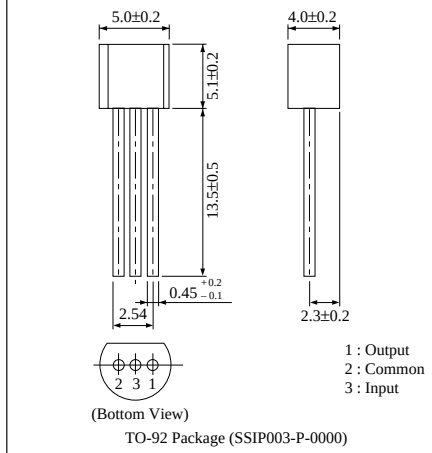
AN79L00/AN79L00M Series

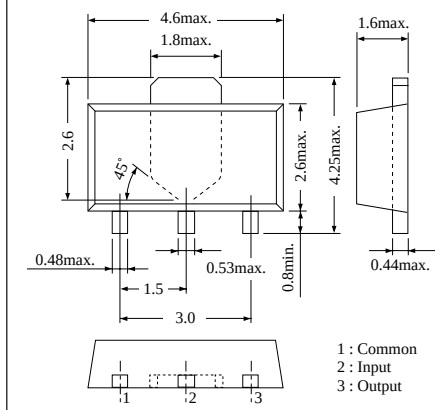
3-pin Negative Output Voltage Regulator (100mA Type)

AN79L00 Series Unit:mm



TO-92 Package (SSIP003-P-0000)

AN79L00M Series Unit:mm



3-pin Mini Power type Plastic Package (TO-243) (SSIP003-P-0000D)

■ Overview

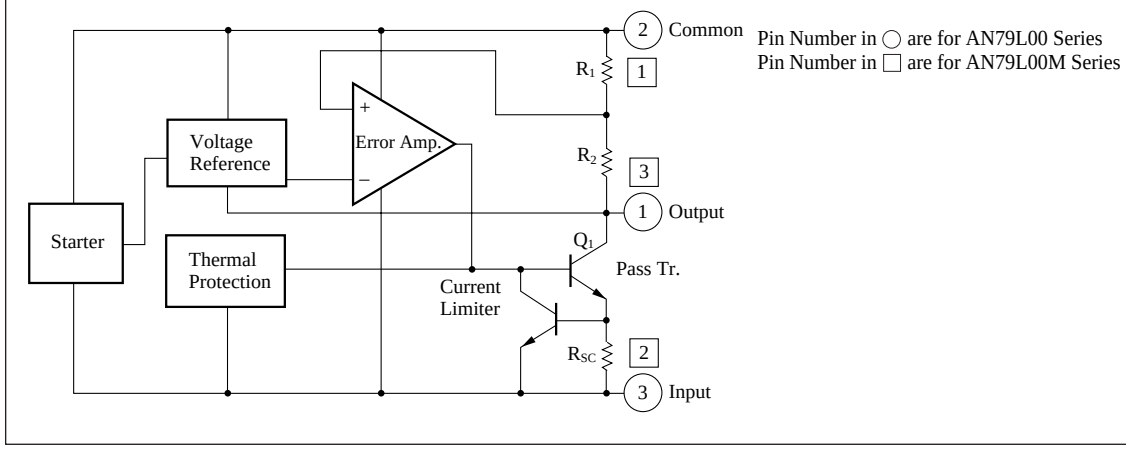
The AN79L00 series is 3-pin fixed negative output voltage regulator.

Stabilized fixed output voltage is obtained from unstable DC input voltage without using any external components. 12 types of output voltage are available; –4V, –5V, –6V, –7V, –8V, –9V, –10V, –12V, –15V, –18V, –20V and –24V. They can be used widely in power circuits with current capacitance up to 100mA.

■ Features

- No external components
- Output voltage : –4V, –5V, –6V, –7V, –8V, –9V, –10V, –12V, –15V, –18V, –20V, –24V
- Short-circuit current limiting built-in
- Thermal overload protection built-in

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25˚C)

Parameter		Symbol	Rating	Unit
Input voltage		V_I	–35 *1	V
			–40 *2	V
Power dissipation		P_D	650 *3	mW
Operating ambient temperature		T_{opr}	–20 to +80	˚C
Storage temperature	AN79L00 Series	T_{stg}	–55 to +150	˚C
	AN79L00M Series		–55 to +125	

*1 AN79L04/M, AN79L05/M, AN79L06/M, AN79L07/M, AN79L08/M, AN79L09/M, AN79L10/M, AN79L12/M, AN79L15/M, AN79L18/M
*2 AN79L20/M, AN79L24/M
*3 Follow the derating curve. When T_j exceeds 150˚C, the internal circuit cuts off the output.
Mounting onto the PCB (20 × 20 × 1.7 mm glass epoxy copper foil 1 cm^2 or more), for AN79L00M Series.

■ Electrical Characteristics (Ta=25˚C)

• AN79L04/AN79L04M (–4V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–3.84	–4	–4.16	V
Output voltage tolerance	V_O	V_I=–7 to –19V, I_O=1 to 70mA	–3.8	—	–4.2	V
Line regulation	REG_{IN}	V_I=–6 to –20V, T_j=25˚C	—	—	80	mV
		V_I=–7 to –17V, T_j=25˚C	—	—	40	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	10	60	mV
		I_O=1 to 40mA, T_j=25˚C	—	4.5	30	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–7 to –19V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	38	—	μV
Ripple rejection ratio	RR	V_I=–7 to –17V, f=120Hz, Ta=25˚C	55	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	ΔV_O/Ta	I_O=5mA	—	– 0.4	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

• AN79L05/AN79L05M (–5V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–4.8	–5	–5.2	V
Output voltage tolerance	V_O	V_I=–8 to –20V, I_O=1 to 70mA	–4.75	—	–5.25	V
Line regulation	REG_{IN}	V_I=–7 to –21V, T_j=25˚C	—	—	100	mV
		V_I=–8 to –18V, T_j=25˚C	—	—	50	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	11	60	mV
		I_O=1 to 40mA, T_j=25˚C	—	5	30	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–8 to –20V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	40	—	μV
Ripple rejection ratio	RR	V_I=–8 to –18V, f=120Hz, Ta=25˚C	55	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	– 0.4	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

• AN79L06/AN79L06M (–6V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–5.76	–6	–6.24	V
Output voltage tolerance	V_O	V_I=–79to –21V, I_O=1 to 70mA	–5.7	—	–6.3	V
Line regulation	REG_{IN}	V_I=–8 to –22V, T_j=25˚C	—	—	120	mV
		V_I=–9 to –19V, T_j=25˚C	—	—	60	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	12	60	mV
		I_O=1 to 40mA, T_j=25˚C	—	5.5	30	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–9 to –21V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	44	—	μV
Ripple rejection ratio	RR	V_I=–9 to –19V, f=120Hz, Ta=25˚C	55	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temoerature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	–0.4	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

• AN79L07/AN79L07M (–7V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–6.72	–7	–7.28	V
Output voltage tolerance	V_O	V_I=–10 to –22V, I_O=1 to 70mA	–6.65	—	–7.35	V
Line regulation	REG_{IN}	V_I=–9 to –23V, T_j=25˚C	—	—	140	mV
		V_I=–10 to –20V, T_j=25˚C	—	—	70	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	13	70	mV
		I_O=1 to 40mA, T_j=25˚C	—	6	40	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–10 to –22V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	48	—	μV
Ripple rejection ratio	RR	V_I=–10 to –20V, f=120Hz, Ta=25˚C	54	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	– 0.5	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

• AN79L08/AN79L08M (–8V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–7.68	–8	–8.32	V
Output voltage tolerance	V_O	V_I=–11 to –23V, I_O=1 to 70mA	–7.6	—	–8.4	V
Line regulation	REG_{IN}	V_I=–10 to –24V, T_j=25˚C	—	—	160	mV
		V_I=–11 to –21V, T_j=25˚C	—	—	80	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	15	80	mV
		I_O=1 to 40mA, T_j=25˚C	—	7	40	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–11 to –23V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	52	—	μV
Ripple rejection ratio	RR	V_I=–11 to –21V, f=120Hz, Ta=25˚C	54	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	– 0.6	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

• AN79L09/AN79L09M (–9V Type)

Prameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–8.64	–9	–9.36	V
Output voltage tolerance	V_O	V_I=–12 to –24V, I_O=1 to 70mA	–8.55	—	–9.45	V
Line regulation	REG_{IN}	V_I=–11 to –25V, T_j=25˚C	—	—	160	mV
		V_I=–12 to –22V, T_j=25˚C	—	—	80	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	16	90	mV
		I_O=1 to 40mA, T_j=25˚C	—	8	50	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–12 to –24V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	58	—	μV
Ripple rejection ratio	RR	V_I=–12 to –22V, f=120Hz, Ta=25˚C	53	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	ΔV_O/Ta	I_O=5mA	—	– 0.6	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF and C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

• AN79L10/AN79L10M (–10V Type)

Patameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–9.6	–10	–10.4	V
Output voltage tolerance	V_O	V_I=–13 to –25V, I_O=1 to 70mA	–9.5	—	–10.5	V
Line regulation	REG_{IN}	V_I=–12 to –26V, T_j=25˚C	—	—	160	mV
		V_I=–13 to –23V, T_j=25˚C	—	—	80	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	17	100	mV
		I_O=1 to 40mA, T_j=25˚C	—	9	50	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–13 to –25V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	65	—	μV
Ripple rejection	RR	V_I=–13 to –23V, f=120Hz, Ta=25˚C	53	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Ouptput short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	ΔV_O/Ta	I_O=5mA	—	– 0.7	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

• AN79L12/AN79L12M (–12V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–11.5	–12	–12.5	V
Output voltage tolerance	V_O	V_I=–15 to –27V, I_O=1 to 70mA	–11.4	—	–12.6	V
Line regulation	REG_{IN}	V_I=–14.5 to –30V, T_j=25˚C	—	—	200	mV
		V_I=–15 to –25V, T_j=25˚C	—	—	100	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	20	100	mV
		I_O=1 to 40mA, T_j=25˚C	—	10	50	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–15 to –27V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	75	—	μV
Ripple rejection ratio	RR	V_I=–15 to –25V, f=120Hz, Ta=25˚C	52	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature	$\Delta V_O/Ta$	I_O=5mA	—	– 0.8	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

• AN79L15T/AN79L15M (–15V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Ouyput voltage	V_O	T_j=25˚C	–14.4	–15	–15.6	V
Output voltage tolerance	V_O	V_I=–18 to –28V, I_O=1 to 70mA	–14.25	—	–15.75	V
Line regulation	REG_{IN}	V_I=–17.5 to –33V, T_j=25˚C	—	—	200	mV
		V_I=–18 to –28V, T_j=25˚C	—	—	100	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	25	130	mV
		I_O=1 to 40mA, T_j=25˚C	—	12	60	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–18 to –30V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	90	—	μV
Ripple rejection ratio	RR	V_I=–18 to –28V, f=120Hz, Ta=25˚C	51	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	– 0.9	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

• AN79L18T/AN79L18M (–18V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–17.3	–18	–18.7	V
Output voltage tolerance	V_O	V_I=–21 to –33V, I_O=1 to 70mA	–17.1	—	–18.9	V
Line regulation	REG_{IN}	V_I=–21 to –33V, T_j=25˚C	—	—	200	mV
		V_I=–21 to –32V, T_j=25˚C	—	—	100	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	30	160	mV
		I_O=1 to 40mA, T_j=25˚C	—	15	80	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–21 to –33V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	110	—	μV
Ripple rejection ratio	RR	V_I=–22 to –32V, f=120Hz, Ta=25˚C	50	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	–1	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

• AN79L20T/AN79L20M (–20V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–19.2	–20	–20.8	V
Output voltage tolerance	V_O	V_I=–23 to –35V, I_O=1 to 70mA	–19	—	–21	V
Line regulation	REG_{IN}	V_I=–23 to –35V, T_j=25˚C	—	—	200	mV
		V_I=–24 to –34V, T_j=25˚C	—	—	100	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	35	180	mV
		I_O=1 to 40mA, T_j=25˚C	—	17	90	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–23 to –35V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	135	—	μV
Ripple rejection ratio	RR	V_I=–24 to –34V, f=120Hz, Ta=25˚C	49	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	–1	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2μF, C_O=1μF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Electrical Characteristics (Ta=25˚C)

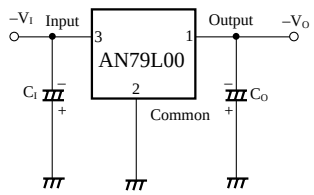
• AN79L24/AN79L24M (–24V Type)

Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	T_j=25˚C	–23	–24	–25	V
Output voltage tolerance	V_O	V_I=–27 to –38V, I_O=1 to 70mA	–22.8	—	–25.2	V
Line regulation	REG_{IN}	V_I=–27 to –38V, T_j=25˚C	—	—	200	mV
		V_I=–27 to –37V, T_j=25˚C	—	—	100	mV
Load regulation	REG_L	I_O=1 to 100mA, T_j=25˚C	—	40	200	mV
		I_O=1 to 40mA, T_j=25˚C	—	20	100	mV
Bias current	I_{Bias}	T_j=25˚C	—	3	5	mA
Input bias current fluctuation	$\Delta I_{bias\ (IN)}$	V_I=–27 to –38V, T_j=25˚C	—	—	0.5	mA
Load bias current fluctuation	$\Delta I_{bias\ (L)}$	I_O=1 to 40mA, T_j=25˚C	—	—	0.1	mA
Output noise voltage	V_{no}	f=10Hz to 100kHz, Ta=25˚C	—	170	—	µV
Ripple rejection ratio	RR	V_I=–28 to –38V, f=120Hz, Ta=25˚C	49	—	—	dB
Minimum input/output voltage difference	$V_{DIF\ (min.)}$	T_j=25˚C	—	0.8	—	V
Output short circuit current	$I_{O\ (Short)}$	V_I=–35V, T_j=25˚C	—	200	—	mA
Output voltage temperature coefficient	$\Delta V_O/Ta$	I_O=5mA	—	–1	—	mV/˚C

Note 1) The specified condition T_j=25˚C means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

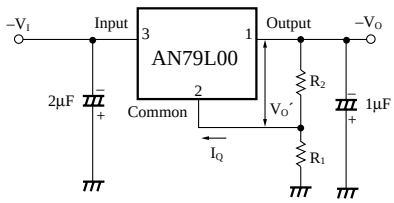
Note 2) When not specified, V_I=–9V, I_O=40mA, C_I=2µF, C_O=1µF, T_j=0 to 125˚C (AN79L04) and T_j=0 to 100˚C (AN79L04)

■ Basic Regulator Circuit



C_I is connected when the input line is long. 2µF
C_O improves the transient Response. 1µF

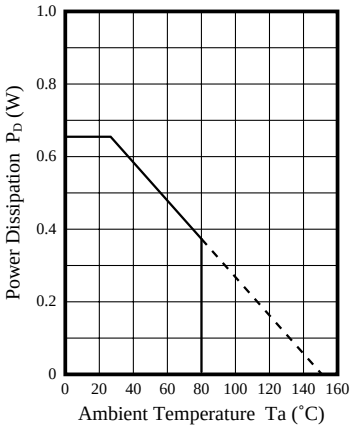
■ Application Circuit



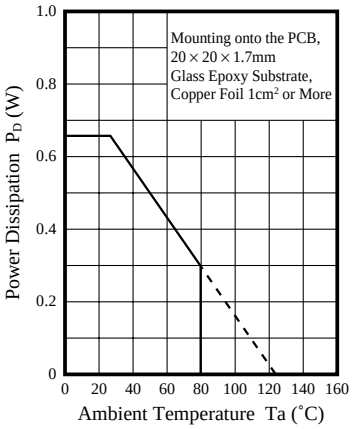
$$|V_O| = V_O' \left(1 + \frac{R_1}{R_2}\right) + I_Q R_1$$

■ Characteristic Curve

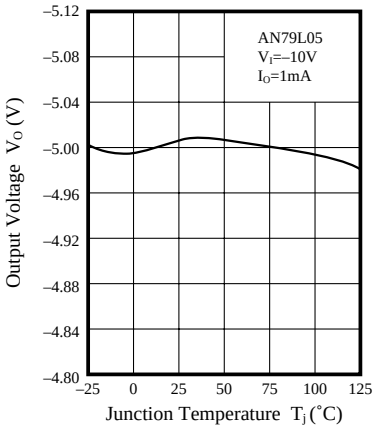
P_D –Ta (AN79L00 Series)



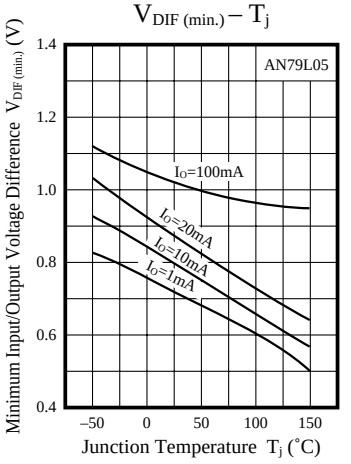
P_D –Ta (AN79L00 M Series)



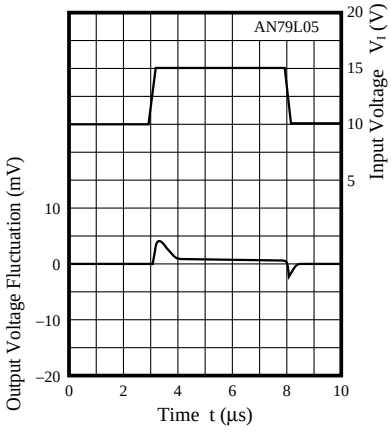
V_O – T_j



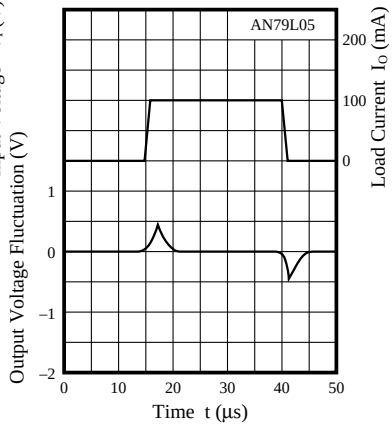
$V_{DIF\ (min.)}$ – T_j



Input Transient Response



Load Transient Response



RR– f