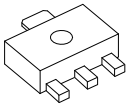
HIGH VOLTAGE , ULTRA LOW IQ VOLTAGE REGULATOR



SOT-89

■ DESCRIPTION

The UTC **UR51XXH** Series are a low dropout regulator with wide input voltage range, high output voltage accuracy, ultra low quiescent current and low dropout. This regulator is based on a CMOS process, and it's input voltage could high enough more than 18V, thus they are very suitable for high voltage application.

■ FEATURES

* High output voltage accuracy: ±2%
* Ultra low quiescent current: 1.2uA (Typ.)
* Low temperature-drift coefficient of V_{OUT}: ±50ppm/°C (Typ.)
* Wide Input voltage range: 0 ~ 18V

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UR51XXHL-AB3-R	UR51XXHG-AB3-R	SOT-89	G	I	O	Tape Reel

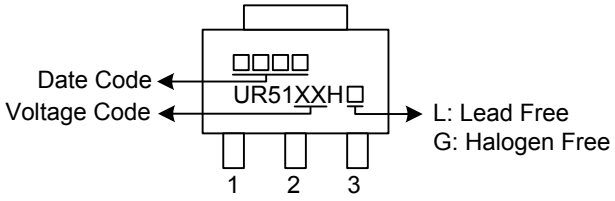
Note: Pin assignment: G: Ground I: V_{IN} O: V_{OUT}

UR51XXHG-AB3-R

(1)Packing Type
(2)Package Type
(4)Green Package
(5)Output Voltage Code

(1) R: Tape Reel
(2) AB3: SOT-89
(4) G: Halogen Free and Lead Free, L: Lead Free
(5) XX: Refer to Marking Information

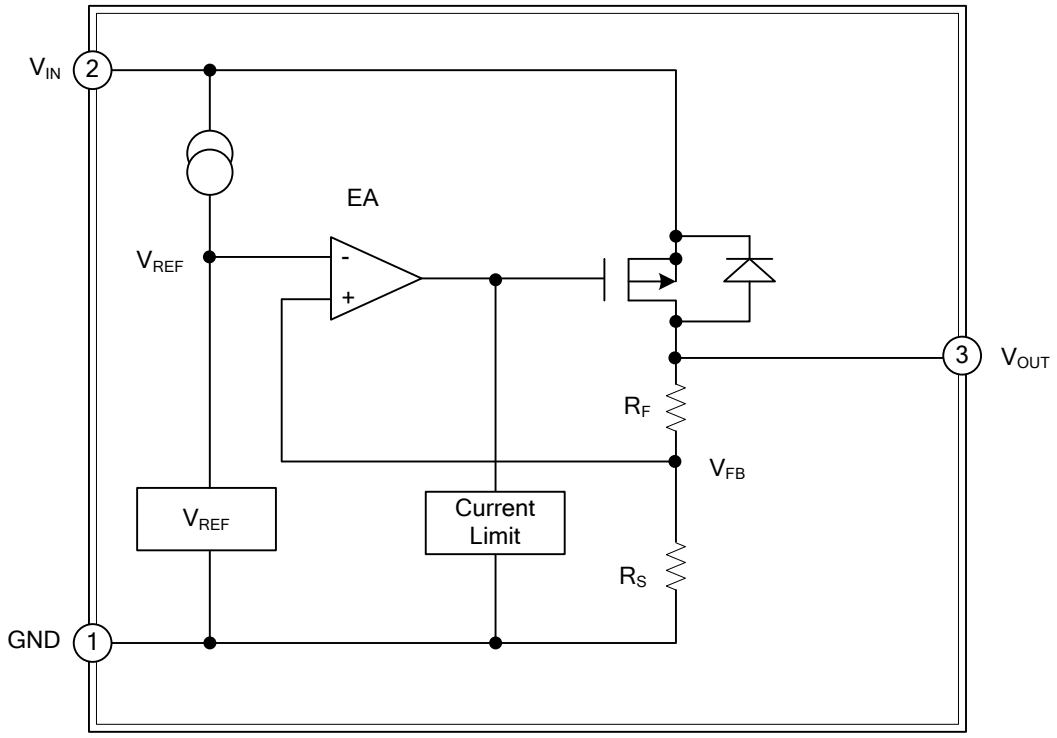
■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	33:3.3V 36: 3.6V 50: 5.0V	

■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	GND	Ground
2	V_{IN}	Input voltage
3	V_{OUT}	Regulated output voltage

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	18	V
Power Dissipation	P_D	500	mW
Operating Temperature Range	T_{OPR}	-40 ~ +85	°C
Storage Temperature Range	T_{STG}	-40 ~ +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°C, unless otherwise specified)

UTC **UR5133H**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA	3.234	3.3	3.366	V
Output Current (Note 1)	I_{OUT}	V_{IN}=V_{OUT}+2V	80			mA
Dropout Voltage (Note 2)	V_{DROP}	I_{OUT}=1mA		50	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	V_{OUT}+2V≤V_{IN}≤18V, I_{OUT}=1mA		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	V_{IN}=V_{OUT}+2V, 1.0mA≤I_{OUT}≤50mA		50	100	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA , -40°C≤T_A≤85°C		±100		Ppm/°C
Supply Current	I_{SS1}	V_{IN}=V_{OUT}+2V		1.2	4.0	uA

UTC **UR5136H**

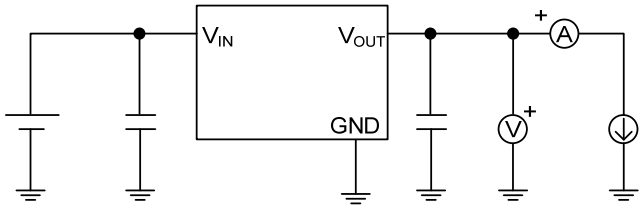
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA	2.94	3.6	3.672	V
Output Current (Note 1)	I_{OUT}	V_{IN}=V_{OUT}+2V	80			mA
Dropout Voltage (Note 2)	V_{DROP}	I_{OUT}=1mA		50	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	V_{OUT}+2V≤V_{IN}≤18V, I_{OUT}=1mA		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	V_{IN}=V_{OUT}+2V, 1.0mA≤I_{OUT}≤50mA		50	100	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA , -40°C≤T_A≤85°C		±100		Ppm/°C
Supply Current	I_{SS1}	V_{IN}=V_{OUT}+2V		1.2	4.0	uA

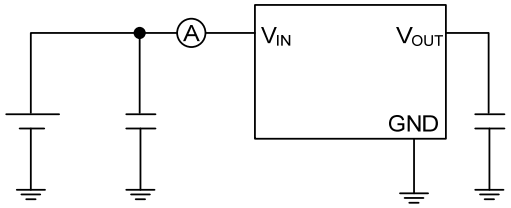
UTC **UR5150H**

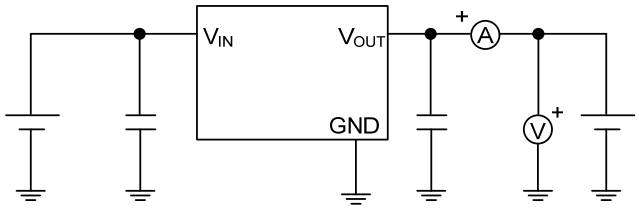
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA	4.9	5.0	5.1	V
Output Current (Note 1)	I_{OUT}	V_{IN}=V_{OUT}+2V	80			mA
Dropout Voltage (Note 2)	V_{DROP}	I_{OUT}=1mA		50	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	V_{OUT}+2V≤V_{IN}≤18V, I_{OUT}=1mA		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	V_{IN}=V_{OUT}+2V, 1.0mA≤I_{OUT}≤50mA		50	100	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	V_{IN}=V_{OUT}+2V, I_{OUT}=10mA , -40°C≤T_A≤85°C		±100		Ppm/°C
Supply Current	I_{SS1}	V_{IN}=V_{OUT}+2V		1.2	4.0	uA

Notes: 1. Increase the output current slowly, record the current when V_{OUT} decrease 98% of V_{OUT}.
2. V_{drop}=V_{IN1}-(V_{OUT}×0.98), V_{OUT}: V_{IN}=V_{OUT}+2V, I_{OUT}=1mA

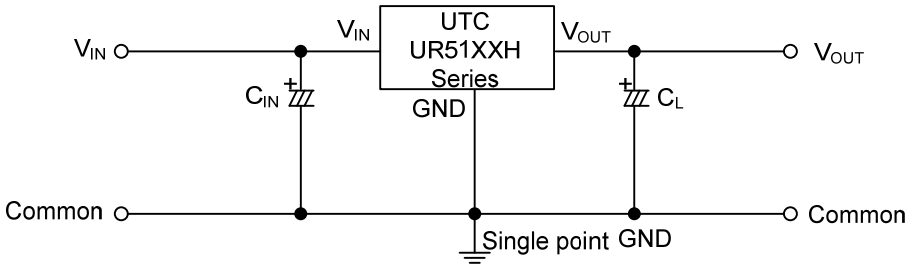
■ TEST CIRCUIT







■ TYPICAL APPLICATION CIRCUIT



C_{IN}>1.0μF
C_L>2.2μF (tantalum capacitor)