

3-TERMINAL POSITIVE VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

NJM78L00 is 3-terminal positive voltage regulator.

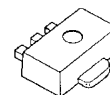
NJM78L00 series is mounted in EMP8 package of the surface mount package.

The EMP8 package possible flow soldering.

■ PACKAGE OUTLINE



NJM78L00A



NJM78L00UA

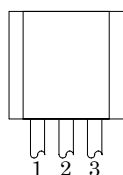


NJM78L00EA
(5V,9V,12V)

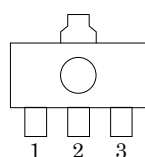
■ FEATURES

- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Excellent Ripple Rejection
- Guaranteed 100mA Output Current
- Bipolar Technology
- Package Outline T0-92,SOT-89,EMP8

■ PIN CONFIGURATION



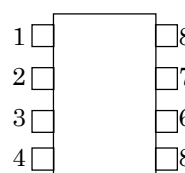
NJM78L00A



NJM78L00UA

PIN FUNCTION

- 1.OUT
- 2.GND
- 3.IN

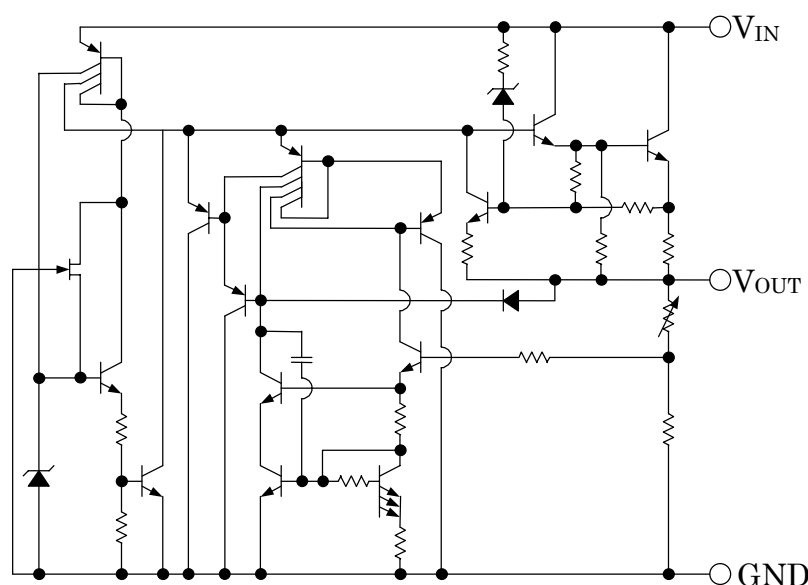


NJM78L00EA
(5V,9V,12V)

PIN FUNCTION

- 1.OUT
- 2.GND
- 3.GND
- 4.NC
- 5.NC
- 6.GND
- 7.GND
- 8.IN

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	MAXIMUM RATINGS	UNIT
Input Voltage	V_{IN}	(78L02A ~ 78L09A) 30 (78L12A ~ 78L15A) 35 (78L18A ~ 78L24A) 40	V
Power Dissipation	P_D	(TO-92) 500 (EMP8) 350 (SOT-89) 300	mW
Operating Temperature Range	Topr	-40 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +150	°C

■ ELECTRICAL CHARACTERISTICS($C_{IN}=0.33\mu F$, $C_O=0.1\mu F$, $T_j=25^\circ C$)

Measurement is to be conducted is pulse testing.

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
NJM78L02A						
Output Voltage	V_O	$V_{IN}=9V$, $I_O=40mA$	2.47	2.6	2.73	V
Line Regulation1	ΔV_O-V_{IN1}	$V_{IN}=4.75V \sim 20V$, $I_O=40mA$	—	—	125	mV
Line Regulation2	ΔV_O-V_{IN2}	$V_{IN}=5V \sim 20V$, $I_O=40mA$	—	—	100	mV
Load Regulation1	ΔV_O-I_{O1}	$V_{IN}=9V$, $I_O=1 \sim 40mA$	—	—	25	mV
Load Regulation2	ΔV_O-I_{O2}	$V_{IN}=9V$, $I_O=1 \sim 100mA$	—	—	50	mV
Quiescent Current	I_Q	$V_{IN}=9V$, $I_O=0mA$	—	2.0	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$V_{IN}=9V$, $I_O=1mA$	—	0.2	—	mV/°C
Ripple Rejection	RR	$6V < V_{IN} < 16V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	43	73	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=9V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	35	—	μV
NJM78L03A(*1)						
Output Voltage	V_O	$V_{IN}=9V$, $I_O=40mA$	2.85	3.0	3.15	V
Line Regulation1	ΔV_O-V_{IN1}	$V_{IN}=5V \sim 20V$, $I_O=40mA$	—	—	125	mV
Line Regulation2	ΔV_O-V_{IN2}	$V_{IN}=6V \sim 20V$, $I_O=40mA$	—	—	100	mV
Load Regulation1	ΔV_O-I_{O1}	$V_{IN}=9V$, $I_O=1 \sim 40mA$	—	—	25	mV
Load Regulation2	ΔV_O-I_{O2}	$V_{IN}=9V$, $I_O=1 \sim 100mA$	—	—	50	mV
Quiescent Current	I_Q	$V_{IN}=9V$, $I_O=0mA$	—	2.0	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$V_{IN}=9V$, $I_O=1mA$	—	0.2	—	mV/°C
Ripple Rejection	RR	$6V < V_{IN} < 16V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	43	72	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=9V$, $BW=10Hz \sim 100kHz$, $I_O=40mA$	—	40	—	μV
NJM78L05A(*3)						
Output Voltage	V_O	$V_{IN}=10V$, $I_O=40mA$	4.75	5.0	5.25	V
Line Regulation1	ΔV_O-V_{IN1}	$V_{IN}=7V \sim 20V$, $I_O=40mA$	—	—	200	mV
Line Regulation2	ΔV_O-V_{IN2}	$V_{IN}=8V \sim 20V$, $I_O=40mA$	—	—	150	mV
Load Regulation1	ΔV_O-I_{O1}	$V_{IN}=10V$, $I_O=1 \sim 40mA$	—	—	30	mV
Load Regulation2	ΔV_O-I_{O2}	$V_{IN}=10V$, $I_O=1 \sim 100mA$	—	—	60	mV
Quiescent Current	I_Q	$V_{IN}=10V$, $I_O=0mA$	—	2.0	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$V_{IN}=10V$, $I_O=1mA$	—	0.4	—	mV/°C
Ripple Rejection	RR	$8V < V_{IN} < 18V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	40	69	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=10V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	70	—	μV

(*1):SOT-89 package only.

(*2):TO-92 package only.

(*3):SOT-89,TO-92, EMP8

■ ELECTRICAL CHARACTERISTICS($C_{IN}=0.33\mu F$, $C_O=0.1\mu F$, $T_J=25^\circ C$)

Measurement is to be conducted is pulse testing.

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
NJM78L06A						
Output Voltage	V_O	$V_{IN}=12V$, $I_O=40mA$	5.7	6.0	6.3	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=8.5V \sim 20V$, $I_O=40mA$	—	—	200	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=9V \sim 20V$, $I_O=40mA$	—	—	150	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=12V$, $I_O=1 \sim 40mA$	—	—	40	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=12V$, $I_O=1 \sim 100mA$	—	—	80	mV
Quiescent Current	I_Q	$V_{IN}=12V$, $I_O=0mA$	—	2.0	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=12V$, $I_O=1mA$	—	0.5	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$9V < V_{IN} < 20V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	40	67	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=12V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	80	—	μV
NJM78L62A(*2)						
Output Voltage	V_O	$V_{IN}=12.2V$, $I_O=40mA$	5.89	6.2	6.51	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=8.7V \sim 20.2V$, $I_O=40mA$	—	—	200	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=9.2V \sim 20.2V$, $I_O=40mA$	—	—	150	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=12.2V$, $I_O=1 \sim 40mA$	—	—	40	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=12.2V$, $I_O=1 \sim 100mA$	—	—	85	mV
Quiescent Current	I_Q	$V_{IN}=12.2V$, $I_O=0mA$	—	2.0	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=12.2V$, $I_O=1mA$	—	0.5	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$9.2V < V_{IN} < 20.2V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	40	67	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=12.2V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	85	—	μV
NJM78L07A						
Output Voltage	V_O	$V_{IN}=13V$, $I_O=40mA$	6.65	7.0	7.35	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=9.5V \sim 22V$, $I_O=40mA$	—	—	210	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=10V \sim 22V$, $I_O=40mA$	—	—	160	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=13V$, $I_O=1 \sim 40mA$	—	—	45	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=13V$, $I_O=1 \sim 100mA$	—	—	90	mV
Quiescent Current	I_Q	$V_{IN}=13V$, $I_O=0mA$	—	2.1	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=13V$, $I_O=1mA$	—	0.55	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$10V < V_{IN} < 20V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	39	66	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=13V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	100	—	μV
NJM78L08A						
Output Voltage	V_O	$V_{IN}=14V$, $I_O=40mA$	7.6	8.0	8.4	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=10.5V \sim 23V$, $I_O=40mA$	—	—	225	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=11V \sim 23V$, $I_O=40mA$	—	—	175	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=14V$, $I_O=1 \sim 40mA$	—	—	50	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=14V$, $I_O=1 \sim 100mA$	—	—	100	mV
Quiescent Current	I_Q	$V_{IN}=14V$, $I_O=0mA$	—	2.1	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=14V$, $I_O=1mA$	—	0.6	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$11V < V_{IN} < 20V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	39	66	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=14V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	115	—	μV

(*1):SOT-89 package only.

(*2):TO-92 package only.

(*3):SOT-89,TO-92, EMP8

■ ELECTRICAL CHARACTERISTICS($C_{IN}=0.33\mu F$, $C_O=0.1\mu F$, $T_J=25^\circ C$)

Measurement is to be conducted is pulse testing.

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
NJM78L09A(*3)						
Output Voltage	V_O	$V_{IN}=15V$, $I_O=40mA$	8.55	9.0	9.45	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=11.5V \sim 23V$, $I_O=40mA$	—	—	250	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=12V \sim 23V$, $I_O=40mA$	—	—	200	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=15V$, $I_O=1 \sim 40mA$	—	—	50	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=15V$, $I_O=1 \sim 100mA$	—	—	100	mV
Quiescent Current	I_Q	$V_{IN}=15V$, $I_O=0mA$	—	2.1	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=15V$, $I_O=1mA$	—	0.65	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$12V < V_{IN} < 21V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	38	65	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=15V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	125	—	μV
NJM78L10A						
Output Voltage	V_O	$V_{IN}=16V$, $I_O=40mA$	9.5	10.0	10.5	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=13V \sim 25V$, $I_O=40mA$	—	—	250	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=14V \sim 25V$, $I_O=40mA$	—	—	200	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=16V$, $I_O=1 \sim 40mA$	—	—	50	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=16V$, $I_O=1 \sim 100mA$	—	—	100	mV
Quiescent Current	I_Q	$V_{IN}=16V$, $I_O=0mA$	—	2.1	6	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=16V$, $I_O=1mA$	—	0.7	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$13V < V_{IN} < 22V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	37	64	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=16V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	135	—	μV
NJM78L12A(*3)						
Output Voltage	V_O	$V_{IN}=19V$, $I_O=40mA$	11.4	12.0	12.6	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=14.5V \sim 27V$, $I_O=40mA$	—	—	250	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=16V \sim 27V$, $I_O=40mA$	—	—	200	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=19V$, $I_O=1 \sim 40mA$	—	—	50	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=19V$, $I_O=1 \sim 100mA$	—	—	100	mV
Quiescent Current	I_Q	$V_{IN}=19V$, $I_O=0mA$	—	2.1	6.5	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=19V$, $I_O=1mA$	—	0.9	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$15V < V_{IN} < 25V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	37	62	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=19V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	160	—	μV
NJM78L15A						
Output Voltage	V_O	$V_{IN}=23V$, $I_O=40mA$	14.3	15.0	15.7	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=17.5V \sim 30V$, $I_O=40mA$	—	—	300	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=20V \sim 30V$, $I_O=40mA$	—	—	250	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=23V$, $I_O=1 \sim 40mA$	—	—	75	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=23V$, $I_O=1 \sim 100mA$	—	—	150	mV
Quiescent Current	I_Q	$V_{IN}=23V$, $I_O=0mA$	—	2.2	6.5	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=23V$, $I_O=1mA$	—	1.0	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$18.5V < V_{IN} < 28.5V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	34	60	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=23V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	190	—	μV

(*1):SOT-89 package only.

(*2):TO-92 package only.

(*3):SOT-89,TO-92, EMP8

■ ELECTRICAL CHARACTERISTICS($C_{IN}=0.33\mu F$, $C_O=0.1\mu F$, $T_j=25^\circ C$)

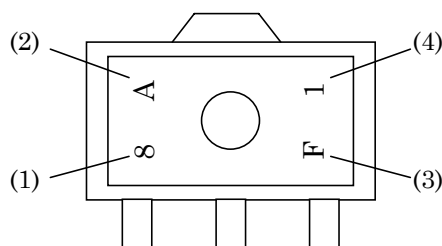
Measurement is to be conducted is pulse testing.

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
NJM78L18A						
Output Voltage	V_O	$V_{IN}=27V$, $I_O=40mA$	17.1	18.0	18.9	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=22V \sim 33V$, $I_O=40mA$	—	—	320	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=23V \sim 33V$, $I_O=40mA$	—	—	270	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=27V$, $I_O=1 \sim 40mA$	—	—	80	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=27V$, $I_O=1 \sim 100mA$	—	—	160	mV
Quiescent Current	I_Q	$V_{IN}=27V$, $I_O=0mA$	—	2.2	6.5	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=27V$, $I_O=1mA$	—	1.1	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$23V < V_{IN} < 33V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	33	59	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=27V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	230	—	μV
NJM78L20A						
Output Voltage	V_O	$V_{IN}=29V$, $I_O=40mA$	19.0	20.0	21.0	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=23V \sim 34V$, $I_O=40mA$	—	—	330	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=24V \sim 34V$, $I_O=40mA$	—	—	280	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=29V$, $I_O=1 \sim 40mA$	—	—	90	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=29V$, $I_O=1 \sim 100mA$	—	—	180	mV
Quiescent Current	I_Q	$V_{IN}=29V$, $I_O=0mA$	—	2.3	7	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=29V$, $I_O=1mA$	—	1.2	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$24V < V_{IN} < 34V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	32	58	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=29V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	250	—	μV
NJM78L24A						
Output Voltage	V_O	$V_{IN}=33V$, $I_O=40mA$	22.8	24	25.2	V
Line Regulation1	$\Delta V_O - V_{IN1}$	$V_{IN}=27V \sim 38V$, $I_O=40mA$	—	—	350	mV
Line Regulation2	$\Delta V_O - V_{IN2}$	$V_{IN}=28V \sim 38V$, $I_O=40mA$	—	—	300	mV
Load Regulation1	$\Delta V_O - I_{O1}$	$V_{IN}=33V$, $I_O=1 \sim 40mA$	—	—	100	mV
Load Regulation2	$\Delta V_O - I_{O2}$	$V_{IN}=33V$, $I_O=1 \sim 100mA$	—	—	200	mV
Quiescent Current	I_Q	$V_{IN}=33V$, $I_O=0mA$	—	2.3	7	mA
Average Temperature	$\Delta V_O / \Delta T$	$V_{IN}=33V$, $I_O=1mA$	—	1.4	—	mV/ $^\circ C$
Coefficient of Output Voltage						
Ripple Rejection	RR	$27.5V < V_{IN} < 37.5V$, $I_O=40mA$ $e_{in}=1V_{p-p}$, $f=120Hz$	32	57	—	dB
Output Noise Voltage	V_{NO}	$V_{IN}=33V$, $BW=10Hz \sim 100kHz$ $I_O=40mA$	—	280	—	μV

(*1):SOT-89 package only.

(*2):TO-92 package only.

(*3):SOT-89,TO-92, EMP8

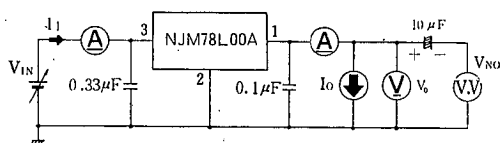
■ SOT-89 MARK


- (1) 8 : Positive Output
 (2) Vo Rank
 (3) The end of A.D.
 (4) Production Mouth
 Oct. ... X
 Nov. ... Y
 Dec. ... Z

NJM78L02A	8	A
NJM78L03A	8	B
NJM78L05A	8	C
NJM78L06A	8	E
NJM78L62A	8	Z
NJM78L07A	8	F
NJM78L08A	8	G
NJM78L09A	8	H
NJM78L10A	8	J
NJM78L12A	8	K
NJM78L15A	8	L
NJM78L18A	8	M
NJM78L20A	8	N
NJM78L24A	8	P

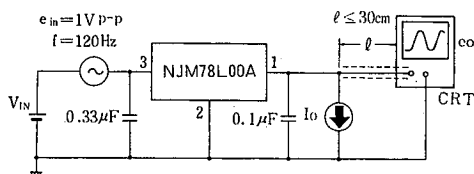
■ TEST CIRCUIT

1. Output Voltage, Line Regulation, Load Regulation, Quiescent Current, Average Temperature Coefficient of Output Voltage, Output Noise Voltage, Peak Output/Short-Circuit Current
2. Ripple Rejection



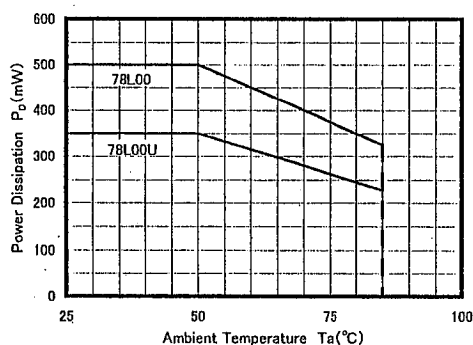
○ Measurement is to be conducted in pulse testing.

○ $I_Q = I_1 - I_O$



$$RR = 20 \log_{10} \left(\frac{e_{in}}{e_o} \right) \text{ (dB)}$$

■ AMBIENT TEMPERATURE VS. POWER DISSIPATION

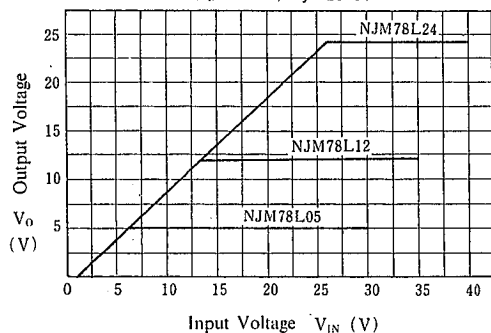


■ TYPICAL CHARACTERISTICS

NJM78L05/L12/L24

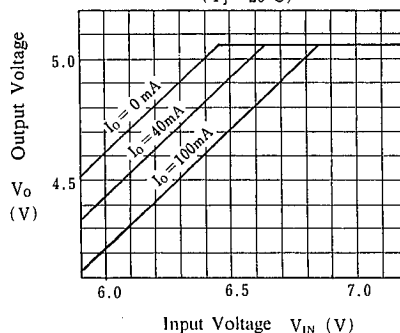
Output Characteristics

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



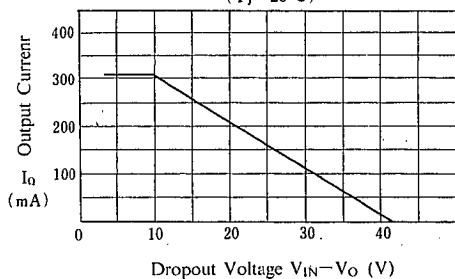
NJM78L05 Dropout Characteristics

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



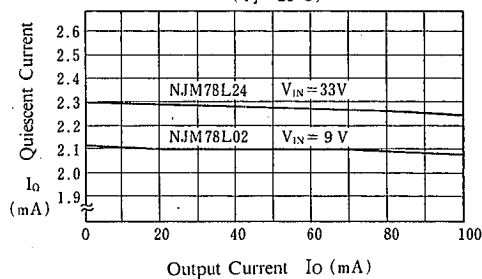
NJM78L00 Series Short Circuit Output Current

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



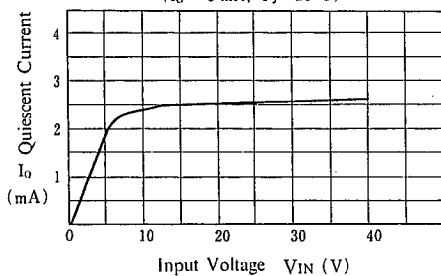
NJM78L02/L24 Quiescent Current vs. Output Current

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



NJM78L05 Quiescent Current vs. Input Voltage

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



■ TYPICAL CHARACTERISTICS

