



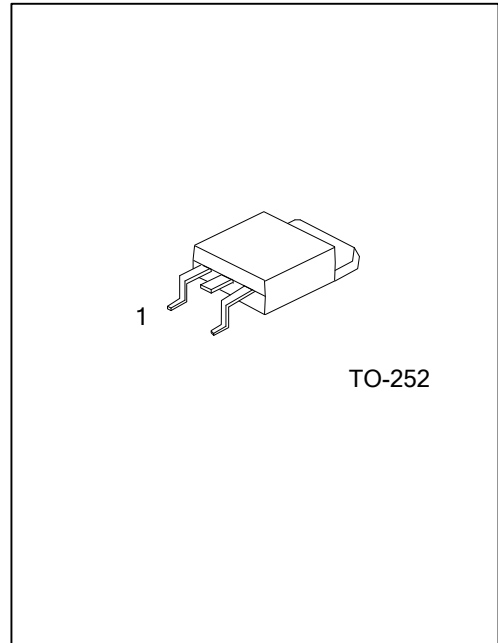
URXX20

LINEAR INTEGRATED CIRCUIT

2A OUTPUT TYPE LOW POWER-LOSS VOLTAGE REGULATOR

■ FEATURES

- * 2.0A output type
- * Output voltage precision: $\pm 2.5\%$
- * Built-in ON/OFF control function and over-current protection circuit.
- * Thermal shutdown protection.



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
URXX20L-TN3-D-T	URXX20G-TN3-D-T	TO-252	I	G	O	Tube
URXX20L-TN3-D-R	URXX20G-TN3-D-R	TO-252	I	G	O	Tape Reel

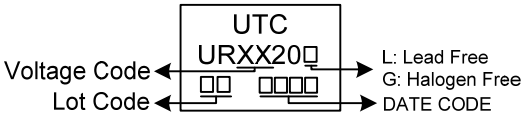
Note: Pin Assignment: I: INPUT G: GND O: OUTPUT

<p>URXX20L-TN3-D-T</p> <p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Lead Free (5) Voltage Code</p>	<p>(1) T: Tube, R: Tape Reel (2) refer to Assignment (3) TN3: TO-252 (4) L: Lead Free, G: Halogen Free (5) XX: refer to Marking Information</p>
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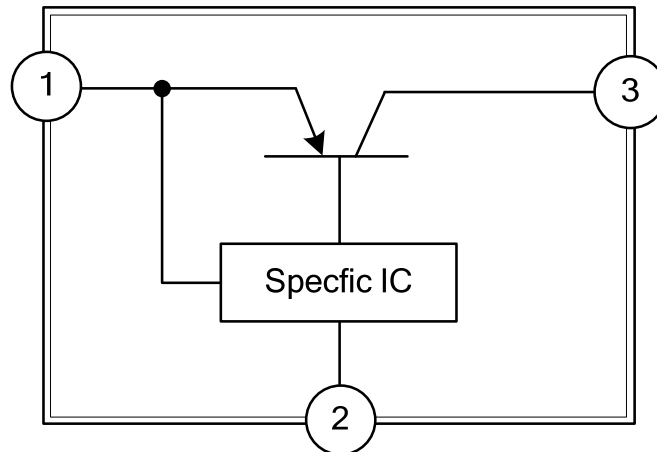
URXX20

LINEAR INTEGRATED CIRCUIT

MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-252	33 : 3.3V 12 : 12V	 <p>Voltage Code Lot Code</p> <p>UTC URXX20</p> <p>L: Lead Free G: Halogen Free DATE CODE</p>

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified.)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage(Note1)	V_{IN}	20	V
Output Current	I_{OUT}	2.0	A
Power Dissipation	P_D	0.7	W
Junction Temperature (Note2)	T_J	150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^\circ\text{C}$

Note 1: All are open except GND and applicable terminals.

Note 2: Overheat protection may operate at $125 \leq T_J \leq 150^\circ\text{C}$

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	112	$^\circ\text{C/W}$

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

For UR3320(3.3V)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=5.3\text{V}, I_{OUT}=1\text{A}$	3.218	3.3	3.382	V
Line Regulation	ΔV_{OUT}	$V_{IN}=4.3\sim 10.3\text{V}, I_{OUT}=5\text{mA}$		0.5	2.5	%
Load Regulation	ΔV_{OUT}	$V_{IN}=5.3\text{V}, I_{OUT}=5\text{mA}\sim 2.0\text{A}$		0.5	2.0	%
Temperature Coefficient of Output Voltage	$T_C V_O$	$T_J=0\sim 125^\circ\text{C}, I_{OUT}=5\text{mA}$		± 0.02		$\%/^\circ\text{C}$
Ripple Rejection	RR	Refer to Fig.2	45	55		dB
Dropout Voltage	V_D	$I_{OUT}=2\text{A}$ (Note 1)			0.7	V
Quiescent Current	I_Q	$I_{OUT}=0\text{A}, V_{IN}=5.3\text{V}$			10	mA

For UR1220(12V)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=14\text{V}, I_{OUT}=1\text{A}$	11.7	12.0	12.3	V
Line Regulation	ΔV_{OUT}	$V_{IN}=13\sim 19\text{V}, I_{OUT}=5\text{mA}$		0.5	2.5	%
Load Regulation	ΔV_{OUT}	$V_{IN}=14\text{V}, I_{OUT}=5\text{mA}\sim 2.0\text{A}$		0.5	2.0	%
Temperature Coefficient of Output Voltage	$T_C V_O$	$T_J=0\sim 125^\circ\text{C}, I_{OUT}=5\text{mA}$		± 0.02		$\%/^\circ\text{C}$
Ripple Rejection	RR	Refer to Fig.2	45	55		dB
Dropout Voltage	V_D	$I_{OUT}=2\text{A}$ (Note 1)			0.7	V
Quiescent Current	I_Q	$I_{OUT}=0\text{A}, V_{IN}=14\text{V}$			10	mA

Note: Input voltage shall be the value when output voltage is 95% in comparison with the initial value.

■ TEST CIRCUITS

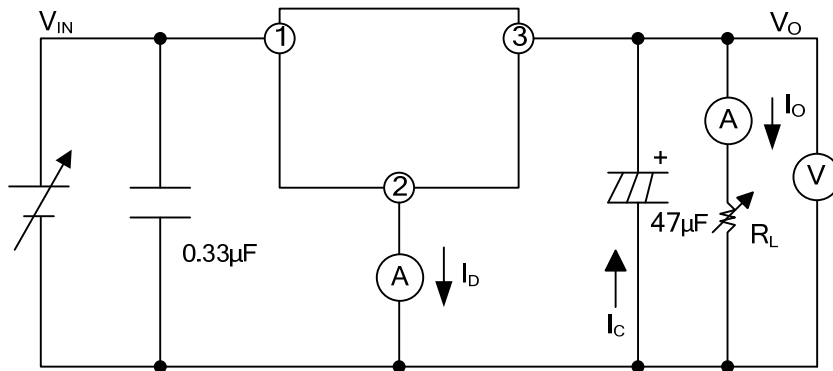
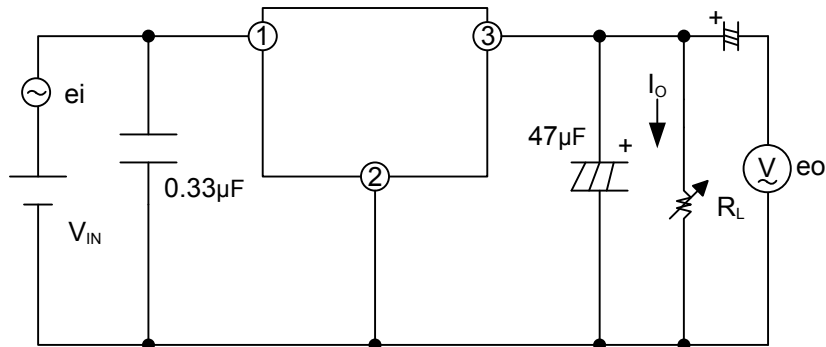


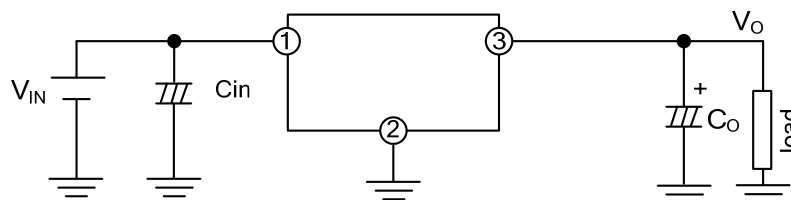
Fig.1



$V_{IN}=14V$ (UR1220) $f=120Hz$
 $V_{IN}=5.5V$ (UR3320) $e_i=0.5V_{rms}$
 $I_o=0.5A$
 $RR=20\log(e_i/e_o)$

Fig.2 For Ripple Rejection

■ TYPICAL APPLICATION



TYPICAL CHARACTERISTICS

Fig.3 Output Voltage Deviation vs .Junction Temperature (UR1220)

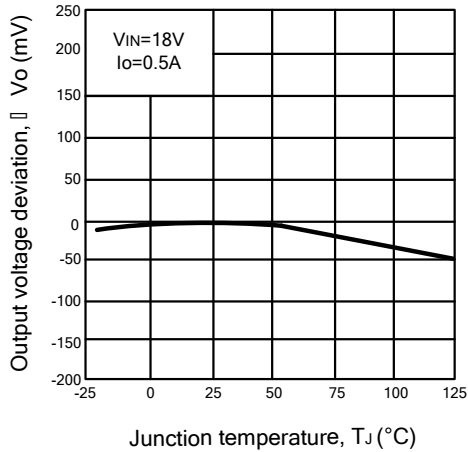


Fig.4 Output Voltage vs .Input Voltage (UR1220)

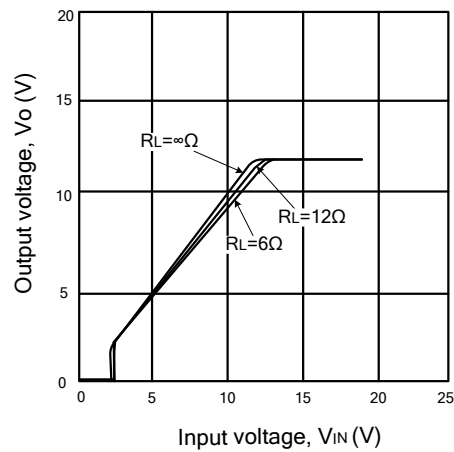


Fig.5 Circuit Operating Current vs .Input Voltage (UR1220)

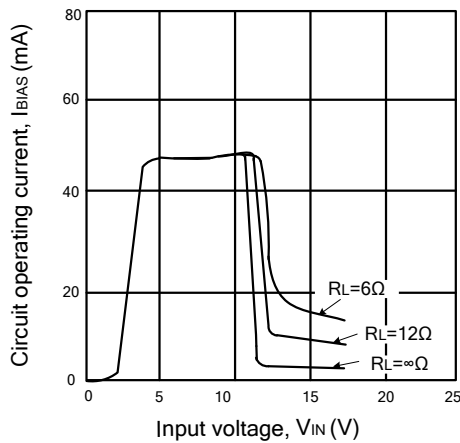


Fig.6 Dropout Voltage vs .Junction Temperature (UR1220)

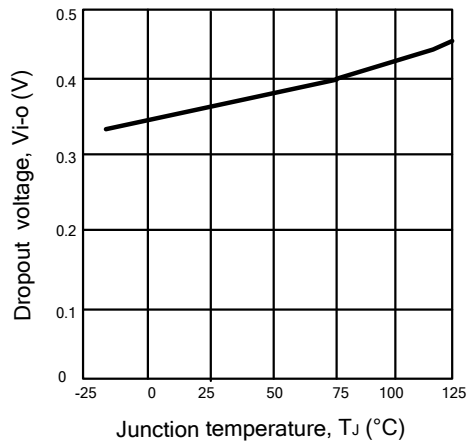


Fig.7 Quiescent Current vs .Junction Temperature (UR1220)

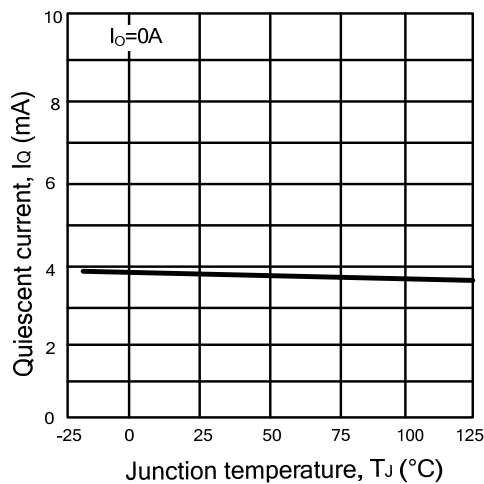
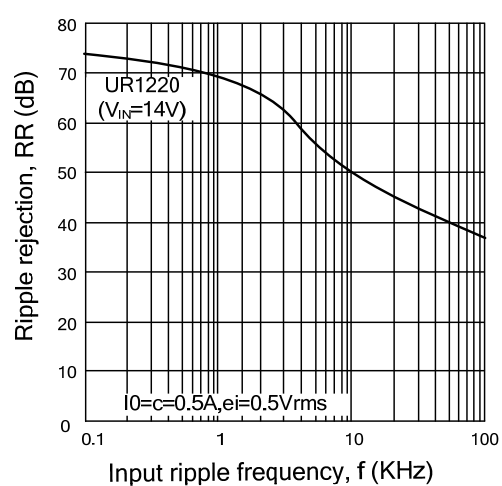
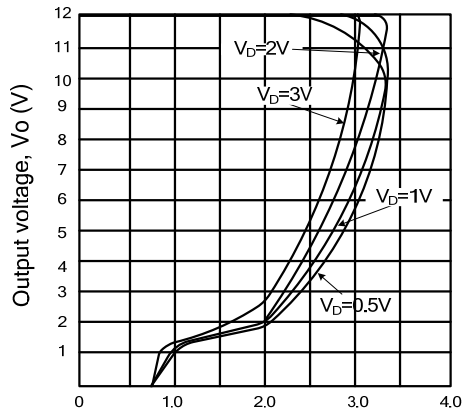


Fig.8 Ripple Rejection vs .Input Ripple Frequency



■ TYPICAL CHARACTERISTICS(Cont.)

Fig.9 Overcurrent Protection Characteristics
(Typical Value) (UR1220)



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