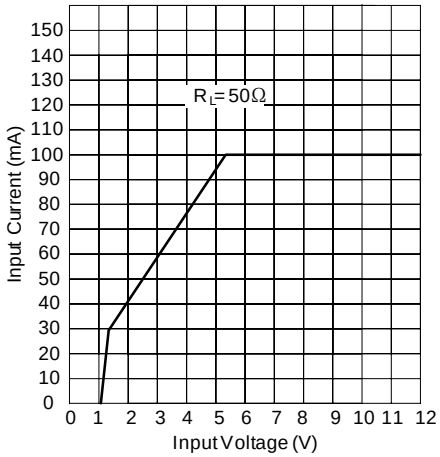
■ TYPICAL CHARACTERISTICS

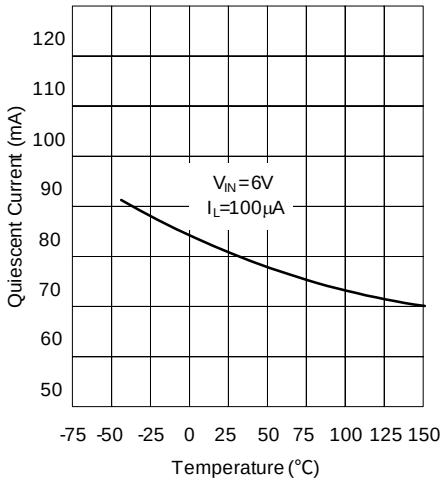
Dropout Characteristics



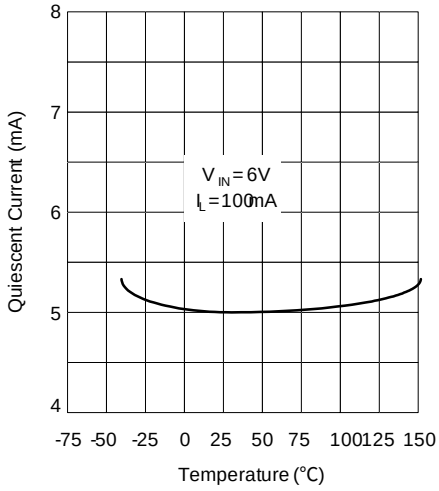
Input Current



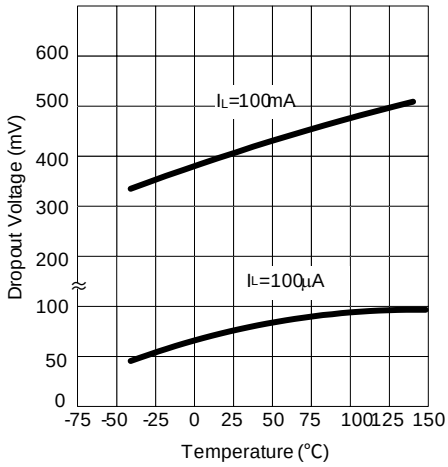
Ground Pin Current



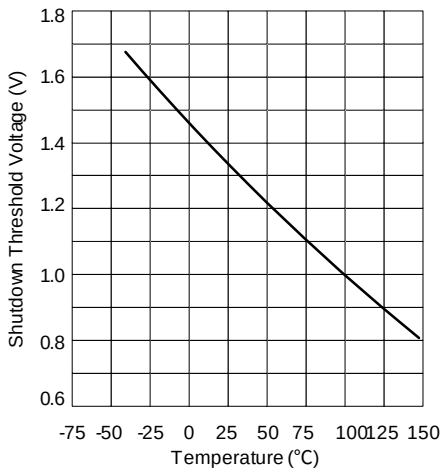
Ground Pin Current



Dropout Voltage



Shutdown Threshold Voltage



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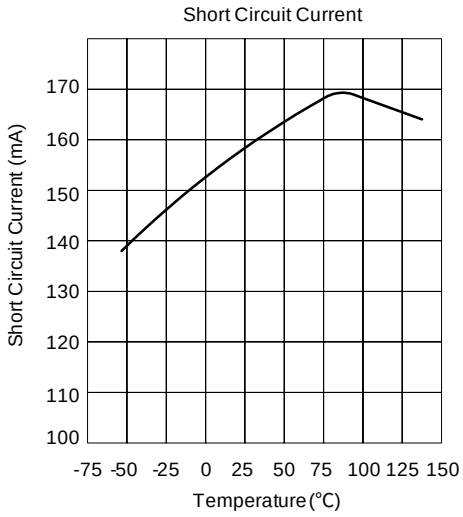
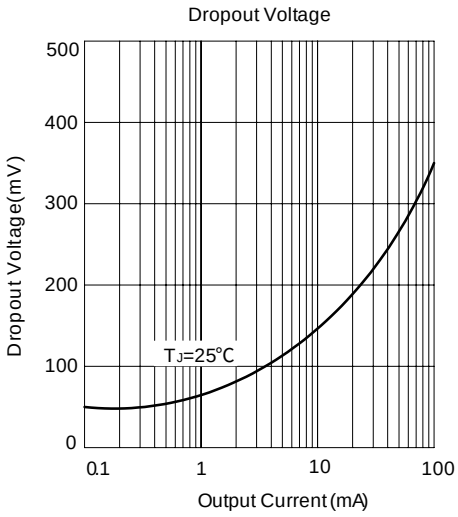
■ TYPICAL CHARACTERISTICS(Cont.)





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