

**LP5951**

Preliminary

LINEAR INTEGRATED CIRCUIT**HIGH INPUT VOLTAGE, LOW
QUIESCENT CURRENT,
150mA LDO REGULATOR****DESCRIPTION**

The **UTC LP5951** is a low ground current linear regulator which operates with input voltage from 6.5V ~ 25V and delivers output current up to 150mA. Typical dropout voltage is only 450mV at 150mA loading.

The **UTC LP5951** has many protection functions including over temperature and current limit which prevent the device from thermal over-load and current over-load.

FEATURES

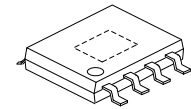
- * Wide Operating Voltage : 6.5V~25V
- * Ultra Low Ground Current :120 μ A
- * High Output Accuracy : $\pm$ 2% over temperature
- * Excellent Load/Line Transient
- * Low Dropout Voltage : 450mv @ 150mA
- * Built-in Current Limit Protection
- * Built-in Over Temperature Protection
- * Zero Shutdown Current

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
LP5951L-xx-SH2-R	LP5951G-xx-SH2-R	HSOP-8	Tape Reel
LP5951L-xx-SH2-T	LP5951G-xx-SH2-T	HSOP-8	Tube

Note: xx: Output Voltage, refer to Marking Information.

LP5951L-xx-SH2-R	(1)Packing Type (2)Package Type (3)Output Voltage Code (4)Lead Free	(1) R: Tape Reel, T: Tube (2) SH2: HSOP-8 (3) xx: Refer to Marking Information (4) G: Halogen Free, L: Lead Free
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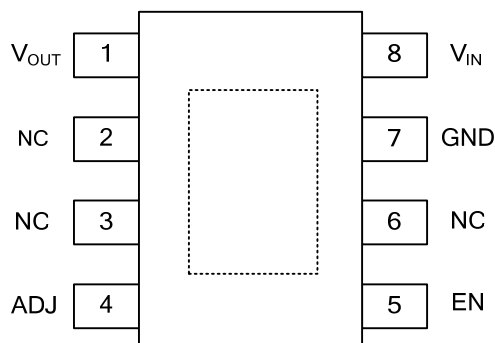


HSOP-8

MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
HSOP-8	AD :ADJ	

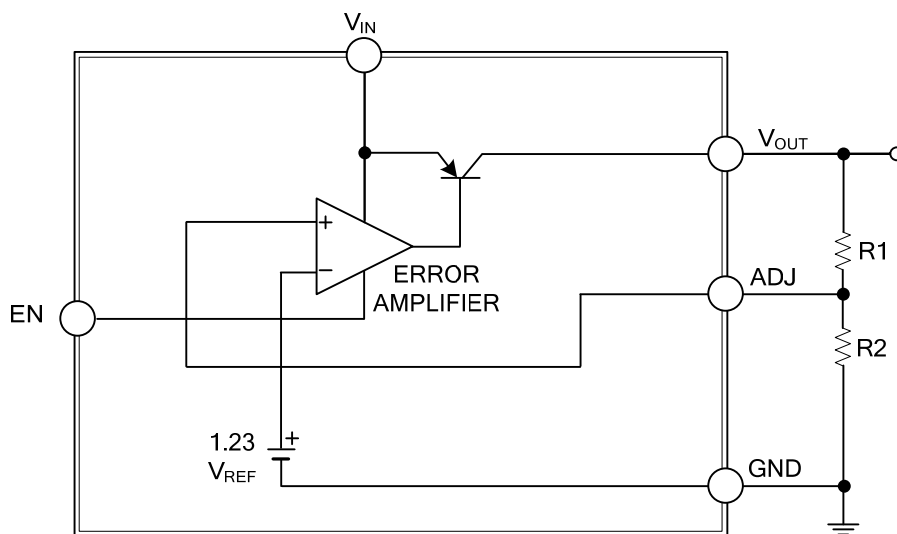
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V_{OUT}	output pin
2, 3, 6	NC	No Connection
4	ADJ	ADJ: output feedback pin
5	EN	ON/OFF pin, low=output ON; high=output OFF
7	GND	Ground
8	V_{IN}	Input pin

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.3~+27	V
Feedback Voltage	V_{FB}	-1.5~+27	V
Shutdown Voltage	V_{SHDN}	-0.3~+27	V
Power Dissipation	P_D	Internally Limited	W
Junction Temperature	T_J	+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.

■ THERMAL DATA

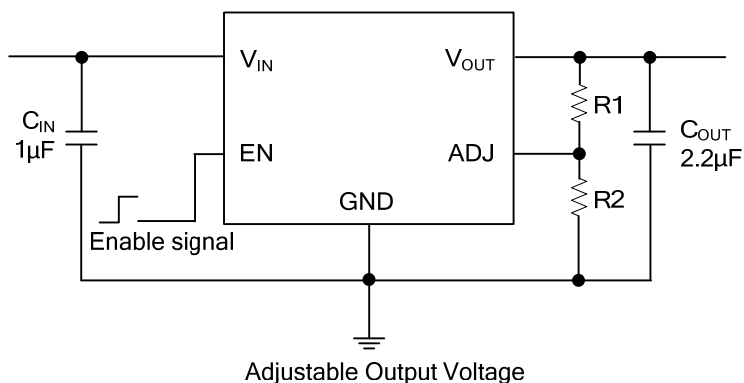
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	50	°C/W
Junction to Case	θ_{JC}	20	°C/W

■ ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, these specifications apply over $V_{IN}=V_{OUT}+2.5V$, $C_{IN}=1\mu F$, $C_{OUT}=2.2mF$, $T_A=-40^{\circ}C \sim 85^{\circ}C$. Typical values refer to $T_A=25^{\circ}C$.)

Typical values refer to $V_A=25\text{ V}$, $T_A=25\text{ }^{\circ}\text{C}$.						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V_{IN}		6.5		25	V
Output Voltage Accuracy	V_{OUT}		-2		2	%
Output Voltage Range			3		20	V
Quiescent Current	I_Q	$I_{OUT}=0.1\text{mA}$	75	120	140	μA
		$I_{OUT}=150\text{mA}$	8	12	22	mA
Load Current Range	I_{OUT}		0		150	mA
Reference Voltage	V_{REF}		-2%	1.235	+2%	V
Line Regulation	ΔV_{OUT}	$V_{OUT}+2.5\text{V}<V_{IN}<25\text{V}$, $I_{OUT}=1\text{mA}$		0.1	0.2	%
Load Regulation	ΔV_{OUT}	$0.1\text{mA}<I_{OUT}<150\text{mA}$		0.2	0.5	%
Dropout Voltage	V_D	$I_{OUT}=0.1\text{mA}$	50	80	150	mV
		$I_{OUT}=150\text{mA}$	380	450	600	
PROTECTION						
Over Temperature Shutdown	OTS			150		$^{\circ}\text{C}$
Circuit Current Limit	I_{LIMIT}	$V_{IN}=V_{OUT}+2.5\text{V}$	250	350	500	mA
Short Current	I_{SHORT}	$V_{OUT}=0\text{V}$		50		mA
SHUTDOWN						
Input High Voltage	V_{EN}		2			V
Input Low Voltage					0.7	
EN pin Input Bias Current	I_{EN}	$V_{EN}=25\text{V}$		450	600	μA
Shutdown Supply Current	I_{QSHDN}	$EN=\text{High}$, $V_{IN}=19\text{V}$		0.1	1	mA

■ TYPICAL APPLICATION CIRCUIT



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