



## UR75XX

CMOS IC

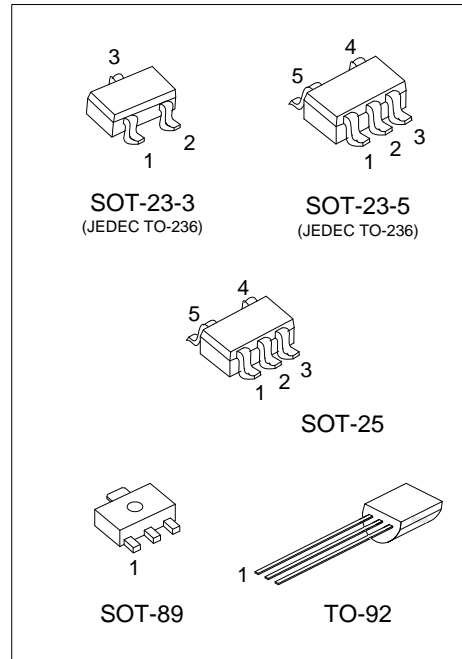
### HIGH VOLTAGE , ULTRA LOW IQ VOLTAGE REGULATOR

#### DESCRIPTION

The UTC UR75XX 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 36V, thus they are very suitable for high voltage application.

#### FEATURES

- \* High output voltage accuracy:  $\pm 2\%$
- \* Ultra low quiescent current: 1.2uA (Typ.)
- \* Low temperature-drift coefficient of  $V_{OUT}$ :  $\pm 50\text{ppm}/^\circ\text{C}$  (Typ.)
- \* Wide Input voltage range: 0 ~ 36V



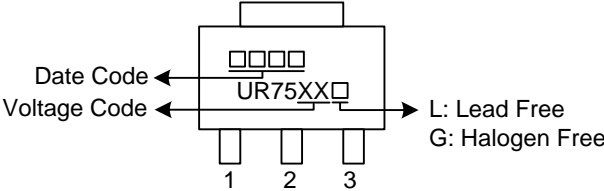
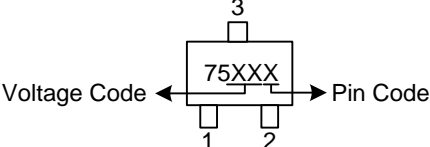
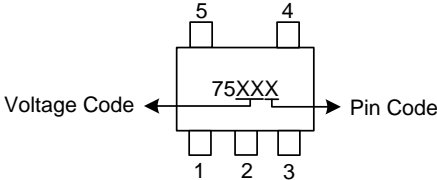
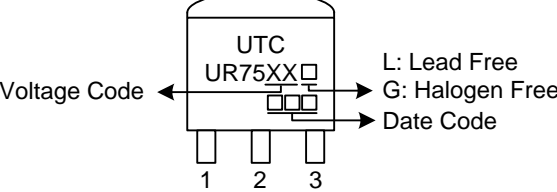
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
UR75XXL-AB3-R	UR75XXG-AB3-R	SOT-89	G	I	O	-	-	Tape Reel
UR75XXL-AE2-1-R	UR75XXG-AE2-1-R	SOT-23-3	G	I	O	-	-	Tape Reel
UR75XXL-AE2-3-R	UR75XXG-AE2-3-R	SOT-23-3	G	O	I	-	-	Tape Reel
UR75XXL-AE2-4-R	UR75XXG-AE2-4-R	SOT-23-3	I	O	G	-	-	Tape Reel
UR75XXL-AE5-C-R	UR75XXG-AE5-C-R	SOT-23-5	I	G	N	N	O	Tape Reel
UR75XXL-AE5-F-R	UR75XXG-AE5-F-R	SOT-23-5	G	I	O	N	N	Tape Reel
UR75XXL-AF5-C-R	UR75XXG-AF5-C-R	SOT-25	I	G	N	N	O	Tape Reel
UR75XXL-AF5-F-R	UR75XXG-AF5-F-R	SOT-25	G	I	O	N	N	Tape Reel
UR75XXL-T92-B	UR75XXG-T92-B	TO-92	G	I	O	-	-	Tape Box
UR75XXL-T92-K	UR75XXG-T92-K	TO-92	G	I	O	-	-	Bulk

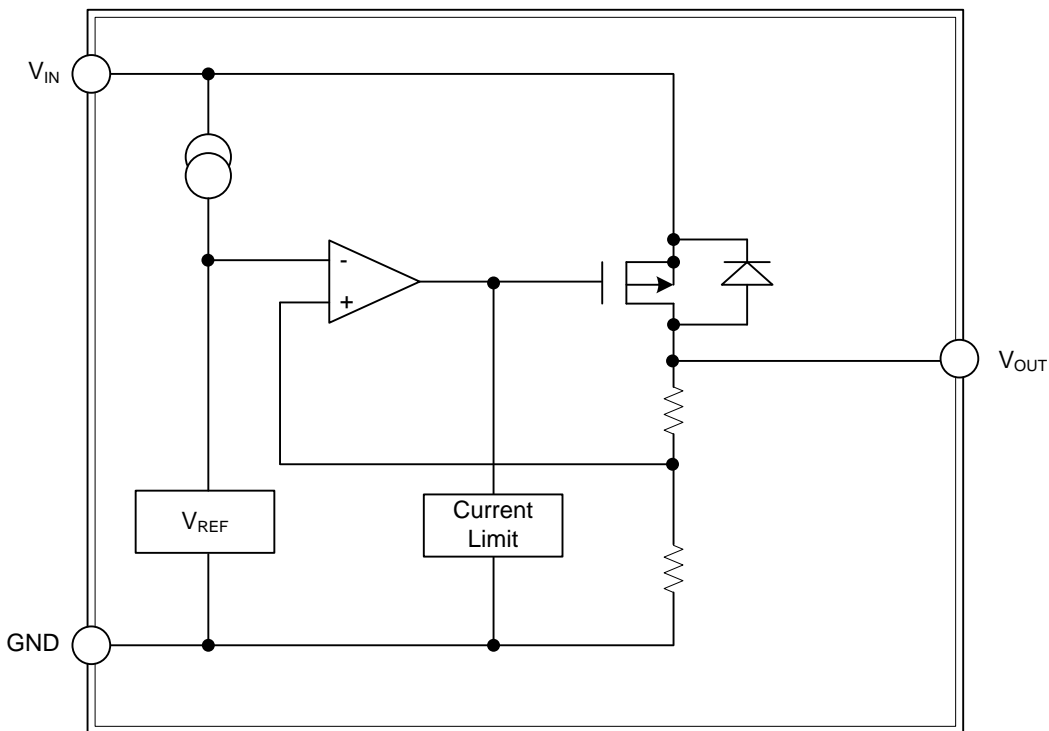
Note: Pin assignment: G: Ground I:  $V_{IN}$  O:  $V_{OUT}$  N: NC

<p>UR75XXG-AE2-1-R</p> <p>(1)Packing Type</p> <p>(2)Pin Assignment</p> <p>(3)Package Type</p> <p>(4)Green Package</p> <p>(5)Output Voltage Code</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk</p> <p>(2) refer to Pin Assignment</p> <p>(3) AB3: SOT-89, AE2: SOT-23-3, AE5: SOT-23-5 AF5: SOT-25, T92: TO-92</p> <p>(4) G: Halogen Free and Lead Free, L: Lead Free</p> <p>(5) XX: Refer to Marking Information</p>
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## MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89	15:1.5V 18:1.8V 21:2.1V	 <p>Date Code Voltage Code L: Lead Free G: Halogen Free</p>
SOT-23-3	23:2.3V 25:2.5V 27:2.7V 30:3.0V 33:3.3V 36:3.6V	 <p>Voltage Code Pin Code</p>
SOT-23-5 SOT-25	40:4.0V 44:4.4V 50:5.0V 60:6.0V 70:7.0V 80:8.0V	 <p>Voltage Code Pin Code</p>
TO-92	90:9.0V 10:10V 12:12V	 <p>Voltage Code L: Lead Free G: Halogen Free Date Code</p>

## BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		$V_{IN}$	36	V
Power Dissipation	SOT-23-3	$P_D$	200	mW
	SOT-23-5		250	mW
	SOT-25			
	SOT-89/TO-92		500	mW
Operating Temperature Range		$T_{OPR}$	-40 ~ +125	°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 ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

#### UTC UR7515

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}$	1.47	1.5	1.53	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1\text{mA}$		45	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1\text{mA}$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0\text{mA} \leq I_{OUT} \leq 50\text{mA}$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}, -40^\circ\text{C} \leq T_A \leq 85^\circ\text{C}$		±50	±100	Ppm/°C
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	uA

#### UTC UR7518

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}$	1.764	1.8	1.836	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1\text{mA}$		45	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1\text{mA}$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0\text{mA} \leq I_{OUT} \leq 50\text{mA}$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}, -40^\circ\text{C} \leq T_A \leq 85^\circ\text{C}$		±50	±100	Ppm/°C
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	uA

#### UTC UR7521

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}$	2.058	2.1	2.142	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1\text{mA}$		40	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1\text{mA}$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0\text{mA} \leq I_{OUT} \leq 50\text{mA}$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10\text{mA}, -40^\circ\text{C} \leq T_A \leq 85^\circ\text{C}$		±50	±100	Ppm/°C
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	uA

## ■ ELECTRICAL CHARACTERISTICS (Cont.)

### UTC UR7523

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	2.254	2.3	2.346	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		40	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7525

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	2.45	2.5	2.55	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		40	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7527

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	2.646	2.7	2.754	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		40	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7530

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	2.94	3.0	3.06	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	70	100		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		40	100	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

## ■ ELECTRICAL CHARACTERISTICS (Cont.)

### UTC UR7533

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)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	80	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7536

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)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	65	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7540

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)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	65	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7544

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	4.312	4.4	4.488	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	65	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

## ■ ELECTRICAL CHARACTERISTICS (Cont.)

### UTC UR7550

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)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	65	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7560

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	5.88	6.0	6.12	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	60	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7570

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	6.86	7.0	7.14	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	60	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7580

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	7.84	8.0	8.16	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		30	60	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

## ■ ELECTRICAL CHARACTERISTICS (Cont.)

### UTC UR7590

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	8.82	9.0	9.18	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		25	55	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

### UTC UR7510

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	9.8	10.0	10.2	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		25	55	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

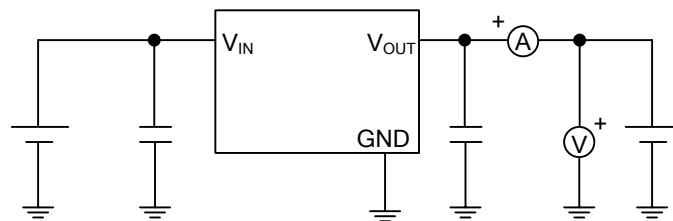
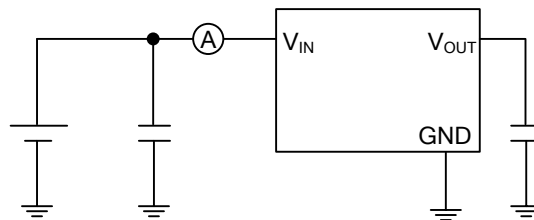
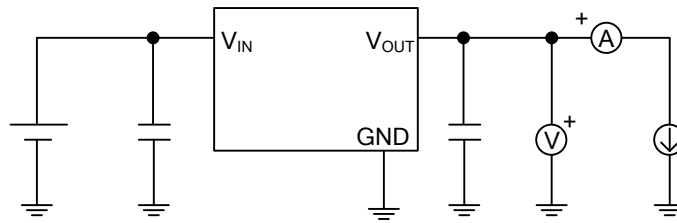
### UTC UR7512

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA$	11.76	12.0	12.24	V
Output Current (Note 1)	$I_{OUT}$	$V_{IN}=V_{OUT}+2V$	100	150		mA
Dropout Voltage (Note 2)	$V_{DROP}$	$I_{OUT}=1mA$		25	55	mV
Line Regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 36V, I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT}+2V, 1.0mA \leq I_{OUT} \leq 50mA$		30	80	mV
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V, I_{OUT}=10mA, -40^\circ C \leq T_A \leq 85^\circ C$		$\pm 50$	$\pm 100$	Ppm/ $^\circ C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT}+2V$		1.2	3.0	$\mu A$

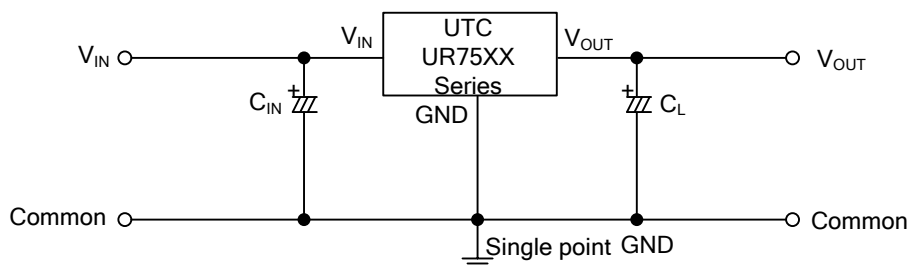
Notes: 1. Increase the output current slowly, record the current when  $V_{OUT}$  decrease 98% of  $V_{OUT}$ .

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

## ■ TEST CIRCUIT



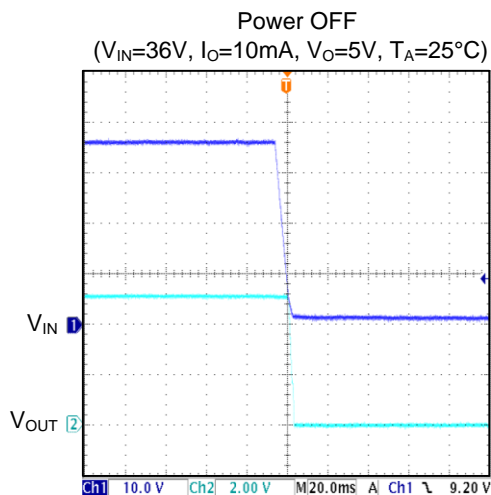
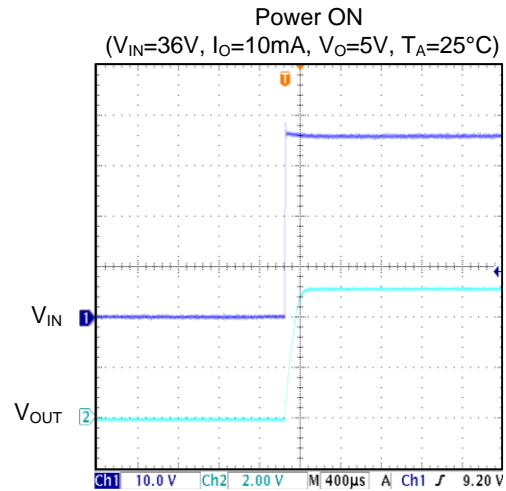
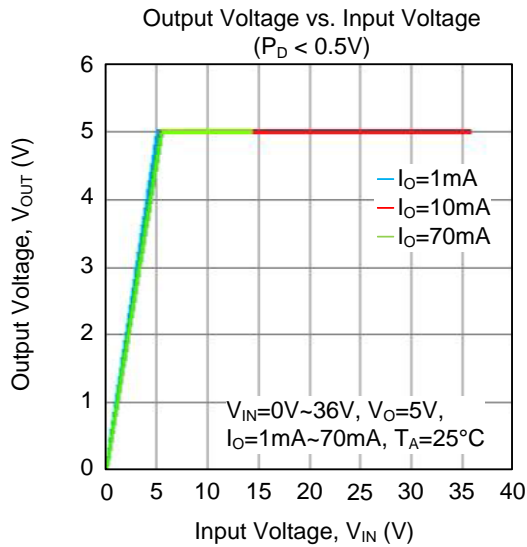
## ■ TYPICAL APPLICATION CIRCUIT



$C_{IN} > 1.0\mu\text{F}$   
 $C_L > 2.2\mu\text{F}$  (tantalum capacitor)



## ■ TYPICAL CHARACTERISTICS



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