



79DXXAA

LINEAR INTEGRATED CIRCUIT

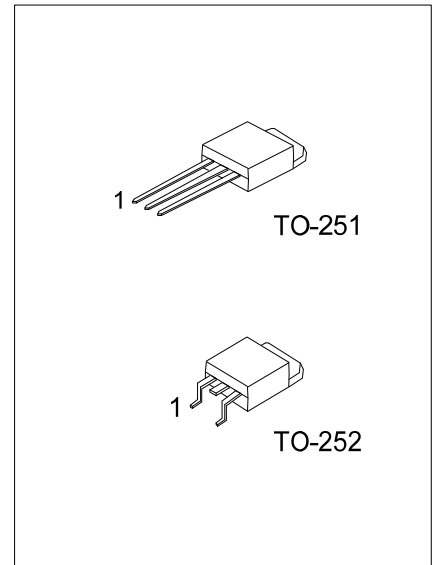
3 TERMINAL 1.5A NEGATIVE VOLTAGE REGULATOR

DESCRIPTION

The UTC **79DXXAA** 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, -15V output voltage available
- * Thermal overload protection



NORDERING INFORMATIO

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
79DXXAAL-TM3-T	79DXXAAG-TM3-T	TO-251	G	I	O	Tube
79DXXAAL-TN3-T	79DXXAAG-TN3-T	TO-252	G	I	O	Tube
79DXXAAL-TN3-R	79DXXAAG-TN3-R	TO-252	G	I	O	Tape Reel

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

79DXXAAG-TM3-T (1)Packing Type (2)Package Type (3)Green Package (4)Output Voltage Code	(1) T: Tube, R: Tape Reel (2) TM3: TO-251, TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free (4) xx: refer to Marking Information
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MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-251 TO-252	05:-5V 12:-12V 15:-15V	UTC 79DXXAA Voltage Code ← Lot Code ← Date Code → 1 2 3 L: Lead Free G: Halogen Free

BLOCK DIAGRAM

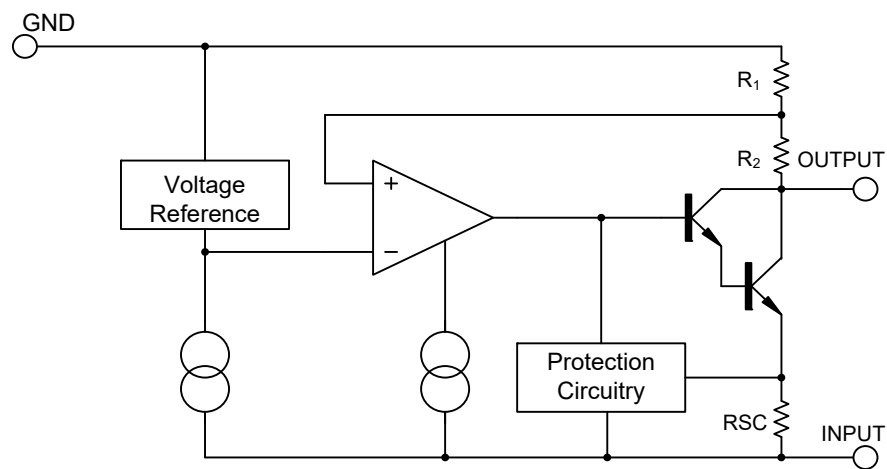


Fig.1

■ 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	θ_{JA}	112	$^{\circ}\text{C/W}$
Junction to Case	θ_{JC}	12.5	$^{\circ}\text{C/W}$

■ ELECTRICAL CHARACTERISTICS

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

For UTC 79D05AA ($V_{IN}=-10\text{V}$)

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
		$V_{IN}=-7\text{V}\sim -20\text{V}$ $I_{OUT}=5\text{mA}\sim 1.5\text{A}$, $P_D\leq 15\text{W}$	-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	ΔV_{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	ΔV_{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	ΔI_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		μV
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 79D12AA ($V_{IN}=-18\text{V}$)

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
		$V_{IN}=-14.5\text{V}\sim -27\text{V}$, $I_{OUT}=5\text{mA}\sim 1.5\text{A}$, $P_D\leq 15\text{W}$	-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	ΔV_{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	ΔV_{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	ΔI_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		μV
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 79D15A ($V_{IN}=-23V$)

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	ΔV_{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	ΔV_{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	ΔI_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	e_N	$f=10Hz\sim100kHz$, $T_A=25^{\circ}C$		250		μV
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 (C_I and C_O please use electrolytic capacitor)

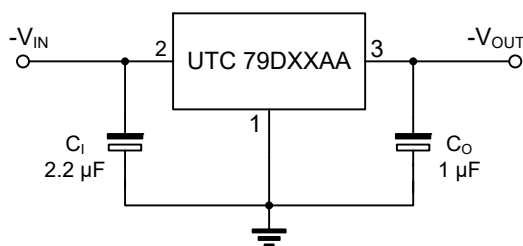


Fig.1 Fixed output regulator

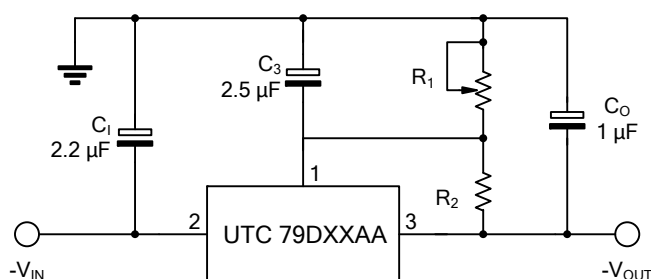


Fig.2 Circuit for increasing output voltage

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