

The Linear IC's Three-Terminal Low Current Negative Voltage Regulators

DESCRIPTION

The 79L00A Series of three terminal negative voltage regulators is available with several fixed output voltages making them useful in a wide range of applications. These regulators are inexpensive, vise-to-use devices suitable for a multitude of applications that require a regulated supply of up to 100 mA. These regulators feature internal current limiting and thermal shutdown making them remarkably rugged. No external components are required with the 79L00A devices in many applications.

These devices offer a substantial performance advantage over the traditional zener diode-resistor combination, as output impedance and quiescent current are substantially reduced.

The voltages available allow the 79L00A to be used in logic systems, instrumentation, HiFi, and other solid state electronic equipment.

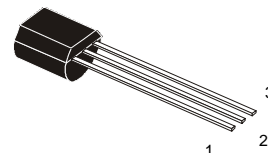
The 79L00A is available in 3-Pin plastic package SOT54 (Z), 3-Pin mini power plastic package SOT89 (F) and the 8-Pin plastic package SO8 (D) offers superior quality and performance at low cost.

FEATURES

- High Output Current
 $I_o = 100 \text{ mA}$
- Fixed Output Voltage
 $V_o = -5 \text{ V}, -6 \text{ V}, -8 \text{ V}, -12 \text{ V}, -15 \text{ V}$
- Complementary Positive Regulators 78L00A Series
- Available in either $\pm 5\%$ (AC) Selection

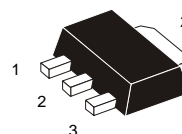
DEVICE TYPE / NOMINAL VOLTAGE

5% Output Voltage Accuracy	Voltage	Package		
		Z Suffix	F Suffix	D Suffix
79L05AC	-5	79L05ACZ	79L05ACF	79L05ACD
79L06AC	-6	79L06ACZ	79L06ACF	79L06ACD
79L08AC	-8	79L08ACZ	79L08ACF	79L08ACD
79L09AC	-9	79L09ACZ	79L09ACF	79L09ACD
79L12AC	-12	79L12ACZ	79L12ACF	79L12ACD
79L15AC	-15	79L15ACZ	79L15ACF	79L15ACD



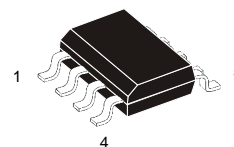
- 1 – Common
- 2 – Input
- 3 – Output

	SOT54
JEDEC	TO-92
EIAJ	SC-43
GOST	KT-26
Weight:	0.3g



- 1 – Common
- 2 – Input
- 3 – Output

	SOT89
JEDEC	TO-243
EIAJ	SC-62
GOST	KT-47
Weight:	0.055g



	SOT96-1
JEDEC	MS-012
EIAJ	–
GOST	4303.8-1
Weight:	0.08 ã

- 1 – Output, 2 – Input,
- 3 – Input, 4 – No Connect,
- 5 – Common, 6 – Input,
- 7 – Input, 8 – No Connect

79L00AC Series

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$)

Rating	Symbol	Value	Unit
Input Voltage $V_o = -5\text{ V to }-9\text{ V}$ $V_o = -12\text{ V to }-15\text{ V}$	V_i	-30 -35	V
Output Current	I_o	100	mA
Maximum Power Dissipation Case KT-26 (TO-92) Z Suffix Case KT-47 (SOT-89) F Suffix Case 4303.8-1 (SO-8) D Suffix	P_D	500 350 500	mW
Junction Temperature	T_{JMAX}	150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_{OPR}	-30 to +85	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-40 to +150	$^{\circ}\text{C}$

ORDERING INFORMATION

Device	Marking	Package	Quantity	Packing Style
79LXXACZ*	79LXXACZ*	SOT-54	1 Kpcs / plastic bags / carton box	In bulk
79LXXACF*	9LXX*	SOT-89	5 Kpcs / plastic bags / carton box	In bulk
79LXXACF-T1*	9LXX*	SOT-89	1 Kpcs / Reel	Embossed tape 12-mm wide 7" dia. Pin 2 (Common) towards the windung. Perforation on the right.
79LXXACD*	79LXXACD*	SO-8	5 Kpcs / plastic bags / carton box	In bulk
79LXXACD-R1*	79LXXACD*	SO-8	500 pcs / Reel	Embossed tape 12-mm wide 7" dia. Pin 1 (Output) face to perforation side of the tape.
79LXXACD-R2*	79LXXACD*	SO-8	2.5 Kpcs / Reel	Embossed tape 12-mm wide 13" dia. Pin 1 (Output) face to perforation side of the tape.

Note 1:

XX indicates nominal voltage

*Available in -5, -6, -8, -9, -12 and -15 V devices.

79L05AC ELECTRICAL CHARACTERISTICS

($V_i = -10\text{ V}$, $I_o = 40\text{ mA}$, $C_i = 0.33\text{ }\mu\text{F}$, $C_o = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_o	-4.8	-5.0	-5.2	V
Output Voltage, $-7.0\text{V} < V_i < -20.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	V_o	-4.75	—	-5.25	V
Line Regulation, $-7.0\text{V} < V_i < -20.0\text{V}$	Reg_{line}	—	—	150	mV
Load Regulation, $1\text{mA} < I_o < 100\text{mA}$ $1\text{mA} < I_o < 40\text{mA}$	Reg_{load}	— —	— —	60 30	mV
Input Bias Current	I_{IB}	—	—	6	mA
Input Bias Current, $-8.0\text{V} < V_i < -20.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-8.0\text{V} < V_i < -18.0\text{V}$, $I_o = 40\text{mA}$, $f = 120\text{Hz}$	RR	41	—	—	dB
Dropout Voltage	$V_i - V_o$		1.7	—	V

79L06AC ELECTRICAL CHARACTERISTICS

($V_i = -12\text{ V}$, $I_o = 40\text{ mA}$, $C_i = 0.33\text{ }\mu\text{F}$, $C_o = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_o	-5.75	-6.0	-6.25	V
Output Voltage, $-8.5\text{V} < V_i < -20.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	V_o	-5.7	—	-6.3	V
Line Regulation, $-8.5\text{V} < V_i < -20.0\text{V}$	Reg_{line}	—	—	175	mV
Load Regulation, $1\text{mA} < I_o < 100\text{mA}$ $1\text{mA} < I_o < 40\text{mA}$	Reg_{load}	— —	— —	80 40	mV
Input Bias Current	I_{IB}	—	—	6	mA
Input Bias Current, $-9.0\text{V} < V_i < -20.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-10.0\text{V} < V_i < -20.0\text{V}$, $I_o = 40\text{mA}$, $f = 120\text{Hz}$	RR	40	—	—	dB
Dropout Voltage	$V_i - V_o$		1.7	—	V

79L00AC Series

79L08AC ELECTRICAL CHARACTERISTICS

($V_I = -14\text{ V}$, $I_O = 40\text{ mA}$, $C_I = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_O	-7.7	-8.0	-8.3	V
Output Voltage, $-10.5\text{ V} < V_I < -23.0\text{ V}$, $1\text{ mA} < I_O < 40\text{ mA}$	V_O	-7.6	—	-8.4	V
Line Regulation, $-10.5\text{ V} < V_I < -23.0\text{ V}$	Reg_{line}	—	—	175	mV
Load Regulation, $1\text{ mA} < I_O < 100\text{ mA}$ $1\text{ mA} < I_O < 40\text{ mA}$	Reg_{load}	— —	— —	80 40	mV
Input Bias Current	I_{IB}	—	—	6	mA
Input Bias Current, $-11.0\text{ V} < V_I < -23.0\text{ V}$, $1\text{ mA} < I_O < 40\text{ mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-13.0\text{ V} < V_I < -23.0\text{ V}$, $I_O = 40\text{ mA}$, $f = 120\text{ Hz}$	RR	37	—	—	dB
Dropout Voltage	$V_I - V_O$		1.7	—	V

79L09AC ELECTRICAL CHARACTERISTICS

($V_I = -16\text{ V}$, $I_O = 40\text{ mA}$, $C_I = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_O	-8.6	-9.0	-9.4	V
Output Voltage, $-12.0\text{ V} < V_I < -24.0\text{ V}$, $1\text{ mA} < I_O < 40\text{ mA}$	V_O	-8.55	—	-9.45	V
Line Regulation, $-12.0\text{ V} < V_I < -24.0\text{ V}$	Reg_{line}	—	—	175	mV
Load Regulation, $1\text{ mA} < I_O < 100\text{ mA}$ $1\text{ mA} < I_O < 40\text{ mA}$	Reg_{load}	— —	— —	90 40	mV
Input Bias Current	I_{IB}	—	—	6	mA
Input Bias Current, $-13.0\text{ V} < V_I < -24.0\text{ V}$, $1\text{ mA} < I_O < 40\text{ mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-15.0\text{ V} < V_I < -25.0\text{ V}$, $I_O = 40\text{ mA}$, $f = 120\text{ Hz}$	RR	37	—	—	dB
Dropout Voltage	$V_I - V_O$		1.7	—	V

79L12AC ELECTRICAL CHARACTERISTICS

($V_i = -19\text{ V}$, $I_o = 40\text{ mA}$, $C_i = 0.33\text{ }\mu\text{F}$, $C_o = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_o	-11.5	-12.0	-12.5	V
Output Voltage, $-14.0\text{V} < V_i < -27.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	V_o	-11.4	—	-12.6	V
Line Regulation, $-14.5\text{V} < V_i < -27.0\text{V}$	Reg_{line}	—	—	250	mV
Load Regulation, $1\text{mA} < I_o < 100\text{mA}$ $1\text{mA} < I_o < 40\text{mA}$	Reg_{load}	— —	— —	100 50	mV
Input Bias Current	I_{IB}	—	—	6.5	mA
Input Bias Current, $-16.0\text{V} < V_i < -27.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-15.0\text{V} < V_i < -25.0\text{V}$, $I_o=40\text{mA}$, $f=120\text{Hz}$	RR	37	—	—	dB
Dropout Voltage	$V_i - V_o$		1.7	—	V

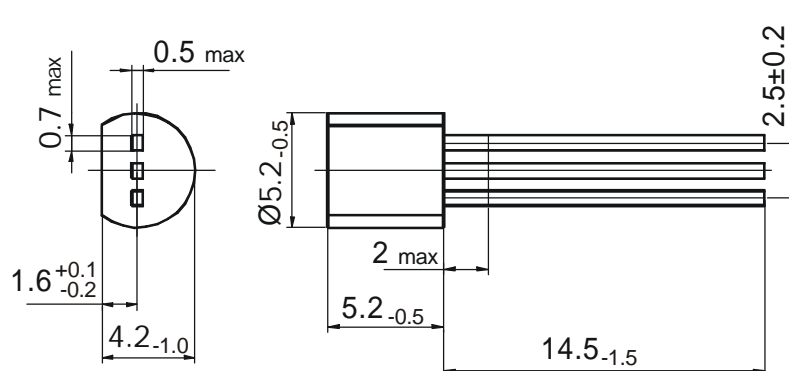
79L15AC ELECTRICAL CHARACTERISTICS

($V_i = -23\text{ V}$, $I_o = 40\text{ mA}$, $C_i = 0.33\text{ }\mu\text{F}$, $C_o = 0.1\text{ }\mu\text{F}$, $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Output Voltage	V_o	-14.4	-15.0	-15.6	V
Output Voltage, $-17.5\text{V} < V_i < -30.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	V_o	-14.25	—	-15.75	V
Line Regulation, $-17.5\text{V} < V_i < -30.0\text{V}$	Reg_{line}	—	—	300	mV
Load Regulation, $1\text{mA} < I_o < 100\text{mA}$ $1\text{mA} < I_o < 40\text{mA}$	Reg_{load}	— —	— —	150 75	mV
Input Bias Current	I_{IB}	—	—	6.5	mA
Input Bias Current, $-19.0\text{V} < V_i < -30.0\text{V}$, $1\text{mA} < I_o < 40\text{mA}$	ΔI_{IB}	—	—	1.5	mA
Ripple Rejection, $-18.5\text{V} < V_i < -28.5\text{V}$, $I_o=40\text{mA}$, $f=120\text{Hz}$	RR	34	—	—	dB
Dropout Voltage	$V_i - V_o$		1.7	—	V

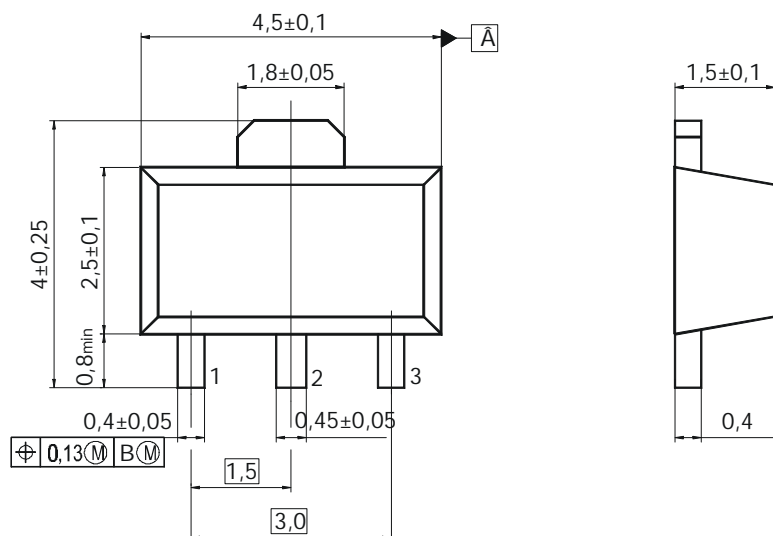
79L00AC Series

PACKAGE DIMENSIONS of 79L00ACZ in mm



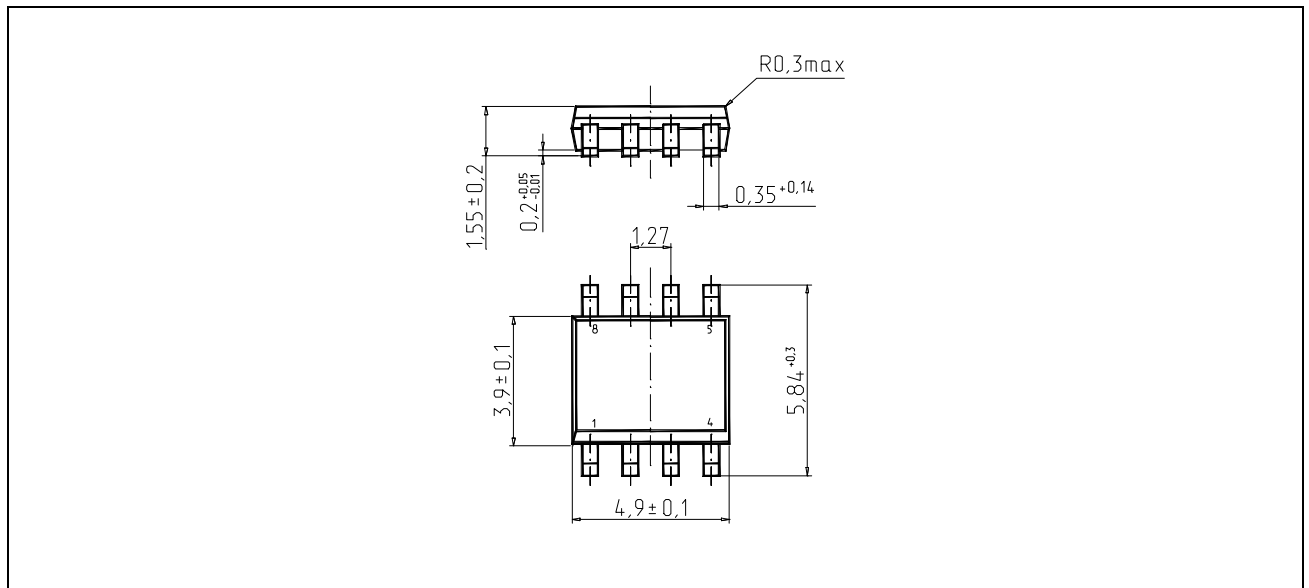
PLASTIC CASE KT-26

PACKAGE DIMENSIONS of 79L00ACF in mm



PLASTIC CASE KT-47

PACKAGE DIMENSIONS of 79L00ACD in mm



PLASTIC CASE 4303.8-1