UNISONIC TECHNOLOGIES CO., LTD

UR56XX1   Preliminary   *CMOS IC*

18-V INPUT VOLTAGE 500MA ULTRA LOW IQ VOLTAGE REGULATOR

SOT-89
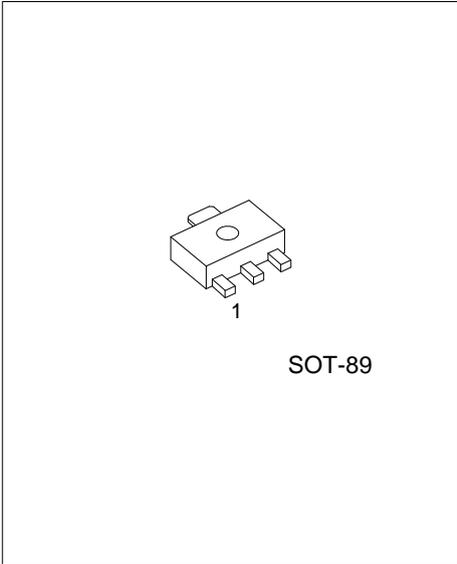
■ **DESCRIPTION**

The UTC **UR56XX1** 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	
UR56XX1L-AB3-R	UR56XX1G-AB3-R	SOT-89	O	G	I	Tape Reel

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

UR56XX1G-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

QW-R502-B86.a

■ **MARKING INFORMATION**

PACKAGE	VOLTAGE CODE	MARKING
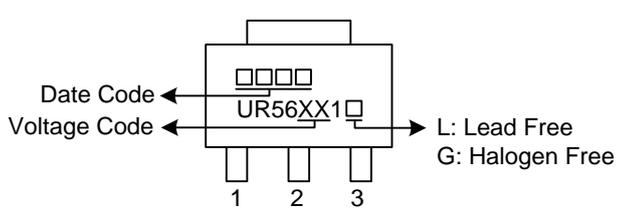
SOT-89	15:1.5V
	18:1.8V
	21:2.1V
	23:2.3V
	25:2.5V
	27:2.7V
	30:3.0V
	33:3.3V
	36:3.6V
	40:4.0V
	44:4.4V
	50:5.0V
	60:6.0V
	70:7.0V
	80:8.0V
	90:9.0V
	10:10V
	12:12V
		Date Code ◄── □□□□
		                 UR56XX1□
		Voltage Code ◄──
		               ──► L: Lead Free
		                     G: Halogen Free
		     1 2 3

■ **PIN DESCRIPTION**

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

■ **BLOCK DIAGRAM**

UR56XX1   Preliminary   *CMOS IC*
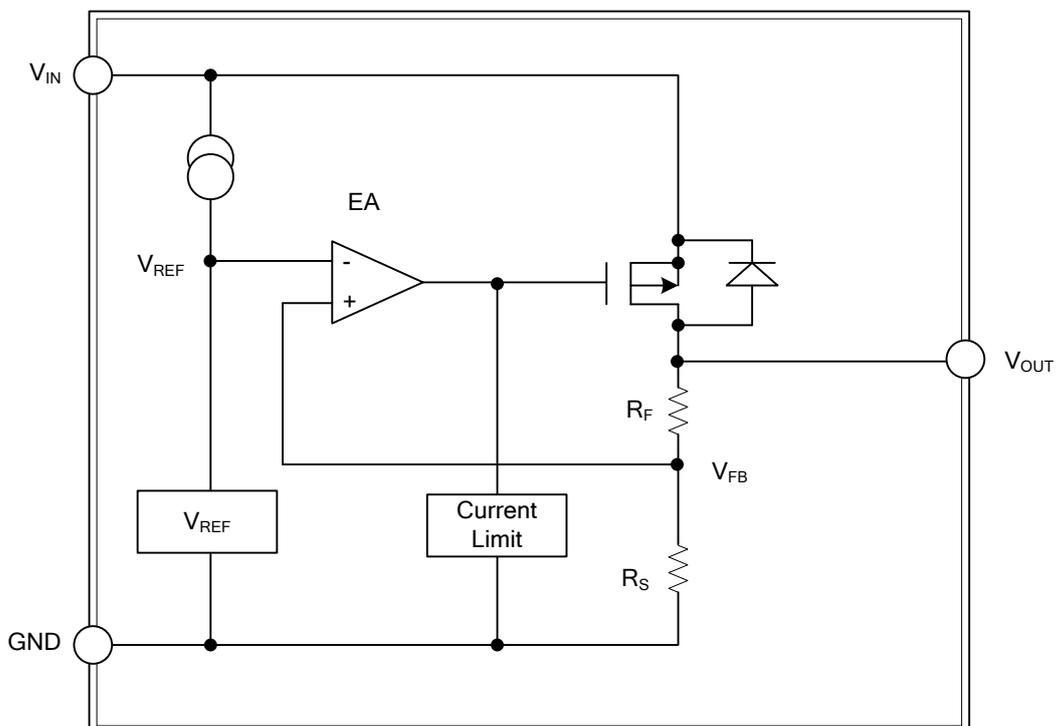
■ **ABSOLUTE MAXIMUM RATING**

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	18	V
Output Voltage	V_{OUT}	12	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 **UR56151**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	1.47	1.5	1.53	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=60mA$		100	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56181**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	1.764	1.8	1.836	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=60mA$		100	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56211**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$	2.058	2.1	2.142	V
Output Current (Note 1)	I_{OUT}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=80mA$		120	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

■ ELECTRICAL CHARACTERISTICS (Cont.)

UTC **UR56231**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=80mA$		120	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56251**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=80mA$		120	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56271**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=80mA$		120	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56301**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=80mA$		120	150	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UR56XX1

■ ELECTRICAL CHARACTERISTICS (Cont.)

UTC **UR56331**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56361**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56401**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		160	200	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56441**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		170	200	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

■ **ELECTRICAL CHARACTERISTICS (Cont.)**

UTC **UR56501**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=100mA$		170	200	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56601**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		1.0	3.0	uA

UTC **UR56701**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		2.0	5.0	uA

UTC **UR56801**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		2.0	5.0	uA

■ **ELECTRICAL CHARACTERISTICS (Cont.)**

UTC **UR56901**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		2.0	5.0	uA

UTC **UR56101**

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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		2.0	5.0	uA

UTC **UR56121**

| 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}	$V_{IN}=V_{OUT}+2V$	500			mA
Dropout Voltage (Note 2)	V_{DROP}	$I_{OUT}=200mA$		200	240	mV
Line Regulation	$\dfrac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$	$V_{OUT}+2V \leq V_{IN} \leq 16V$, $I_{OUT}=1mA$		0.05	0.2	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT}+2V$, $1.0mA \leq I_{OUT} \leq 100mA$		30	80	mV
Output Voltage Temperature Coefficient	$\dfrac{\Delta V_{OUT1}}{T_A \cdot V_{OUT}}$	$V_{IN}=V_{OUT}+2V$, $I_{OUT}=10mA$, $-40°C \leq T_A \leq 85°C$		±100		ppm/°C
Supply Current	I_{SS1}	$V_{IN}=V_{OUT}+2V$		2.0	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**
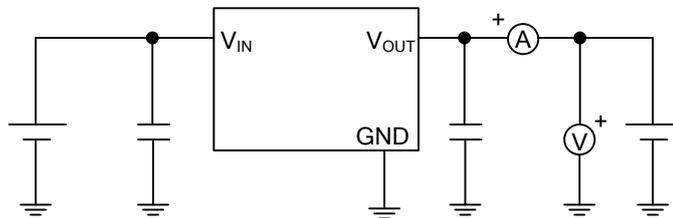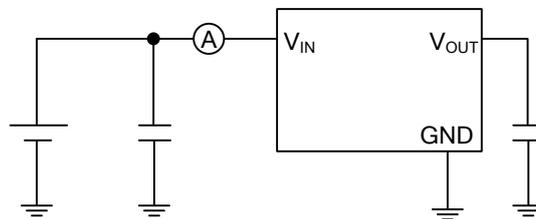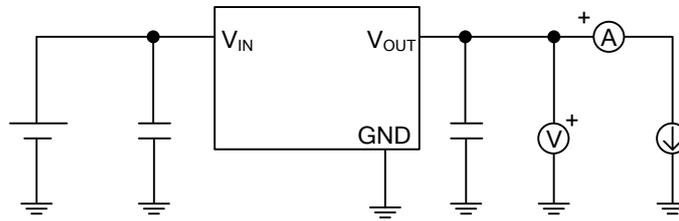
■ **TYPICAL APPLICATION CIRCUIT**
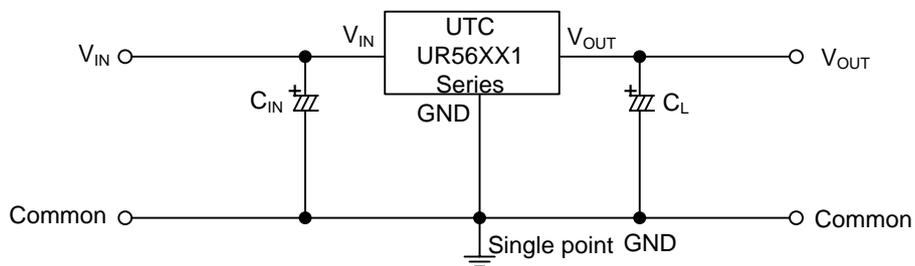
$C_{IN}>1.0\mu F$

$C_L>2.2\mu F$ (tantalum capacitor)