

M5279LXX

FIXED NEGATIVE OUTPUT 3-TERMINAL REGULATOR (WITH PROTECTION CIRCUIT)

DESCRIPTION

M529LXX is a monolithic integrated circuit designed as the 79L series for negative power source 3-pin regulators with the maximum load current of 150mA level.

This IC contains a power supply protection circuit in case of the short circuit, over heat protection circuit, and safe operation area protection circuit in the 3-terminal package.

This IC is best suitable for the wide range of general power source because of its various applicable voltage levels.

FEATURES

- Has the compatibility with other maker's 79L series.
- Small current flows in case of a short circuit because of the adoption of the circuit $I_{OS} = 30mA$
- Various voltage ranks (-5V, -6V, -9V, -12V, -15V)
- Large internal permissible loss 900mW (Max.)

APPLICATION

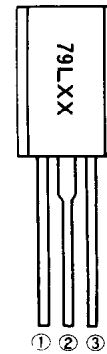
Power source for general electronic devices such as VTRs and CDs

FUNCTION CODE

M5279LXX
 └── Output voltage value

Type	Marking	Output voltage
M5279L05	79L05	5V
M5279L06	79L06	6V
M5279L09	79L09	9V
M5279L12	79L12	12V
M5279L15	79L15	15V

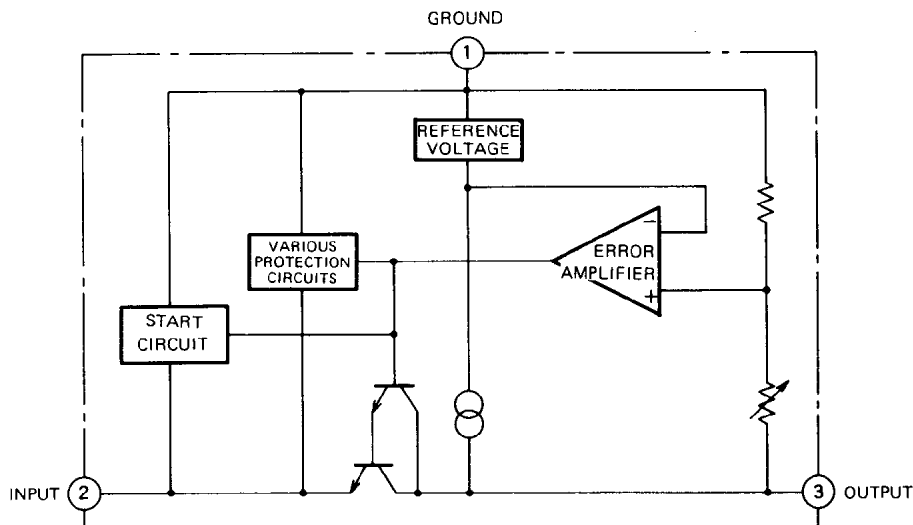
PIN CONFIGURATION



- ELECTRODE CONNECTIONS
- ① GROUND
 - ② INPUT
 - ③ OUTPUT

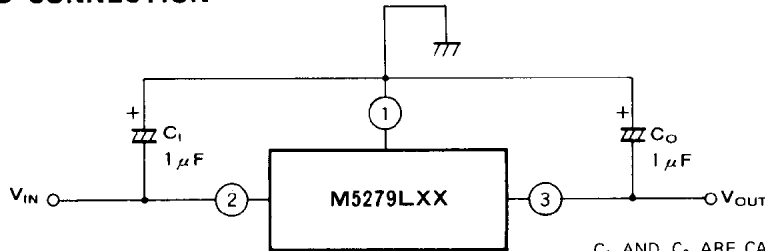
Outline EIAJ:TO-92L

BLOCK DIAGRAM



M5279LXX**FIXED NEGATIVE OUTPUT 3-TERMINAL REGULATOR(WITH PROTECTION CIRCUIT)****ABSOLUTE MAXIMUM RATINGS** (Ta = 25°C, unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V _{IN}	Input voltage	- 36	V
I _L	Load current	150	mA
P _d	Power dissipation	900	mW
T _{opr}	Operating temperature	-20 ~ +75	°C
T _{stg}	Storage temperature	-55 ~ +150	°C

STANDARD CONNECTION

C₁ AND C₀ ARE CAPACITORS TO PREVENT OSCILLATIONS. MAKE CONNECTIONS AS CLOSE TO THE IC AS POSSIBLE.

ELECTRICAL CHARACTERISTICS**M5279L05** (V_I = -10V, I_L = 40mA, Ta = 25°C, C₁ = 0.33μF, C₀ = 0.1μF unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _O	Output voltage		-5.20	-5.0	-4.80	V
Reg-in	Input regulation	-20V ≤ V _I ≤ -7V			200	mV
		-20V ≤ V _I ≤ -8V			150	
Reg-L	Load regulation	1mA ≤ I _L ≤ 150mA			60	mV
		1mA ≤ I _L ≤ 40mA			30	
V _O	Output voltage	-20V ≤ V _I ≤ -7V, 1mA ≤ I _L ≤ 40mA	-5.25		-4.75	V
		V _I = -10V, 1mA ≤ I _L ≤ 70mA	-5.25		-4.75	
I _B	Bias current	I _L = 0		2.6	5.0	mA
ΔI _B	Bias current variability	-20V ≤ V _I ≤ -8V, I _L = 40mA		0.1	1.5	mA
		V _I = -10V, 1mA ≤ I _L ≤ 40mA			0.2	
V _{NO}	Output noise voltage	BW : 10Hz ~ 100kHz		40		μVrms
RR	Ripple rejection ratio	f = 120Hz, V _I = 0dBm	41	49		dB
V _{DIF}	Minimum input/output voltage difference			1.0		V
I _{LP}	Peak load current		150			mA
I _{OS}	Output short holding current			30		mA

M5279L06 (V_I = -11V, I_L = 40mA, Ta = 25°C, C₁ = 0.33μF, C₀ = 0.1μF unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _O	Output voltage		-6.24	-6.0	-5.76	V
Reg-in	Input regulation	-21V ≤ V _I ≤ -8V			200	mV
		-21V ≤ V _I ≤ -9V			150	
Reg-L	Load regulation	1mA ≤ I _L ≤ 150mA			60	mV
		1mA ≤ I _L ≤ 40mA			30	
V _O	Output voltage	-21V ≤ V _I ≤ -8V, 1mA ≤ I _L ≤ 40mA	-6.3		-5.7	V
		V _I = -11V, 1mA ≤ I _L ≤ 70mA	-6.3		-5.7	
I _B	Bias current	I _L = 0		2.6	5.0	mA
ΔI _B	Bias current variability	-21V ≤ V _I ≤ -9V, I _L = 40mA		0.1	1.5	mA
		V _I = -11V, 1mA ≤ I _L ≤ 40mA			0.2	
V _{NO}	Output noise voltage	BW : 10Hz ~ 100kHz		40		μVrms
RR	Ripple rejection ratio	f = 120Hz, V _I = 0dBm	39	47		dB
V _{DIF}	Minimum input/output voltage difference			1.0		V
I _{LP}	Peak load current		150			mA
I _{OS}	Output short holding current			30		mA

FIXED NEGATIVE OUTPUT 3-TERMINAL REGULATOR(WITH PROTECTION CIRCUIT)

M5279L09 ($V_i = -15V$, $I_L = 40mA$, $T_a = 25^\circ C$, $C_i = 0.33\mu F$, $C_o = 0.1\mu F$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_o	Output voltage		-9.36	-9.0	-8.64	V
Reg-in	Input regulation	$-24V \leq V_i \leq -11.5V$			225	mV
		$-24V \leq V_i \leq -12V$			170	
Reg-L	Load regulation	$1mA \leq I_L \leq 150mA$			90	mV
		$1mA \leq I_L \leq 40mA$			40	
V_o	Output voltage	$-24V \leq V_i \leq -11.5V$, $1mA \leq I_L \leq 40mA$	-9.45		-8.55	V
		$V_i = -15V$, $1mA \leq I_L \leq 70mA$	-9.45		-8.55	
I_B	Bias current	$I_L = 0$		2.6	5.0	mA
ΔI_B	Bias current variability	$-24V \leq V_i \leq -12V$, $I_L = 40mA$		0.1	1.5	mA
		$V_i = -15V$, $1mA \leq I_L \leq 40mA$			0.2	
V_{NO}	Output noise voltage	BW : 10Hz ~ 100kHz		65		μV_{rms}
RR	Ripple rejection ratio	$f = 120Hz$, $V_i = 0dBm$	37	45		dB
V_{DIF}	Minimum input/output voltage difference			1.0		V
I_{LP}	Peak load current		150			mA
I_{OS}	Output short holding current			30		mA

M5279L12 ($V_i = -19V$, $I_L = 40mA$, $T_a = 25^\circ C$, $C_i = 0.33\mu F$, $C_o = 0.1\mu F$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_o	Output voltage		-12.48	-12.0	-11.52	V
Reg-in	Input regulation	$-27V \leq V_i \leq -14.5V$			250	mV
		$-27V \leq V_i \leq -16V$			200	
Reg-L	Load regulation	$1mA \leq I_L \leq 150mA$			100	mV
		$1mA \leq I_L \leq 40mA$			50	
V_o	Output voltage	$-27V \leq V_i \leq -14.5V$, $1mA \leq I_L \leq 40mA$	-12.6		-11.4	V
		$V_i = -19V$, $1mA \leq I_L \leq 70mA$	-12.6		-11.4	
I_B	Bias current	$I_L = 0$		2.6	5.0	mA
ΔI_B	Bias current variability	$-27V \leq V_i \leq -16V$, $I_L = 40mA$		0.1	1.5	mA
		$V_i = -19V$, $1mA \leq I_L \leq 40mA$			0.2	
V_{NO}	Output noise voltage	BW : 10Hz ~ 100kHz		80		μV_{rms}
RR	Ripple rejection ratio	$f = 120Hz$, $V_i = 0dBm$	37	42		dB
V_{DIF}	Minimum input/output voltage difference			1.0		V
I_{LP}	Peak load current		150			mA
I_{OS}	Output short holding current			30		mA

M5279L15 ($V_i = -23V$, $I_L = 40mA$, $T_a = 25^\circ C$, $C_i = 0.33\mu F$, $C_o = 0.1\mu F$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_o	Output voltage		-15.6	-15.0	-14.4	V
Reg-in	Input regulation	$-30V \leq V_i \leq -17.5V$			300	mV
		$-30V \leq V_i \leq -20V$			250	
Reg-L	Load regulation	$1mA \leq I_L \leq 150mA$			150	mV
		$1mA \leq I_L \leq 40mA$			75	
V_o	Output voltage	$-30V \leq V_i \leq -17.5V$, $1mA \leq I_L \leq 40mA$	-15.75		-14.25	V
		$V_i = -23V$, $1mA \leq I_L \leq 70mA$	-15.75		-14.25	
I_B	Bias current	$I_L = 0$		2.6	5.0	mA
ΔI_B	Bias current variability	$-30V \leq V_i \leq -20V$, $I_L = 40mA$		0.1	1.5	mA
		$V_i = -23V$, $1mA \leq I_L \leq 40mA$			0.2	
V_{NO}	Output noise voltage	BW : 10Hz ~ 100kHz		90		μV_{rms}
RR	Ripple rejection ratio	$f = 120Hz$, $V_i = 0dBm$	34	39		dB
V_{DIF}	Minimum input/output voltage difference			1.0		V
I_{LP}	Peak load current		150			mA
I_{OS}	Output short holding current			30		mA

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TYPICAL CHARACTERISTICS

