



1.5A LDO REGULATOR

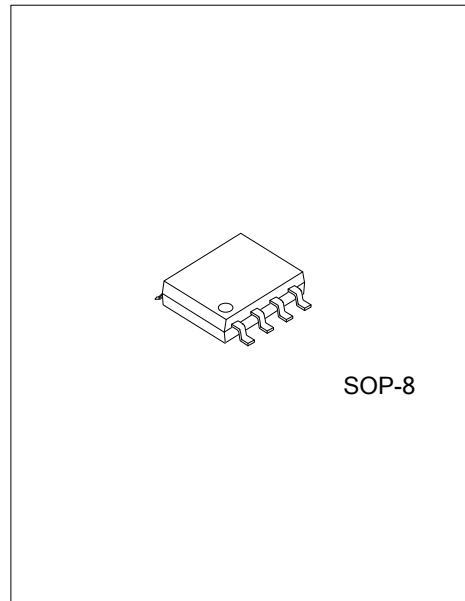
DESCRIPTION

The UTC **UR1171** is a typical LDO (linear regulator) with the features of high output voltage accuracy, low supply current, low ON-resistance, and high ripple rejection.

During operation of the UTC **UR1171**, the dropout voltage is very low and the response of line transient and load transient are very well.

Internally, there're many functions of UTC **UR1171** which can be seen in the block figure. There are a voltage reference unit, an error amplifier, resistor-net for voltage setting, a current limit circuit, and a chip enable circuit in each UTC **UR1171**.

The UTC **UR1171** can be used as an ideal of the power supply for hand-held communication equipment, such as: power source for portable communication equipment, power source for electrical appliances, for example, cameras, VCRs and camcorders and power source for battery-powered equipment.



FEATURES

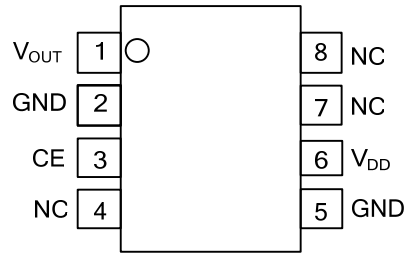
- * Low standby current (TYP=0.1μA)
- * Supply current (TYP=80μA)
- * Output current (MIN=1.5A@V_{IN}=V_{OUT}+1.0V)
- * Output voltage accuracy (±2.0%)
- * Output voltage (1.2V~5.0V)
- * Low dropout voltage (TYP=0.09V@V_{OUT}=3.0V, I_{OUT}=300mA)
- * Line regulation (TYP=0.05%/V)
- * Low temperature-drift coefficient of output voltage
- * Built-in thermal shunt circuit
- * Built-in current limit circuit

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UR1171xxL-S08-T	UR1171xxG-S08-T	SOP-8	Tube
UR1171xxL-S08-R	UR1171xxG-S08-R	SOP-8	Tape Reel

<p>UR1171xxL-S08-T</p>	<p>(1) Packing Type (2) Package Type (3) Lead Free (4) Enable Threshold Level</p>	<p>(1) T: Tube, R: Tape Reel (2) S08: SOP-8 (3) L: Lead Free, G: Halogen Free (4) AH: 1.5A/Active High</p>
------------------------	---	--

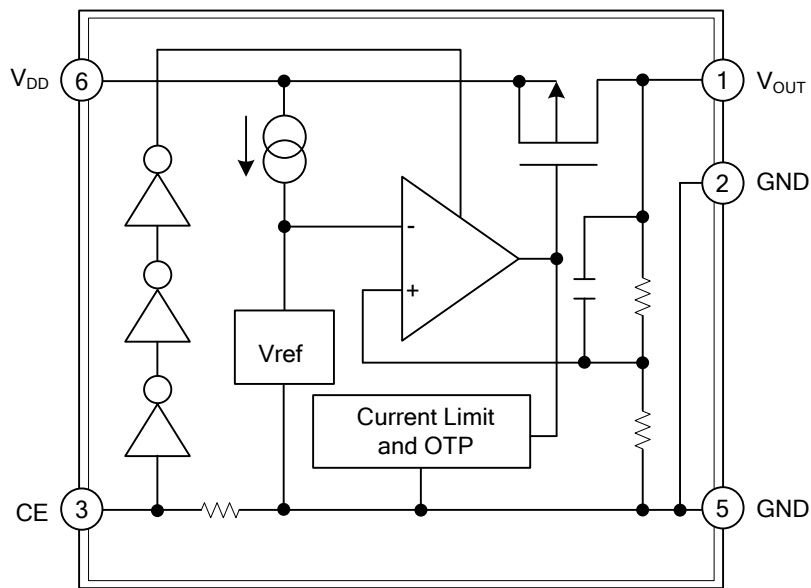
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{OUT}	Output Pin
2, 5	GND	Ground Pin
3	CE	Chip Enable Pin
4, 7, 8	NC	No Connection
6	V _{DD}	Input Pin

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	7.0	V
Input Voltage(CE or CE Input Pin)	V_{CE}	-0.3~ $V_{IN}+0.3$	V
Output Voltage	V_{OUT}	-0.3~ $V_{IN}+0.3$	V
Output Current	I_{OUT}	3.5	A
Power Dissipation	P_D	606	mW
Operating Temperature	T_{OPT}	-40~85	°C
Storage Temperature	T_{STG}	-55~125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

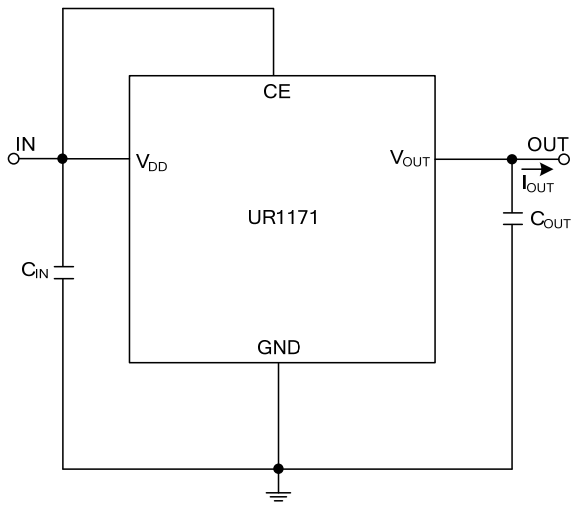
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

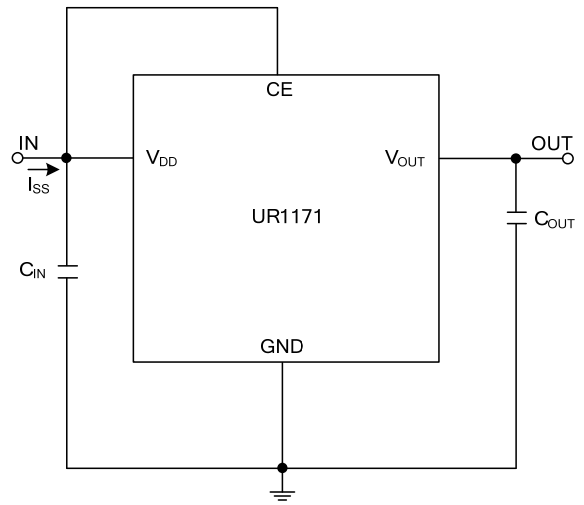
UR1171AH

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V_{IN}				6.0	V
Supply Current	I_{SS}	$V_{IN}-V_{OUT}=1.0\text{V}$, $V_{CE}=V_{IN}$		80	160	μA
Standby Current	I_{STB}	$V_{IN}-V_{OUT}=1.0\text{V}$, $V_{CE}=0\text{V}$		0.1	2.0	μA
Output Voltage	V_{OUT}	$V_{IN}-V_{OUT}=1.0\text{V}$, $I_{OUT}=200\text{mA}$	x0.98		x1.02	V
Output Current	I_{OUT}	$V_{IN}-V_{OUT}=1.0\text{V}$	1.5			A
Load Regulation	$\Delta V_{OUT}/\Delta I_{OUT}$	$V_{IN}-V_{OUT}=1.0\text{V}$, $1\text{mA}\leq I_{OUT}\leq 300\text{mA}$		10	60	mV
Dropout Voltage	V_{DIF}	$I_{OUT}=300\text{mA}$, $V_{OUT}=1.5\leq V_{OUT}<1.6$		0.16	0.35	V
		$I_{OUT}=300\text{mA}$, $V_{OUT}=1.6\leq V_{OUT}<1.7$		0.14	0.32	V
		$I_{OUT}=300\text{mA}$, $V_{OUT}=1.7\leq V_{OUT}<1.8$		0.13	0.28	V
		$I_{OUT}=300\text{mA}$, $V_{OUT}=1.8\leq V_{OUT}<2.0$		0.12	0.24	V
		$I_{OUT}=300\text{mA}$, $V_{OUT}=2.0\leq V_{OUT}<2.5$		0.10	0.21	V
		$I_{OUT}=300\text{mA}$, $V_{OUT}=2.5\leq V_{OUT}\leq 5.0$		0.09	0.18	V
Line Regulation	$\Delta V_{OUT}/\Delta V_{IN}$	$I_{OUT}=200\text{mA}$, $V_{OUT}=2.1\text{V}\leq V_{IN}<6.0\text{V}$		0.05	0.30	%V
		$I_{OUT}=200\text{mA}$, $V_{OUT}+0.5\text{V}\leq V_{IN}\leq 6.0\text{V}$				
Ripple Rejection	RR	$f=1\text{kHz}$, Ripple 0.5 V_{P-P} , $V_{IN}-V_{OUT}=1.0\text{V}$		50		dB
		$f=1\text{kHz}$, Ripple 0.5 V_{P-P} , $V_{IN}=5.75\text{V}$				
Output Voltage Temperature Coefficient	$\Delta V_{OUT}/\Delta T$	$I_{OUT}=10\text{mA}$, $-40^\circ\text{C}\leq T_A\leq 85^\circ\text{C}$		± 100		ppm/ °C
Short Current Limit	I_{LIM}	$V_{OUT}=0\text{V}$		200		mA
Pull-down resistance for CE pin	R_{PD}		2.5	5.0	10.0	$\text{M}\Omega$
CE Input Voltage "H"	V_{CEH}		1.5		V_{IN}	V
Thermal Shutdown Detector Threshold Temperature	T_{TSD}	Junction Temperature		150		°C
Thermal Shutdown Released Temperature	T_{TSR}	Junction Temperature		120		°C

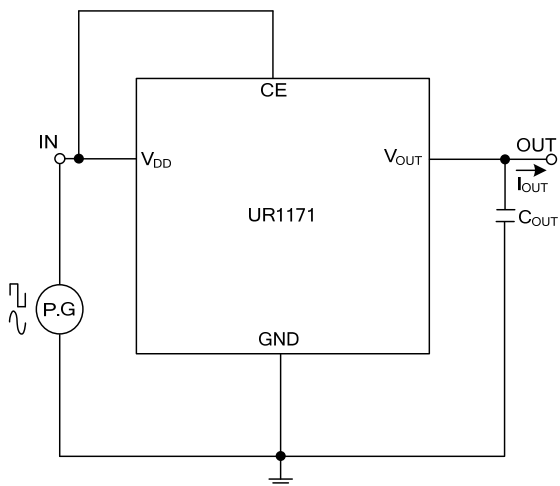
■ TEST CIRCUIT



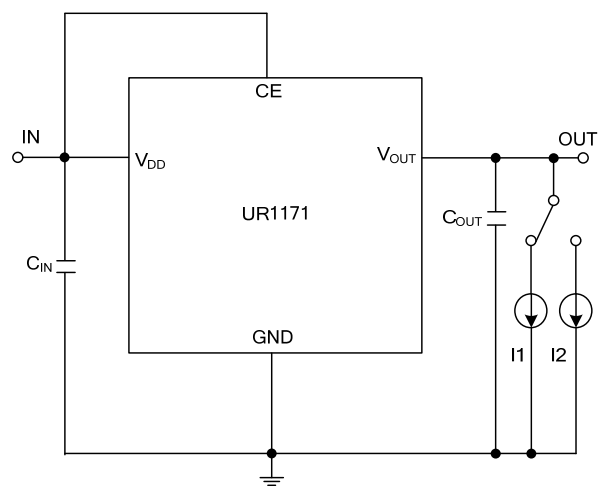
Standard Test Circuit



Supply Current Test Circuit

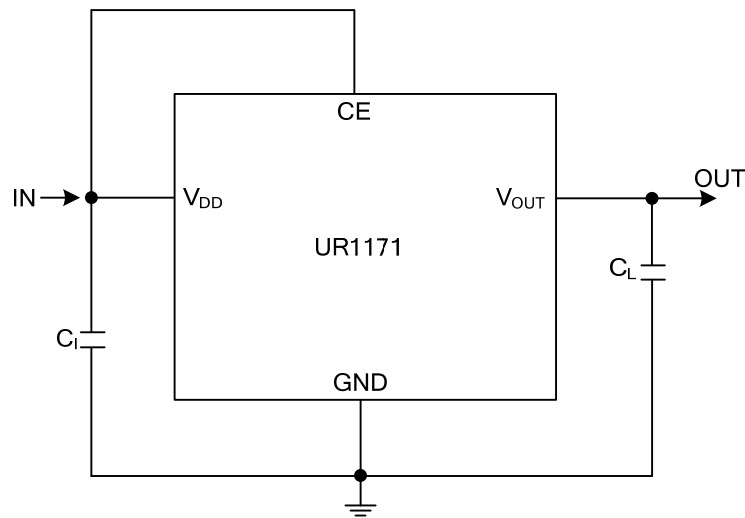


Test Circuit for Ripple Rejection, Input Transient Response



Test Circuit for Load Transient Response

■ TYPICAL APPLICATION CIRCUIT



$1.5V \leq V_{OUT} < 1.8V$: $C_I = 10\mu F$ (Ceramic), $C_L = 10\mu F$ (Ceramic)
 $1.8V \leq V_{OUT} \leq 5.0V$: $C_I = 4.7\mu F$ (Ceramic), $C_L = 4.7\mu F$ (Ceramic)

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.