

The ML79L00 series are 3-Terminal Negative Voltage Regulators. These regulators employ internal current-limiting and thermal-shutdown, making them essentially indestructible. If adequate heat sinking is provided, they can deliver up to 100mA output current. They are intended as fixed voltage regulators in a wide range of applications including local or on-card regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power pass elements to make high-current voltage regulators. The ML78L00 series used as a Zener diode/resistor combination replacement, offers an effective output impedance improvement of typically two orders of magnitude, along with lower quiescent current and lower noise.

■ Absolute Maximum Ratings.

Input Voltage	V_{IN} (79L03A~79L09A)	-30V
	(79L12A~79L15A)	-35V
	(79L18A~79L24A)	-40V
Operating Temperature Range	T_{opr}	-30~+75°C
Storage Temperature Range	T_{stg}	-40~+125°C
Power Dissipation	P_D	500mW

■ Package Outline

(TO-92)



79L00A

1. COMMON
2. IN
3. OUT

■ Electrical Characteristics ($C_{IN}=0.33\mu F$, $C_O=1.0\mu F$, $T_J=25^\circ C$)

Measurement is to be conducted in pulse testing.

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
79L03A						
Output Voltage	V_O	$V_{IN}=-10V, I_O=40mA$	-2.88	-3.0	-3.12	V
Line Regulation	$\Delta V_O / V_{IN}$	$V_{IN}=-7 \sim -20V, I_O=40mA$	—	10	60	mV
Load Regulation	$\Delta V_O / I_O$	$V_{IN}=-10V, I_O=1 \sim 100mA$	—	4	72	mV
Quiescent Current	I_Q	$V_{IN}=-10V, I_O=0mA$	—	3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-8 \sim -18V, I_O=40mA, e_{in}=1V_{P.P.}$ $f=120Hz$	45	72	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=-10V, BW=10Hz \sim 100kHz, I_O=40mA$	—	70	—	μV
79L05A						
Output Voltage	V_O	$V_{IN}=-10V, I_O=40mA$	-4.8	-5.0	-5.2	V
Line Regulation	$\Delta V_O / V_{IN}$	$V_{IN}=-7 \sim -20V, I_O=40mA$	—	15	150	mV
Load Regulation	$\Delta V_O / I_O$	$V_{IN}=-10V, I_O=1 \sim 100mA$	—	7	60	mV
Quiescent Current	I_Q	$V_{IN}=-10V, I_O=0mA$	—	3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-8 \sim -18V, I_O=40mA, e_{in}=1V_{P.P.}$ $f=120Hz$	41	71	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=-10V, BW=10Hz \sim 100kHz, I_O=40mA$	—	120	—	μV



MICRO ELECTRONICS LTD. 美科有限公司

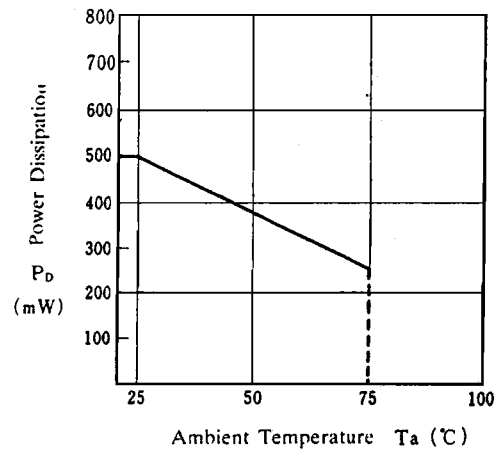
38, Hung To Road, Microtron Building, Kwun Tong, Kowloon, Hong Kong.
Kwun Tong P.O. Box 69477 Hong Kong. Fax No. 2341 0321 Telex: 43510 Micro Hx. Tel: 2343 0181-5

■ Electrical Characteristics (C_{IN}=0.33μF, C_O=1.0μF, T_J=25°C)

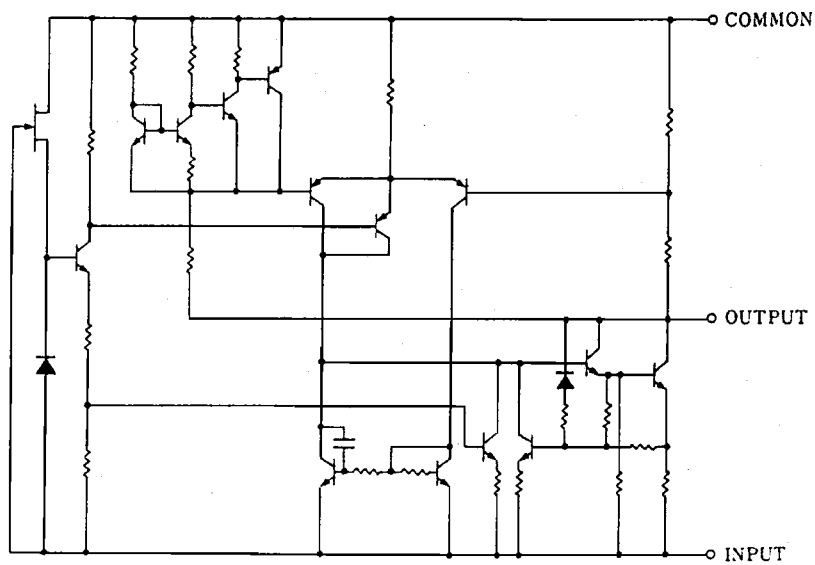
Measurement is to be conducted in pulse testing.

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
79L06A						
Output Voltage	V _O	V _{IN} =-12V, I _O =40mA	-5.76	-6.0	-6.24	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-8.5~-20V, I _O =40mA	—	18	150	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-12V, I _O =1~100mA	—	8	70	mV
Quiescent Current	I _Q	V _{IN} =-12V, I _O =0mA	—	3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-9~-19V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	40	68	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-12V, BW=10Hz~100kHz, I _O =40mA	—	140	—	μV
79L08A						
Output Voltage	V _O	V _{IN} =-14V, I _O =40mA	-7.68	-8.0	-8.32	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-10.5~-23V, I _O =40mA	—	24	175	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-14V, I _O =1~100mA	—	10	80	mV
Quiescent Current	I _Q	V _{IN} =-14V, I _O =0mA	—	3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-11~-21V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	39	68	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-14V, BW=10Hz~100kHz, I _O =40mA	—	190	—	μV
79L09A						
Output Voltage	V _O	V _{IN} =-15V, I _O =40mA	-8.64	-9.0	-9.36	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-11.5~-24V, I _O =40mA	—	27	200	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-15V, I _O =1~100mA	—	12	90	mV
Quiescent Current	I _Q	V _{IN} =-15V, I _O =0mA	—	3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-12~-22V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	38	67	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-15V, BW=10Hz~100kHz, I _O =40mA	—	210	—	μV
79L12A						
Output Voltage	V _O	V _{IN} =-19V, I _O =40mA	-11.5	-12.0	-12.5	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-14.5~-27V, I _O =40mA	—	36	250	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-19V, I _O =1~100mA	—	16	100	mV
Quiescent Current	I _Q	V _{IN} =-19V, I _O =0mA	—	3.5	6.5	mA
Ripple Rejection	RR	V _{IN} =-15~-25V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	37	64	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-19V, BW=10Hz~100kHz, I _O =40mA	—	210	—	μV
79L15A						
Output Voltage	V _O	V _{IN} =-23V, I _O =40mA	-14.4	-15.0	-15.6	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-17.5~-30V, I _O =40mA	—	45	300	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-23V, I _O =1~100mA	—	20	150	mV
Quiescent Current	I _Q	V _{IN} =-23V, I _O =0mA	—	3.5	6.5	mA
Ripple Rejection	RR	V _{IN} =-18.5~-28.5V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	34	63	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-23V, BW=10Hz~100kHz, I _O =40mA	—	340	—	μV
79L18A						
Output Voltage	V _O	V _{IN} =-27V, I _O =40mA	-17.3	-18.0	-18.7	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-20.7~-33V, I _O =40mA	—	54	300	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-27V, I _O =1~100mA	—	23	170	mV
Quiescent Current	I _Q	V _{IN} =-27V, I _O =0mA	—	3.5	6.5	mA
Ripple Rejection	RR	V _{IN} =-23~-33V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	33	60	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-27V, BW=10Hz~100kHz, I _O =40mA	—	410	—	μV
79L24A						
Output Voltage	V _O	V _{IN} =-33V, I _O =40mA	-23.0	-24.0	-25.0	V
Line Regulation	ΔV _O -V _{IN}	V _{IN} =-27~-38V, I _O =40mA	—	72	350	mV
Load Regulation	ΔV _O -I _O	V _{IN} =-33V, I _O =1~100mA	—	30	200	mV
Quiescent Current	I _Q	V _{IN} =-33V, I _O =0mA	—	3.5	6.5	mA
Ripple Rejection	RR	V _{IN} =-29~-35V, I _O =40mA, e _{in} =1V _{P-P} f=120Hz	31	55	—	dB
Output Noise Voltage	V _{NO}	V _{IN} =-33V, BW=10Hz~100kHz, I _O =40mA	—	550	—	μV

■ Power Dissipation vs. Ambient Temperature



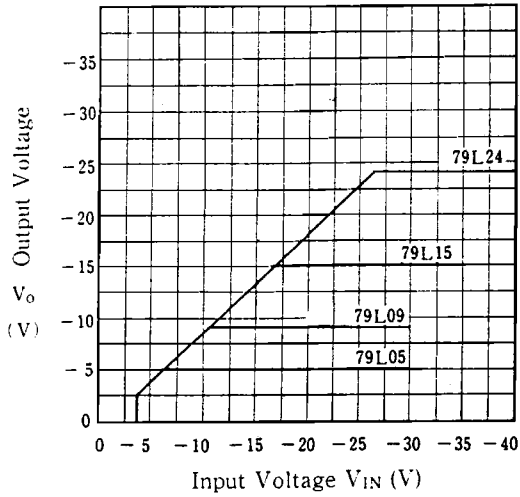
■ Equivalent Circuit



■ Typical Characteristics

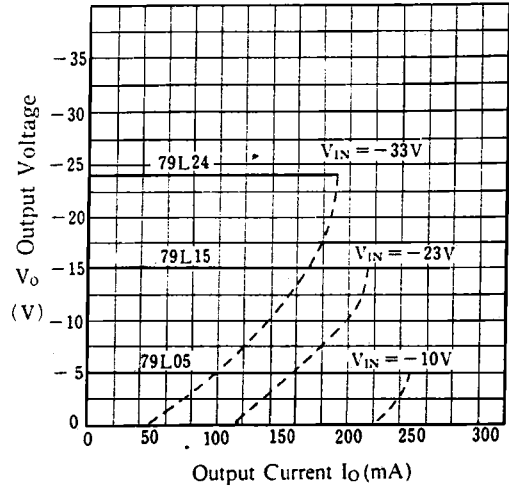
79L00 Input Voltage vs. Output Voltage

($I_o = 40\text{mA}$, $T_j = 25^\circ\text{C}$)



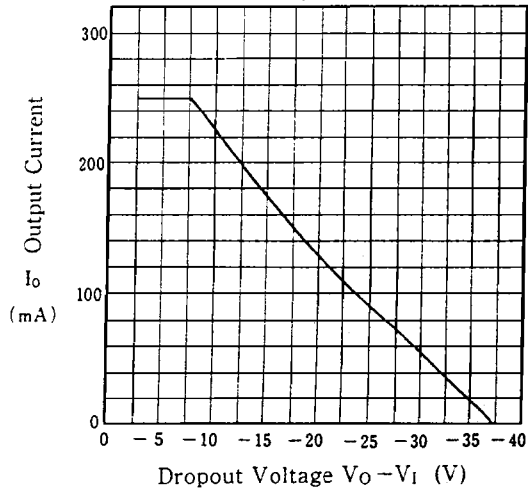
79L05/15/24 Load Characteristics

($T_j = 25^\circ\text{C}$)

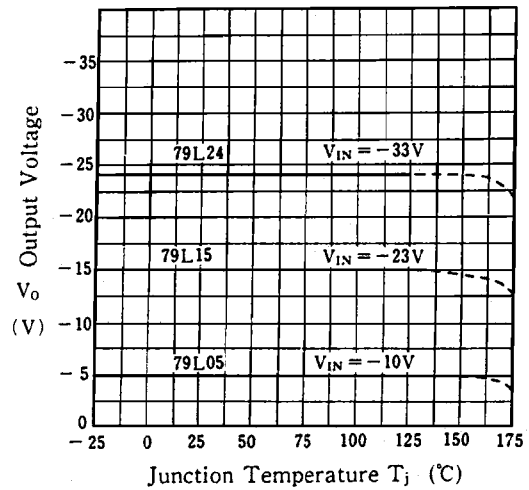


79L00 Series Short Circuit Current

($T_j = 25^\circ\text{C}$)

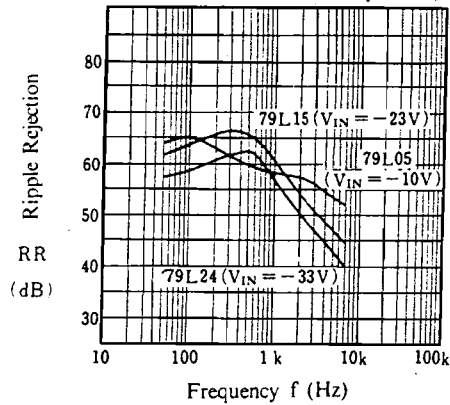


79L05/12/24 Output Voltage vs. Junction Temperature



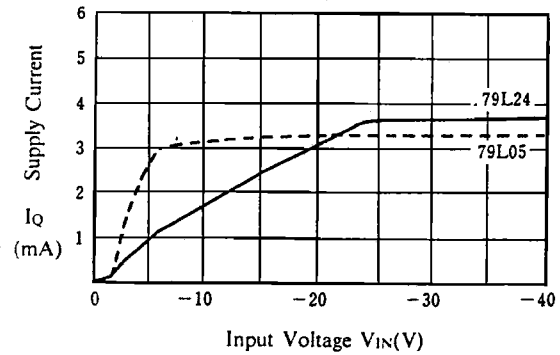
79L05/15/24 Ripple Rejection vs. Frequency

($I_o = 40\text{mA}$, $e_n = 2\text{V}_{P-P}$, $T_j = 25^\circ\text{C}$)



Supply Current vs. Input Voltage

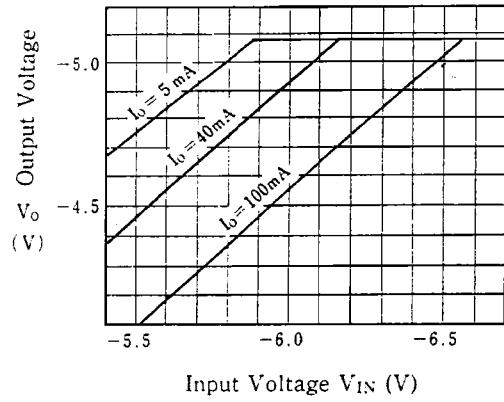
($I_o = 0\text{mA}$, $T_j = 25^\circ\text{C}$)



■ Typical Characteristics

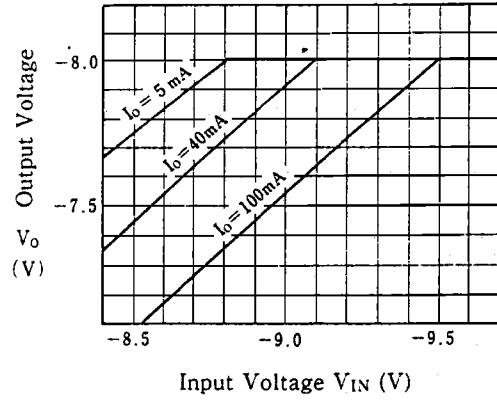
79L05 Dropout Characteristics

($T_j = 25^\circ\text{C}$)

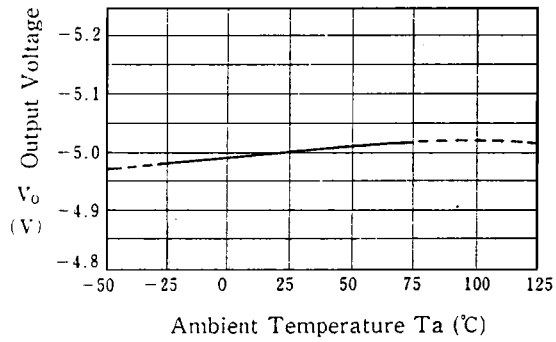


79L08 Dropout Characteristics

($T_j = 25^\circ\text{C}$)



79L05 Output Voltage vs. Temperature



79L08 Output Voltage vs. Temperature

