



LR5966

CMOS IC

5A LOW DROPOUT LINEAR REGULATOR

■ DESCRIPTION

The UTC **LR5966** belonged to low quiescent current(60 μ A 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 0.01 μ A in shutdown mode. Other features include ultra low dropout voltage, current limiting protection, thermal shutdown protection and high ripple rejection ratio.

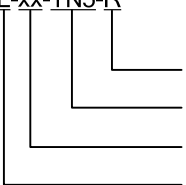
■ FEATURES

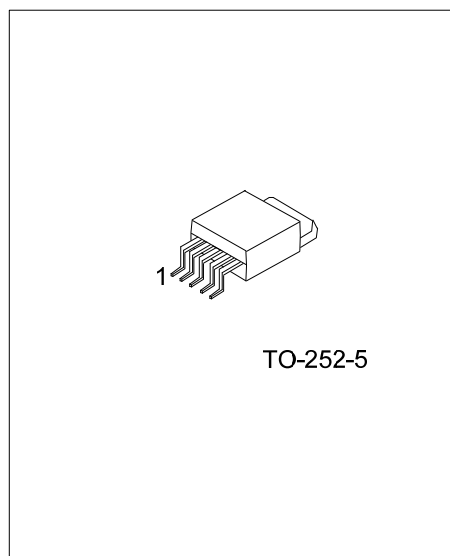
- * 5A Guaranteed Output Current
- * 0.01 μ A Shutdown Current
- * Low Temperature Coefficient
- * Current Limiting Protection
- * Thermal Shutdown Protection
- * Excellent Line/Load Transient

■ ORDERING INFORMATION

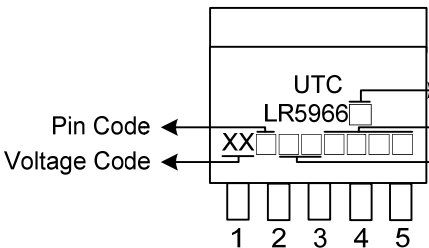
Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
LR5966L-xx-TN5-R	LR5966G-xx-TN5-R	TO-252-5	S	I	G	O	A	Tape Reel
LR5966L-xx-TN5-T	LR5966G-xx-TN5-T	TO-252-5	S	I	G	O	A	Tube

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

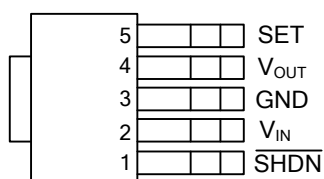
<p>LR5966L-xx-TN5-R</p> 	<p>(1) R: Tape Reel, T: Tube (2) TN5: TO-252-5 (3) xx: refer to Marking Information (4) G: Halogen Free, L: Lead Free</p>
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-252-5	33 :3.3V	 <p>UTC LR5966 XX</p> <p>Pin Code Voltage Code</p> <p>L: Lead Free G: Halogen Free Date Code LOT Code</p> <p>1 2 3 4 5</p>

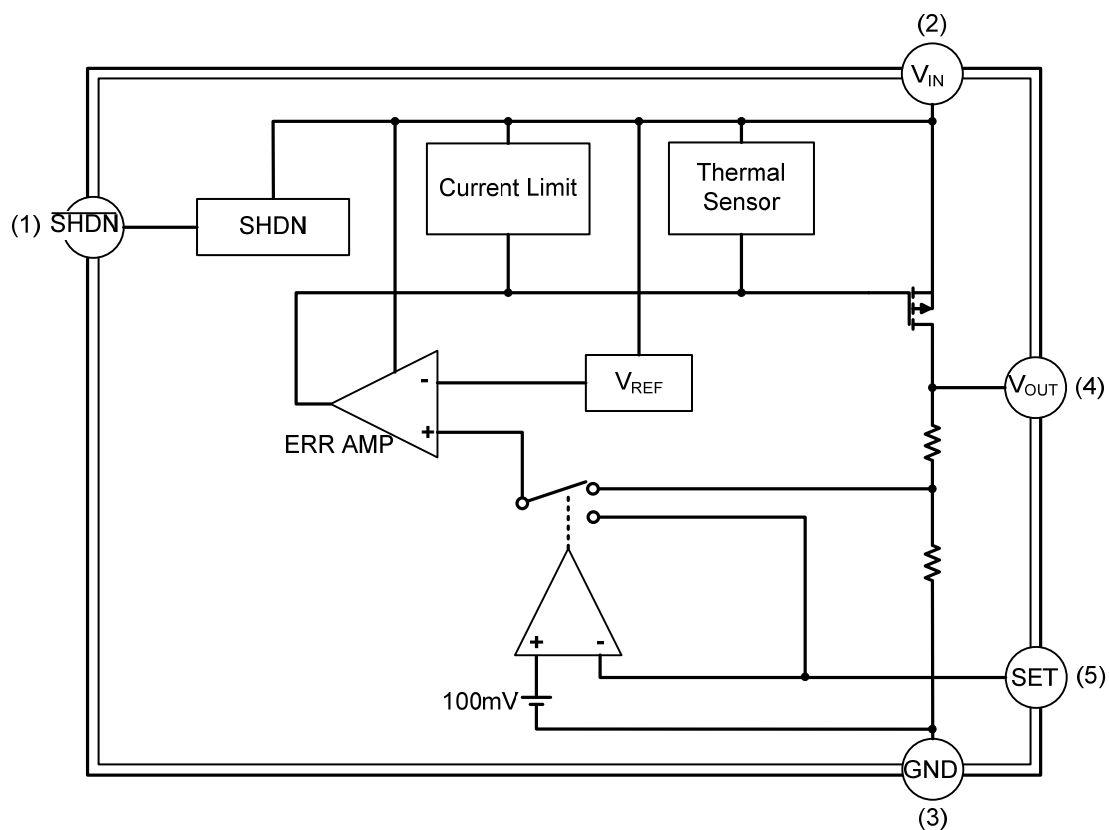
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO	PIN NAME	DESCRIPTION
1	\overline{SHDN}	Active-Low Shutdown Input. A logic low at \overline{SHDN} reduces supply current to 0.01 μ A. 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

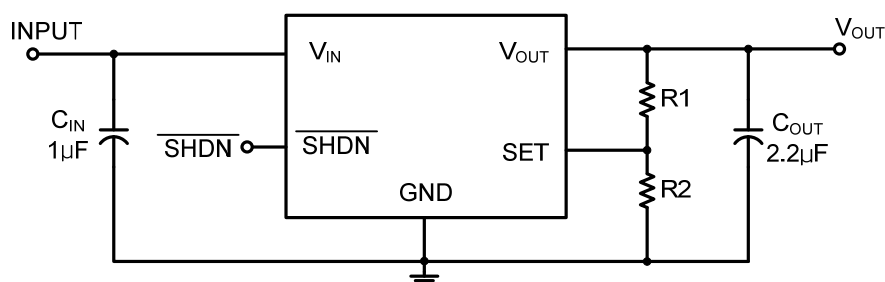
■ ELECTRICAL CHARACTERISTICS (T_A= 25°C, unless otherwise specified)

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
		I _{OUT} = 5A, 1.8V < V _{OUT} ≤ 2.5V			1000	
		I _{OUT} = 5A, 2.5V < 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	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	V _{IN} = V _{OUT} + 1V, I _{OUT} = 10mA ~ 5A		0.25	1	%
Output Voltage Noise	e _N	f = 10Hz to 100kHz, C _{OUT} = 2.2μF		30		μV _{RMS}
Shutdown Supply Current	I _{OFF}	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



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