



## 79TXXAA

Advance

LINEAR INTEGRATED CIRCUIT

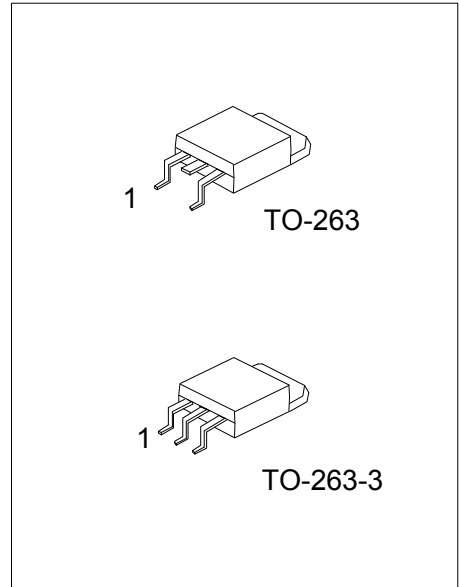
### 3 TERMINAL 1.5A NEGATIVE VOLTAGE REGULATOR

#### DESCRIPTION

The UTC **79TXXAA** series of three-terminal negative regulators is available several fixed output voltage, making them useful in a wide range of application. Each type employs internal current limiting, thermal shut-down, making it essentially indestructible.

#### FEATURES

- \* Output current up to 1.5A
- \* -5V, -12V output voltage available
- \* Thermal overload protection



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
79TXXAAL-TQ2-R	79TXXAAG-TQ2-R	TO-263	G	I	O	Tape Reel
79TXXAAL-TQ2-T	79TXXAAG-TQ2-T	TO-263	G	I	O	Tube
79TXXAAL-TQ3-R	79TXXAAG-TQ3-R	TO-263-3	G	I	O	Tape Reel
79TXXAAL-TQ3-T	79TXXAAG-TQ3-T	TO-263-3	G	I	O	Tube

Note: Pin Code: G: GND I: Input O: Output

<p>79TXXAAG-TQ2-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Free (4)Output Voltage Code</p>	<p>(1) R: Tape Reel, T: Tube (2) TQ2: TO-263, TQ3: TO-263-3 (3) G: Halogen Free and Lead Free, L: Lead Free (4) XX: refer to Marking Information</p>
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### MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-263 TO-263-3	05: 5V 12: 12V 15: 15V	<p>UTC 79TXXAA</p> <p>Voltage Code ←      → L: Lead Free Lot Code ←            → G: Halogen Free    → Date Code</p> <p>1      2      3</p>

### BLOCK DIAGRAM

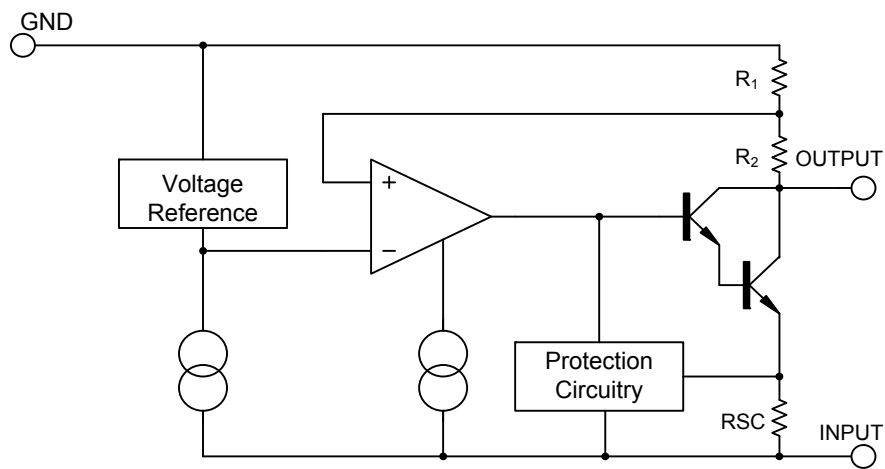


Fig.1

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

PARAMETER	SYMBOL	RATING	UNIT
Input Voltage	$V_{IN}$	-35	V
Output Current	$I_{OUT}$	1.5	A
Power Dissipation	$P_D$	Internally Limited	W
Operating Temperature	$T_{OPR}$	-40 ~ +125	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ +150	$^{\circ}\text{C}$

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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	$\theta_{JA}$	65	$^{\circ}\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	5	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS

( $I_{OUT}=0.5\text{A}$ ,  $T_J=0^{\circ}\text{C}\sim 125^{\circ}\text{C}$ ,  $C_I=2.2\mu\text{F}$ ,  $C_O=1\mu\text{F}$ , unless otherwise specified)

For UTC 79T05AA ( $V_{IN}=-10\text{V}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$T_J=25^{\circ}\text{C}$	-4.80	-5.0	-5.20	V
		$V_{IN}=-7\text{V}\sim -20\text{V}$ , $I_{OUT}=5\text{mA}\sim 1.5\text{A}$	-4.75		-5.25	V
Dropout Voltage	$V_D$	$I_{OUT}=1.5\text{A}$ , $T_J=25^{\circ}\text{C}$		2		V
Line Regulation	$\Delta V_{OUT}$	$V_{IN}=-7\text{V}\sim -25\text{V}$ , $T_J=25^{\circ}\text{C}$		10	100	mV
		$V_{IN}=-8\text{V}\sim -12\text{V}$ , $T_J=25^{\circ}\text{C}$		4	50	mV
Load Regulation	$\Delta V_{OUT}$	$I_{OUT}=5\text{mA}\sim 1.5\text{A}$ , $T_J=25^{\circ}\text{C}$		10	100	mV
		$I_{OUT}=250\text{mA}\sim 750\text{mA}$ , $T_J=25^{\circ}\text{C}$		3	50	mV
Quiescent Current	$I_Q$	$T_J=25^{\circ}\text{C}$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_{OUT}=5\text{mA}\sim 1\text{A}$		0.05	0.5	mA
		$V_{IN}=-7\text{V}\sim -25\text{V}$		0.1	1.3	mA
Output Noise Voltage	eN	$f=10\text{Hz}\sim 100\text{kHz}$ , $T_A=25^{\circ}\text{C}$		100		$\mu\text{V}$
Output Voltage Drift	$\Delta V_{OUT}/\Delta T$	$I_{OUT}=5\text{mA}$		-0.4		$\text{mV}/^{\circ}\text{C}$
Ripple Rejection	RR	$V_{IN}=-8\text{V}\sim -18\text{V}$ , $f=120\text{Hz}$	54	60		dB
Peak Current	$I_{PEAK}$	$T_J=25^{\circ}\text{C}$		2.2		A

For UTC 79T12AA ( $V_{IN}=-18\text{V}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$T_J=25^{\circ}\text{C}$	-11.52	-12.0	-12.48	V
		$V_{IN}=-14.5\text{V}\sim -27\text{V}$ , $I_{OUT}=5\text{mA}\sim 1.5\text{A}$	-11.40		-12.60	V
Dropout Voltage	$V_D$	$I_{OUT}=1.5\text{A}$ , $T_J=25^{\circ}\text{C}$		2		V
Line Regulation	$\Delta V_{OUT}$	$V_{IN}=-14.5\text{V}\sim -30\text{V}$ , $T_J=25^{\circ}\text{C}$		12	240	mV
		$V_{IN}=-16\text{V}\sim -22\text{V}$ , $T_J=25^{\circ}\text{C}$		6	120	mV
Load Regulation	$\Delta V_{OUT}$	$I_{OUT}=5\text{mA}\sim 1.5\text{A}$ , $T_J=25^{\circ}\text{C}$		12	240	mV
		$I_{OUT}=250\text{mA}\sim 750\text{mA}$ , $T_J=25^{\circ}\text{C}$		4	120	mV
Quiescent Current	$I_Q$	$T_J=25^{\circ}\text{C}$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_{OUT}=5\text{mA}\sim 1\text{A}$		0.05	0.5	mA
		$V_{IN}=-14.5\text{V}\sim -30\text{V}$		0.1	1.0	mA
Output Noise Voltage	eN	$f=10\text{Hz}\sim 100\text{kHz}$ , $T_A=25^{\circ}\text{C}$		200		$\mu\text{V}$
Output Voltage Drift	$\Delta V_{OUT}/\Delta T$	$I_{OUT}=5\text{mA}$		-0.8		$\text{mV}/^{\circ}\text{C}$
Ripple Rejection	RR	$V_{IN}=-15\text{V}\sim -25\text{V}$ , $f=120\text{Hz}$	54	60		dB
Peak Current	$I_{PEAK}$	$T_J=25^{\circ}\text{C}$		2.2		A

■ ELECTRICAL CHARACTERISTICS (Cont.)

For UTC 79T15AA ( $V_{IN}=-23V$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$T_J=25^{\circ}C$	-14.40	-15.0	-15.60	V
		$V_{IN}=-17.5V\sim-30V, I_{OUT}=5mA\sim1.5A$	-14.25		-15.75	V
Dropout Voltage	$V_D$	$I_{OUT}=1.5A, T_J=25^{\circ}C$		2		V
Line Regulation	$\Delta V_{OUT}$	$V_{IN}=-17.5V\sim-30V, T_J=25^{\circ}C$		12	300	mV
		$V_{IN}=-20V\sim-26V, T_J=25^{\circ}C$		6	150	mV
Load Regulation	$\Delta V_{OUT}$	$I_{OUT}=5mA\sim1.5A, T_J=25^{\circ}C$		12	300	mV
		$I_{OUT}=250mA\sim750mA, T_J=25^{\circ}C$		4	150	mV
Quiescent Current	$I_Q$	$T_J=25^{\circ}C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_{OUT}=5mA\sim1A$		0.05	0.5	mA
		$V_{IN}=-17.5V\sim-30.5V$		0.1	1.0	mA
Output Noise Voltage	eN	$f=10Hz\sim100kHz, T_A=25^{\circ}C$		250		$\mu V$
Output Voltage Drift	$\Delta V_{OUT}/\Delta T$	$I_{OUT}=5mA$		-0.9		$mV/^{\circ}C$
Ripple Rejection	RR	$V_{IN}=-18.5V\sim-28.5V, f=120Hz$	54	60		dB
Peak Current	$I_{PEAK}$	$T_J=25^{\circ}C$		2.2		A

■ APPLICATION CIRCUITS

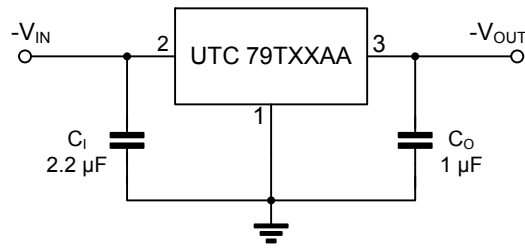


Fig.1 Fixed output regulator

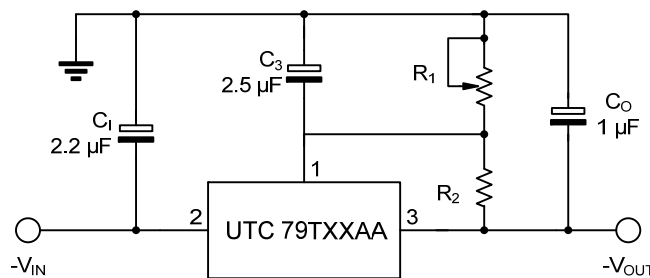


Fig.2 Circuit for increasing output voltage

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