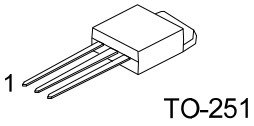
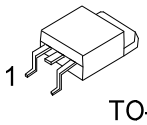
79DXXAA

LINEAR INTEGRATED CIRCUIT

3 TERMINAL 1.5A NEGATIVE VOLTAGE REGULATOR



TO-251



TO-252

■ 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

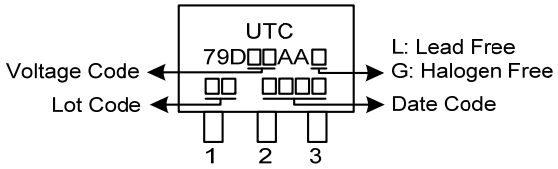
Note: Pin Assignment: G: GND I: Input O: Output

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

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-251 TO-252	05:-5V 12:-12V 15:-15V	

■ BLOCK DIAGRAM

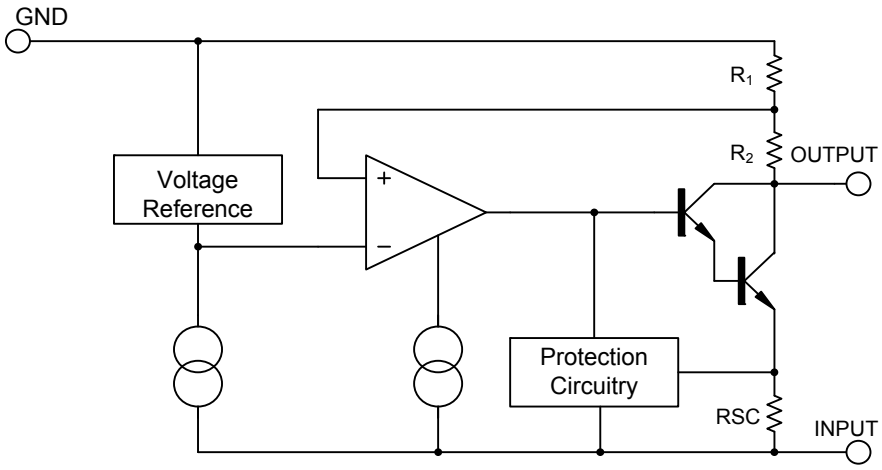


Fig.1

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

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	°C
Storage Temperature	T_{STG}	-65 ~ +150	°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	°C/W
Junction to Case	θ_{JC}	12.5	°C/W

■ ELECTRICAL CHARACTERISTICS

(I_{OUT}=0.5A, T_J=0°C~125°C, C_I=2.2uF, C_O=1uF, unless otherwise specified)

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

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}		T_J=25°C	-4.80	-5.0	-5.20	V
		V_{IN}=-7V~-20V I_{OUT}=5mA~1.5A, $P_D \leqq$ 15W		-4.75		-5.25	V
Dropout Voltage	V_D	I_{OUT}=1.5A	T_J=25°C		2		V
Line Regulation	ΔV_{OUT}	V_{IN}=-7V~-25V	T_J=25°C		10	100	mV
		V_{IN}=-8V~-12V	T_J=25°C		4	50	mV
Load Regulation	ΔV_{OUT}	I_{OUT}=5mA~1.5A	T_J=25°C		10	100	mV
		I_{OUT}=250mA~750mA	T_J=25°C		3	50	mV
Quiescent Current	I_Q		T_J=25°C		3	6	mA
Quiescent Current Change	ΔI_Q	I_{OUT}=5mA~1A			0.05	0.5	mA
		V_{IN}=-7V~-25V			0.1	1.3	mA
Output Noise Voltage	eN	f=10Hz~100kHz	T_A=25°C		100		μV
Output Voltage Drift	$\Delta V_{OUT}/\Delta T$	I_{OUT}=5mA			-0.4		mV/°C
Ripple Rejection	RR	V_{IN}=-8V~-18V, f=120Hz		54	60		dB
Peak Current	I_{PEAK}		T_J=25°C		2.2		A

For UTC 79D12AA (V_{IN}=-18V)

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

■ ELECTRICAL CHARACTERISTICS

For UTC 79D15A (V_{IN}=-23V)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}		T_J=25°C	-14.40	-15.0	-15.60	V
		V_{IN}=-17.5V~-30V, I_{OUT}=5mA~1.5A		-14.25		-15.75	V
Dropout Voltage	V_D	I_{OUT}=1.5A	T_J=25°C		2		V
Line Regulation	ΔV_{OUT}	V_{IN}=-17.5V~-30V	T_J=25°C		12	300	mV
		V_{IN}=-20V~-26V	T_J=25°C		6	150	mV
Load Regulation	ΔV_{OUT}	I_{OUT}=5mA~1.5A	T_J=25°C		12	300	mV
		I_{OUT}=250mA~750mA	T_J=25°C		4	150	mV
Quiescent Current	I_Q		T_J=25°C		3	6	mA
Quiescent Current Change	ΔI_Q	I_{OUT}=5mA~1A			0.05	0.5	mA
		V_{IN}=-17.5V~-30.5V			0.1	1.0	mA
Output Noise Voltage	eN	f=10Hz~100kHz	T_A=25°C		250		μV
Output Voltage Drift	$\Delta V_{OUT}/\Delta T$	I_{OUT}=5mA			-0.9		mV/°C
Ripple Rejection	RR	V_{IN}=-18.5V~-28.5V, f=120Hz		54	60		dB
Peak Current	I_{PEAK}		T_J=25°C		2.2		A

■ APPLICATION CIRCUITS

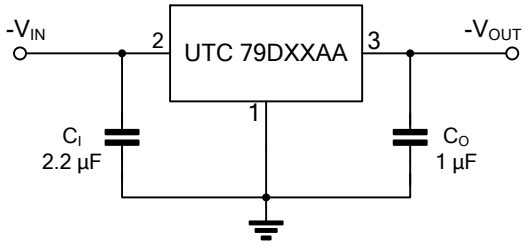


Fig.1 Fixed output regulator

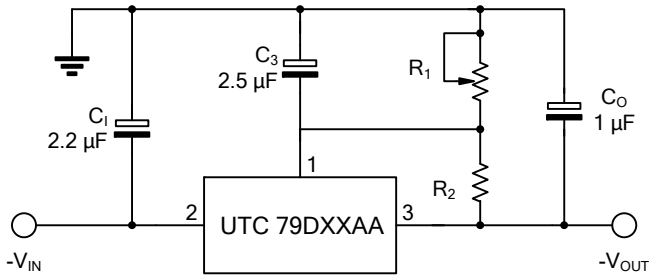


Fig.2 Circuit for increasing output voltage