



AV2950/2951

LINEAR INTEGRATED CIRCUIT

100 mA LOW-DROPOUT VOLTAGE REGULATOR

DESCRIPTION

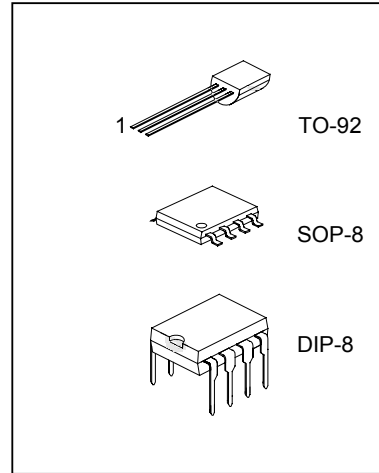
The @vic AV2950/2951 is a monolithic integrated voltage regulator with low dropout voltage, and low quiescent current. It includes many features that suitable for different applications. Available in 3-pin TO-92, DIP-8 and SOP-8 packages.

FEATURES

- *High accuracy 2.5, 3.0, 3.3, 3.6 or 5V fixed output for TO-92, SOP-8 package.
- *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 error flag available for DIP and SOP package.
- *Output voltage programmable for DIP and SOP package.

APPLICATIONS

- *Battery powered equipment.
- *High efficient linear regulator down to 1.24V.
- *Cellular phones.





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PIN CONFIGURATIONS

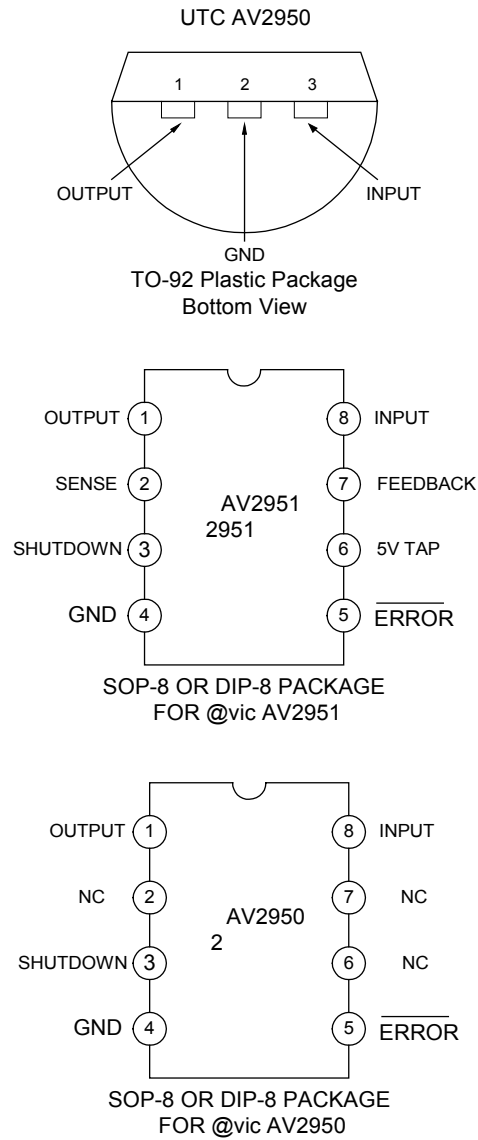


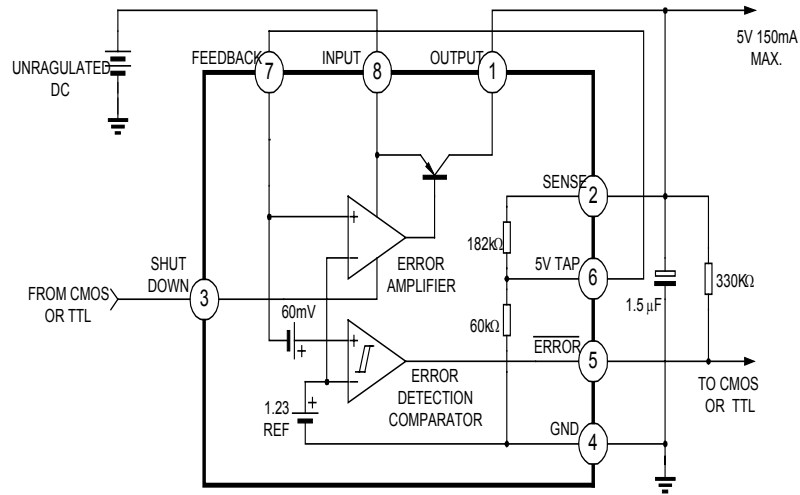
Fig.1



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BLOCK DIAGRAM



FOR @vic AV2951

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{cc}	-0.3~+30	V
Feedback Voltage	V _{feedback}	-1.5~+30	V
Shutdown Voltage	V _{shutdown}	-0.3~+30	V
Storage Temperature	T _{str}	-65~+150	°C
Operating Junction Temperature	T _J	-40~+125	°C



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ELECTRICAL CHARACTERISTICS

(Tested at $T_J=25^\circ\text{C}$, $V_{IN}=6\text{V}$, $I_L=100\mu\text{A}$ and $C_L=1\mu\text{F}$, unless otherwise specified)

PARAMETER	PART NUMBER	TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	AV2950-2.5 AV2950-3.0 AV2950-3.3 AV2950-3.6 AV2950-5.0 AV2951	$T_J=25^\circ\text{C}$	2.45 2.94 3.23 3.53 4.90	2.5 3.0 3.3 3.6 5.0	2.55 3.06 3.36 3.67 5.10	V
	AV2950-2.5 AV2950-3.0 AV2950-3.3 AV2950-3.6 AV2950-5.0 AV2951	$-25^\circ\text{C} \leq T_J \leq +85^\circ\text{C}$ (note 1)	2.45 2.94 3.23 3.53 4.90	2.5 3.0 3.3 3.6 5.0	2.55 3.06 3.36 3.67 5.10	V
Output Voltage	AV2950-2.5 AV2950-3.0 AV2950-3.3 AV2950-3.6 AV2950-5.0 AV2951	$100\mu\text{A} \leq I_L \leq 100\text{mA}$ $T_J \leq T_J(\text{max})$ (note 1)	2.45 2.94 3.23 3.53 4.90	2.5 3.0 3.3 3.6 5.0	2.55 3.06 3.36 3.67 5.10	V
Output Voltage Temperature Coefficient			20		100	ppm/ $^\circ\text{C}$
Line Regulation		$6\text{V} \leq V_{IN} \leq 30\text{V}$	0.03	0.1	0.2	%
Load Regulation		$100\mu\text{A} \leq I_L \leq 100\text{mA}$	0.04	0.1	0.2	%
Dropout Voltage		$I_L=100\mu\text{A}$	50	80	150	mV
		$I_L=100\text{mA}$ (note 2)	380	450	600	mV
Ground Current		$I_L=100\mu\text{A}$	75	120	140	μA
		$I_L=100\text{mA}$	8	12	14	mA
Dropout Ground Current		$V_{IN}=4.5\text{V}, I_L=100\mu\text{A}$	110	170	200	μA
Current Limit		$V_{out}=0$	160	200	220	mA
Output Noise 10Hz ~ 100KHz		$C_L=1\mu\text{F}$ $C_L=200\mu\text{F}$ $C_L=3.3\mu\text{F}$ (Bypass=0.01 μF pins 7 to (utc2951))			430 160 100	μV
For LP2951 8-Pin version only						
Reference Voltage			1.22	1.235	1.25	V
Reference Voltage		(Note 4)	1.19		1.27	V
Feedback pin Bias Current				20	40	nA
Reference Voltage Temperature Coefficient				50		ppm/ $^\circ\text{C}$
Feedback Bias Current temperature Coefficient				0.1		nA/ $^\circ\text{C}$
Error Comparator						
Output Leakage Current		$V_{OH}=30\text{V}$			1	μA
Output Low Voltage		$V_{IN}=4.5\text{V}, I_{OL}=400\mu\text{A}$			250	mV
Upper Threshold Voltage		(Note 3)	3.2			% V_O
Lower Threshold Voltage		(Note 3)			7.6	% V_O
Hysteresis		(Note 3)		15		mV



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PARAMETER	PART NUMBER	TEST CONDITION	MIN	TYP	MAX	UNIT
Shutdown Input						
Input Logic Voltage		Low(Regulator ON)		1.3	0.70	V
		High(Regulator OFF)	2.0			
Shutdown Pin Input Current		$V_{shutdown}=2.4V$		30	50	μA
		$V_{shutdown}=30V$		450	600	μA
Regulator Output Current Shutdown		$V_{shutdown} \geq 2V, V_{IN} \leq 30V,$ $V_{out}=0,$ Feedback pin tied to 5V Tap.		3	10	μA

Note 1: Additional conditions for 8-pin versions are feedback tied to 5V Tap and Output tied to Output Sense ($V_{out}=5V$) and $V_{shutdown} \leq 0.8V$.

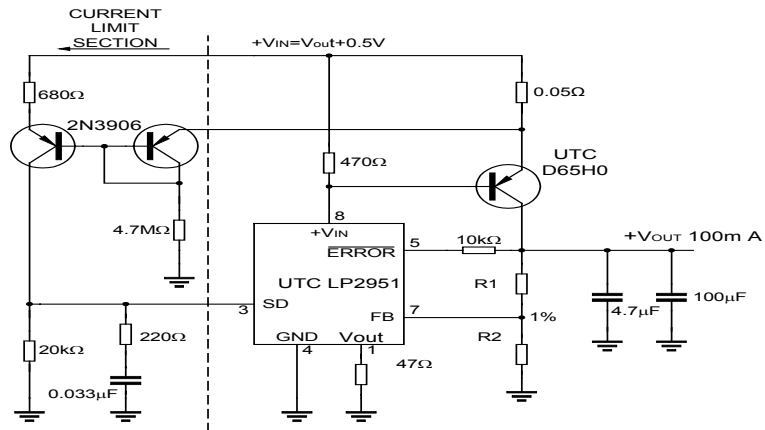
Note 2: Dropout Voltage is defined as the input to output differential at which the output voltage drops 100mV below its nominal value measured at 1V differential.

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

Note 4: $V_{ref} \leq V_{out} \leq (V_{in}-1V)$, $2.3V \leq V_{in} \leq 30V$, $100\mu A \leq I_L \leq 100mA$, $T_J \leq T_{JMAX}$



APPLICATION CIRCUIT (10 Ampere Low Dropout Regulator)



$$V_{out} = 1.23V * (1 + R1/R2)$$

For 5V output use internal resistors. Wire pin 6 to 7 and wire pin 2 to +Vout

Fig.2

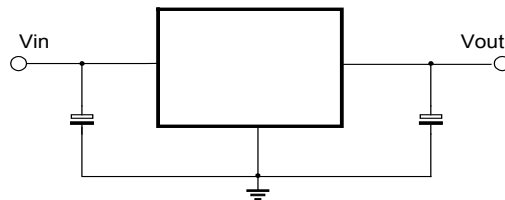
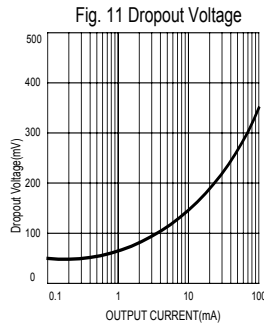
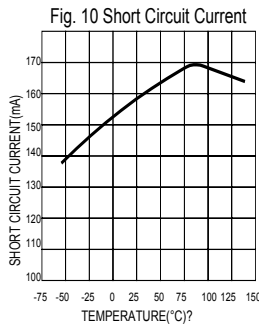
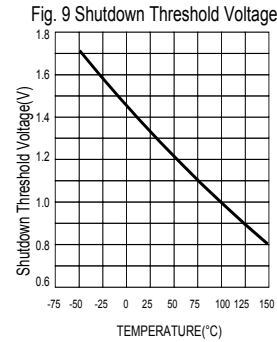
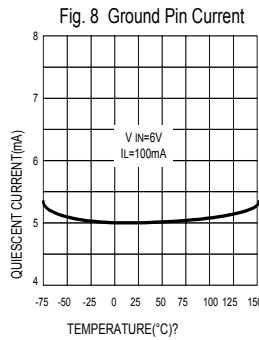
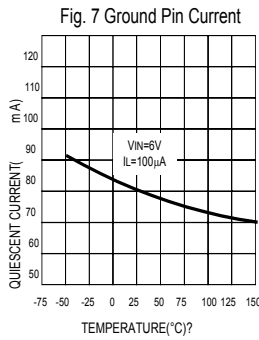
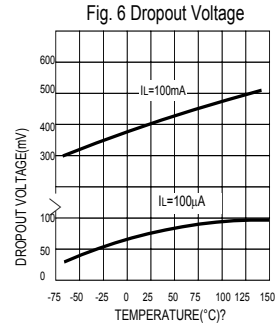
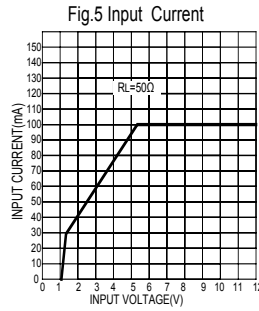
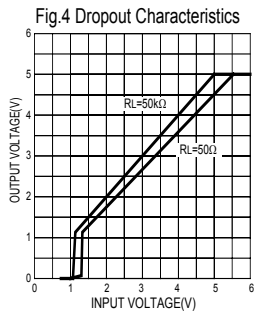


Fig.3



TYPICAL PERFORMANCE CHARACTERISTICS



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