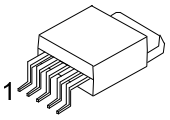
5A LOW DROPOUT LINEAR REGULATOR



TO-252-5

■ DESCRIPTION

The UTC **LR5966** belonged to low quiescent current(60μA typ.), low dropout, linear regulators operating from 2.25V to 6V input and are guaranteed to deliver 5A. Wide range of preset output voltage options are available. Built-in low on-resistance transistor provides low dropout voltage and large output current. The UTC **LR5966** are designed and optimized for battery-powered systems to work with low noise.

The UTC **LR5966** consume less than 0.01μA in shutdown mode. Other features include ultra low dropout voltage, current limiting protection, thermal shutdown protection and high ripple rejection ratio.

■ FEATURES

* 5A Guaranteed Output Current
* 0.01μA Shutdown Current
* Low Temperature Coefficient
* Current Limiting Protection
* Thermal Shutdown Protection
* Excellent Line/Load Transient

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
LR5966L-xx-TN5-R	LR5966G-xx-TN5-R	TO-252-5	S	I	G	O	A	Tape Reel
LR5966L-xx-TN5-T	LR5966G-xx-TN5-T	TO-252-5	S	I	G	O	A	Tube

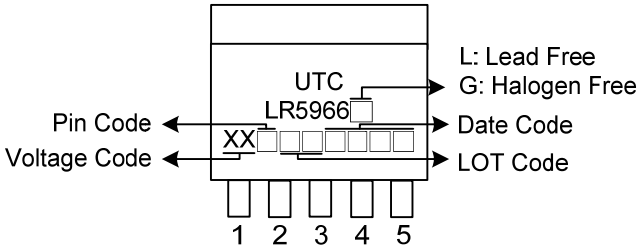
Note: Pin Assignment: I:V_{IN} O:V_{OUT} G:GND S: $\overline{SHDN}$ A: SET

LR5966L-xx-TN5-R

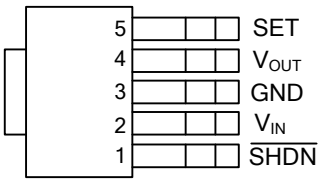
(1)Packing Type
(2)Package Type
(3)Output Voltage Code
(4)Lead Free

(1) R: Tape Reel, T: Tube
(2) TN5: TO-252-5
(3) xx: refer to Marking Information
(4) G: Halogen Free, L: Lead Free

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-252-5	33 :3.3V	

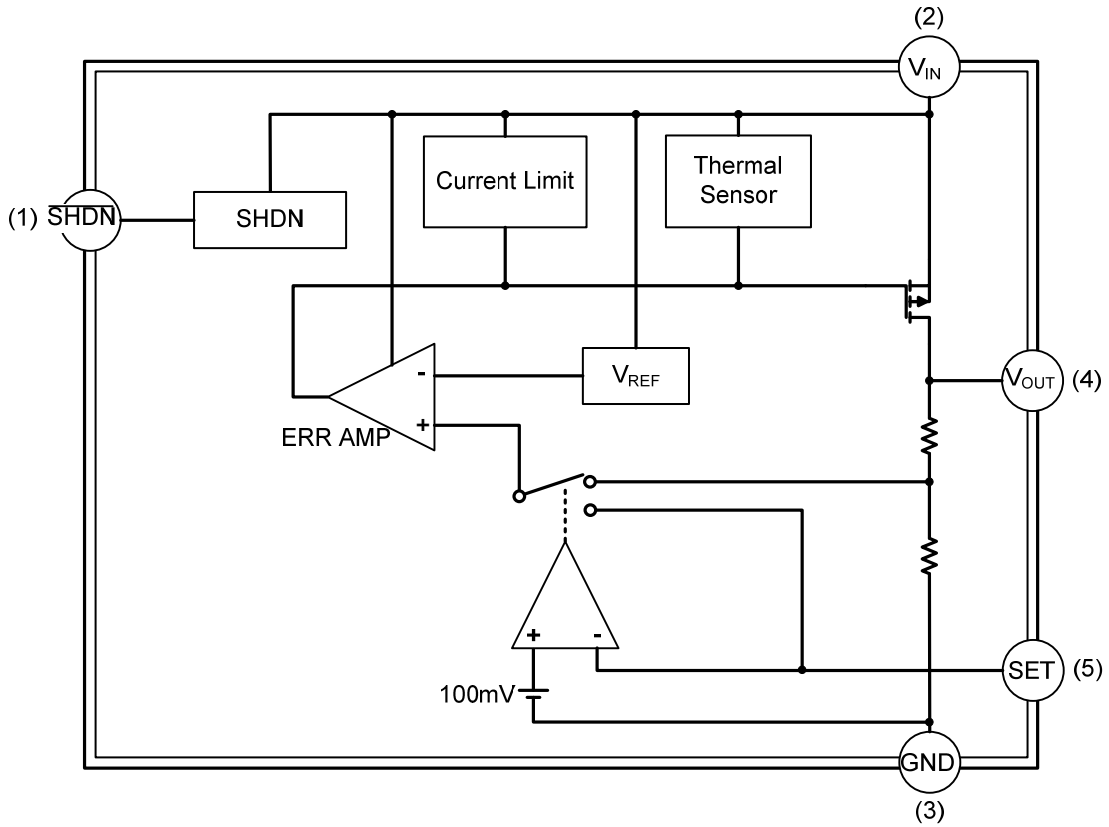
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO	PIN NAME	DESCRIPTION
1	$\overline{SHDN}$	Active-Low Shutdown Input. A logic low at $\overline{SHDN}$ reduces supply current to 0.01μA. Connect $\overline{SHDN}$ to V_{IN} for normal operation.
2	V_{IN}	Power Input Voltage. Supply voltage can range from 2.25V to 6V.
3	GND	Ground
4	V_{OUT}	Output Voltage
5	SET	When this pin is connected to ground, turns to fixed output voltage operation. When this pin is connected to an external resistor divider, turns to adjustable output voltage mode operation.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T_A=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{IN}	7	V
Power Dissipation	P_D	1250	mW
Junction Temperature	T_J	+125	°C
Operation Temperature	T_{OPR}	-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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	64	°C/W
Junction to Case	θ_{JC}	4	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A= 25°C, unless otherwise specified)

V_{IN} = V_{OUT} + 1V or V_{IN} =2.25V whichever is greater, C_{IN} =1μF, C_{OUT} =2.2μF(Ceramic)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Input Voltage	V_{IN}			2.25		6	V
Output Voltage Accuracy	V_{OUT}	T_A=25°C , I_{OUT}= 1mA ~5A		-2		2	%
		T_A=0~85°C, I_{OUT}= 1mA~5A		-3		3	
Maximum Output Current	I_{OUT}				5		A
Short-Circuit Current Limit	I_{LIMIT}	V_{OUT}>1.2V			7.5		A
Reference Current	V_{REF}	Measured on SET, V_{IN}=2.8V, I_{OUT}=10mA		0.784	0.8	0.816	V
Ground Pin Current	I_{GND}	I_{OUT} = 0mA			60		μA
		I_{OUT}= 1mA to 5A			90		
Dropout Voltage (Note)	V_D	I_{OUT}=5A	1.5V<=V_{OUT}<=1.8V			1800	mV
			1.8V<V_{OUT}<2.5V			1000	
			2.5<=V_{OUT}			650	
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	V_{IN}=V_{OUT}+V_D~6V			0.08	0.18	%/V
Load Regulation	ΔV_{OUT}	V_{IN}=V_{OUT}+1V, I_{OUT}=10mA~5A			0.25	1	%
Output Voltage Noise	eN	f=10Hz to100kHz，C_{OUT}=2.2μF			30		μV_{RMS}
Shutdown Supply Current	I_{OFF}	$\overline{SHDN}$ =GND			0.01	5	μA
Power Supply Rejection	PSRR	I_{OUT}=100mA	f=100Hz		60		dB
		C_{OUT}=10μF	f=1kHz		45		
Shutdown Threshold	V_{IH}			1.6			V
	V_{IL}					0.6	
Thermal Shutdown Temperature	T_{SHDN}				160		°C
Thermal Shutdown Hysteresis	DT_{SHDN}				50		

Note: The dropout voltage is defined as V_{IN} -V_{OUT}, which is measured when V_{OUT} is $V_{OUT(NORMAL)}$ − 100mV.

■ TYPICAL APPLICATION CIRCUIT