

UTC LP2950/2951 LINEAR INTEGRATED CIRCUIT

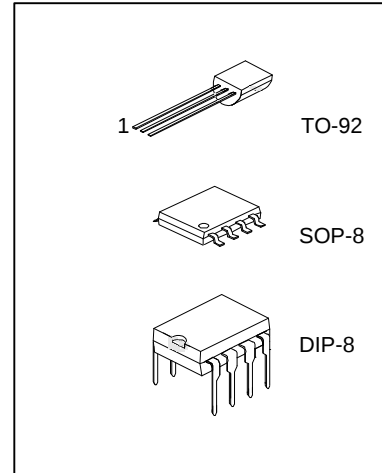
100 mA LOW-DROPOUT VOLTAGE REGULATOR

DESCRIPTION

The UTC LP2950/2951 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 3.0, 3.3, or 5V fixed output for TO-92 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.

ORDERING INFORMATION

PART NUMBER	TEMPERATURE RANGE	PACKAGE	ACCURACY
UTC LP2950-3.0	-40 ~ +125°C	3-Pin TO-92 plastic	1.0%
UTC LP2950-3.3	-40 ~ +125°C	3-Pin TO-92 plastic	2.0%
UTC LP2950	-40 ~ +125°C	3-Pin TO-92 plastic	1.0%
UTC LP2951F	-40 ~ +125°C	8-Pin SOP-8 plastic	2.0%
UTC LP2951P	-40 ~ +125°C	8-Pin DIP-8 plastic	2.0%

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ELECTRICAL CHARACTERISTICS

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

PARAMETER	PART NUMBER	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	UTC LP2950-3.0	Tj=25°C	2.97	3.0	3.03	V
	UTC LP2950-3.3		3.26	3.3	3.37	
	UTC LP2950		4.90	5.0	5.10	
	UTC LP2951	(note 1)				
	UTC LP2950-3.0	-25°C<=Tj<=+85°C	2.97	3.0	3.03	V
	UTC LP2950-3.3		3.26	3.3	3.37	
	UTC LP2950		4.90	5.0	5.10	
	UTC LP2951	(note 1)				
Output Voltage	UTC LP2950-3.0	100µA<=IL<=100 mA	2.97	3.0	3.03	V
	UTC LP2950-3.3	Tj<=Tj(max)	3.26	3.3	3.37	
	UTC LP2950		4.90	5.0	5.10	
	UTC LP2951	(note 1)				
Output Voltage Temperature Coefficient			20		100	ppm/°C
Line Regulation		6V<=VIN<=30V	0.03	0.1	0.2	%
Load Regulation		100A<=IL<=100 mA	0.04	0.1	0.2	%
Dropout Voltage		IL=100µA	50	80	150	mV
		IL=100mA (note 2)	380	450	600	
Ground Current		IL=100µA	75	120	140	µA
		IL=100mA	8	12	14	mA
Dropout Ground Current		VIN=4.5V,IL=100µA	110	170	200	µA
Current Limit		Vout=0	160	200	220	mA
Output Noise 10Hz to 100KHz		CL=1µF			430	µV
		CL=200µF			160	
		CL=3.3µF			100	
		(Bypass=0.01µF pins 7 to (utc2951))				
For 8-Pin version only						
Reference Voltage			1.22	1.235	1.25	V
Reference Voltage		(Note 7)	1.19		1.27	V
Feedback pin Bias Current				20	40	nA
Reference Voltage Temperature Coefficient				50		ppm/°C
Feedback Bias Current temperature Coefficient				0.1		nA/°C
Error Comparator						
Output Leakage Current		VOH=30V			1	µA
Output Low Voltage		VIN=4.5V IOL=400µA			250	mV
Upper Threshold Voltage		(Note 3)	3.2			%Vo

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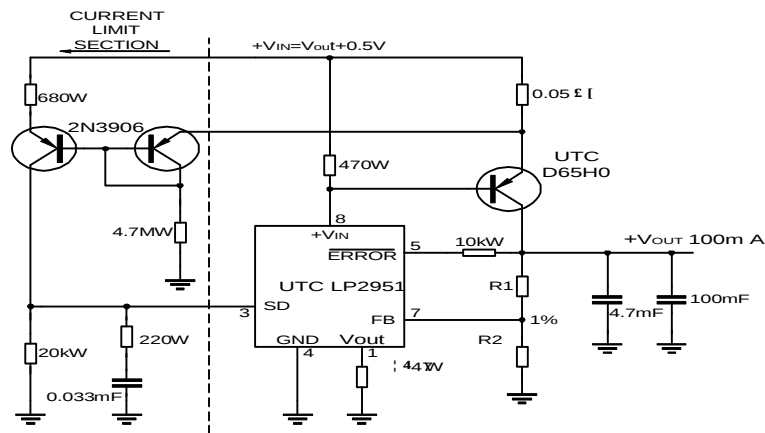
PARAMETER	PART NUMBER	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Lower Threshold Voltage		(Note 3)			7.6	%Vo
Hysteresis		(Note 3)		15		mV
Shutdown Input						
Input Logic Voltage		Low(Regulator ON) High(Regulator OFF)	2.0	1.3	0.70	V
Shutdown Pin Input Current		Vshutdown=2.4V		30	50	μA
		Vshutdown=30V		450	600	μA
Regulator Output Current Shutdown		Vshutdown>=2V, VIN<=30V, Vout=0, Feedback pin tied to 5V Tap.		3	10	μA

Note 1: Additional conditions for 8-pin versions are feedback tied to 5V Tap an Output tied to Output Sense (Vout=5V) and Vshutdown<=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.

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

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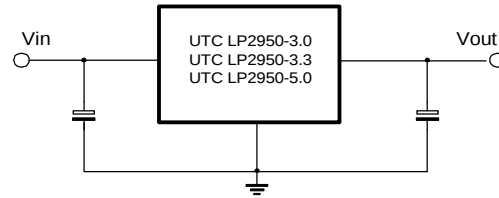


Fig. 3

TYPICAL PERFORMANCE CHARACTERISTICS

