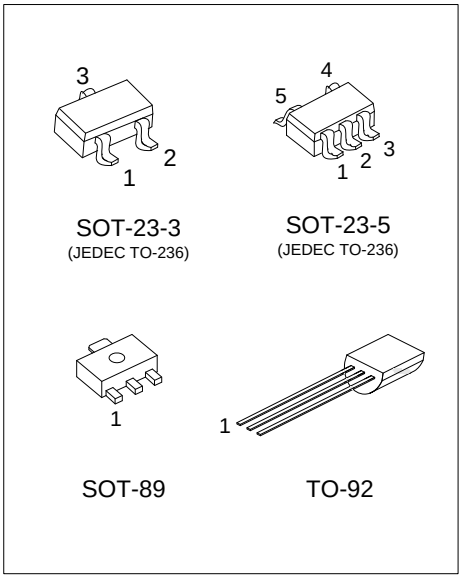
18V INPUT VOLTAGE 1A ULTRA LOW IQ VOLTAGE REGULATOR



■ DESCRIPTION

The UTC **UR57XX** 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.

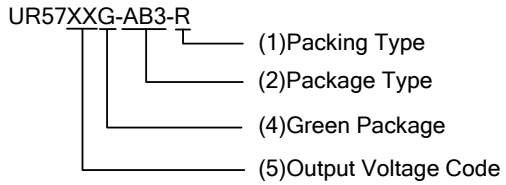
■ FEATURES

* High output voltage accuracy: ±2%
* Ultra low quiescent current: 1.0uA (Typ.)
* Low temperature-drift coefficient of V_{OUT}: ±100ppm/°C (Typ.)
* Wide Input voltage range: 0~18V

■ ORDERING INFORMATION

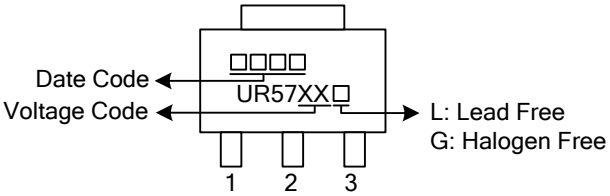
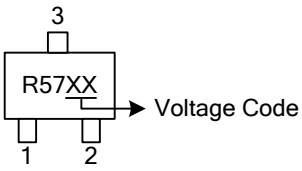
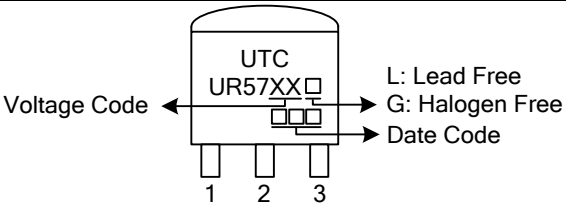
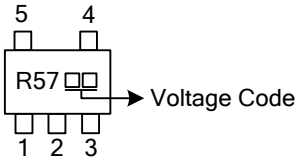
Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
UR57XXL-AB3-R	UR57XXG-AB3-R	SOT-89	G	I	O	-	-	Tape Reel
UR57XXL-AE2-R	UR57XXG-AE2-R	SOT-23-3	G	O	I	-	-	Tape Reel
UR57XXL-AE5-R	UR57XXG-AE5-R	SOT-23-5	I	G	N	N	O	Tape Reel
UR57XXL-T92-B	UR57XXG-T92-B	TO-92	G	I	O	-	-	Tape Box
UR57XXL-T92-K	UR57XXG-T92-K	TO-92	G	I	O	-	-	Bulk

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



(1) R: Tape Reel, B: Tape Box, K: Bulk
(2) AB3: SOT-89, AE2: SOT-23-3, AE5: SOT-23-5
T92: TO-92
(4) G: Halogen Free and Lead Free, L: Lead Free
(5) XX: Refer to Marking Information

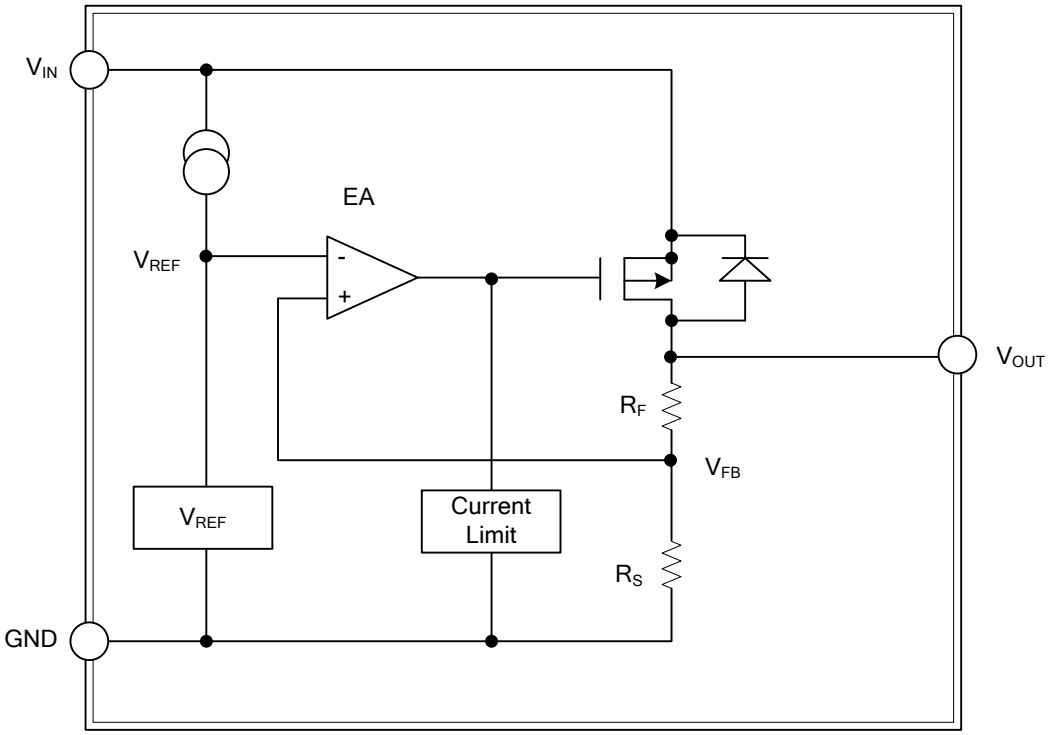
■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	33:3.3V 36:3.6V 40:4.0V 44:4.4V 50:5.0V	
SOT-23-3		
TO-92		
SOT-23-5		

■ PIN DESCRIPTION

PIN NO.				PIN NAME	DESCRIPTION
TO-92	SOT-89	SOT-23-3	SOT-23-5		
1	1	1	2	GND	Ground
2	2	3	1	V_{IN}	Input voltage.
3	3	2	5	V_{OUT}	Regulated output voltage
-	-	-	3/4	NC	No connect

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		V_{IN}	18	V
Output Voltage		V_{OUT}	6	V
Power Dissipation	SOT-23-3	P_D	200	mW
	SOT-23-5		250	mW
	SOT-89 TO-92		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 **UR5733**

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}	$V_{IN}=V_{OUT}+2V$	1000			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT}+2V \le V_{IN} \le 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \le I_{OUT} \le 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \le T_A \le 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	5.0	uA

UTC **UR5736**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	3.528	3.6	3.672	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	1000			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT}+2V \le V_{IN} \le 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \le I_{OUT} \le 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \le T_A \le 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	5.0	uA

UTC **UR5740**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	3.92	4.0	4.08	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	1000			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT}+2V \le V_{IN} \le 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \le I_{OUT} \le 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \le T_A \le 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	5.0	uA

■ ELECTRICAL CHARACTERISTICS (Cont.)

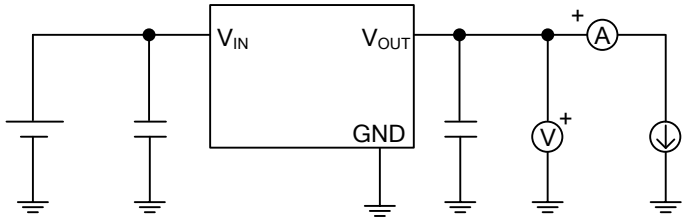
UTC **UR5750**

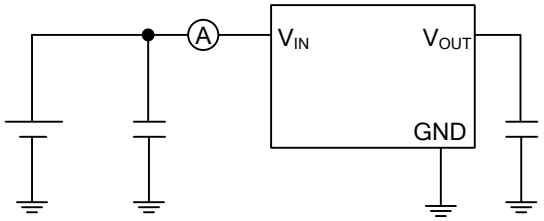
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	4.9	5.0	5.1	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	1000			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		170	200	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT}+2V \le V_{IN} \le 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \le I_{OUT} \le 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \bullet V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \le T_A \le 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	5.0	uA

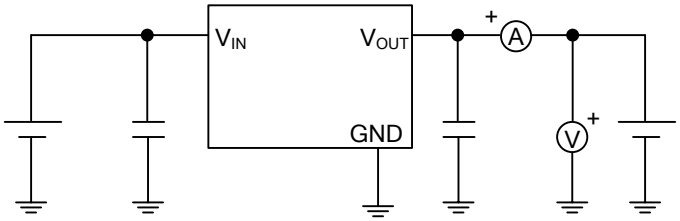
Notes: 1. Increase the output current slowly, record the current when V_{OUT} decrease 98% of V_{OUT}.

2. $V_{drop}=V_{IN1}-(V_{OUT} \times 0.98)$, V_{OUT}: $V_{IN}=V_{OUT}+2V$, $I_{OUT}=1mA$

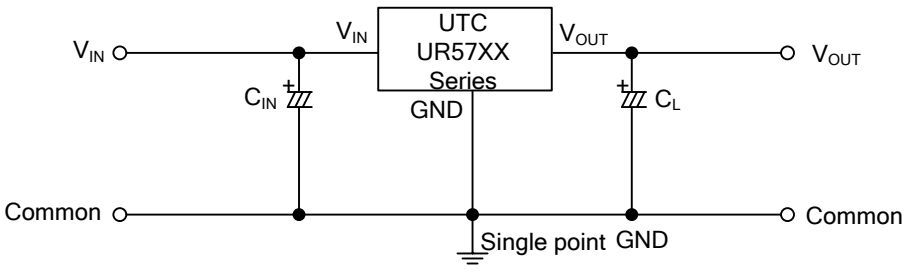
■ TEST CIRCUIT







■ TYPICAL APPLICATION CIRCUIT



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