

#### 3-TERMINAL POSITIVE VOLTAGE REGULATOR

#### **■ GENERAL DESCRIPTION**

The NJM78L00 series of 3-Terminal Positive Voltage Regulators is constructed using the New JRC Planar epitaxial process. 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 NJM78L00 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.

**■ PACKAGE OUTLINE** 

#### (SOT-89) (EMP8)



NJM78L00UA NJM78L00EA (5V, 9V, 12V Version Only)

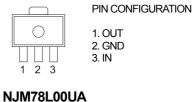
#### **■ FEATURES**

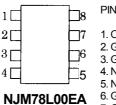
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Excellent Ripple Rejection
- Guarantee'd 100mA Output Current
- Package Outline

SOT-89, EMP8

Bipolar Technology

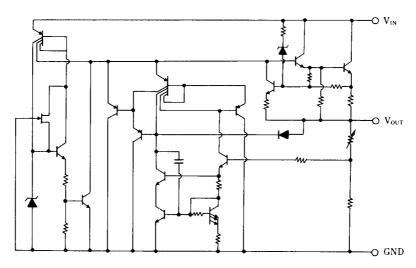
#### **■ PIN CONFIGURATION**





PIN CONFIGURATION 1. OUT 2. GND 3. GND 4 NC 5. NC 6. GND 7. GND

#### **■ EQUIVALENT CIRCUIT**



## **NJM78L00**

#### ■ ABSOLUTE MAXIMUM RATINGS

(T<sub>a</sub>=25°C)

PARAMETER	SYMBOL	MAXIMUM RATINGS	UNIT	
Input Voltage	V <sub>IN</sub>	(78L02A to 78L09A) 30 (78L12A to 78L15A) 35 (78L18A to 78L24A) 40	V	
Power Dissipation	P <sub>D</sub>	(EMP8) 350 (SOT-89) 300	mW	
Operating Temperature Range	T <sub>opr</sub>	-40 to +85	°C	
Storage Temperature Range	T <sub>stg</sub>	-40 to +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
NJM78L02UA						
Output Voltage	Vo	V <sub>IN</sub> =9V, I <sub>O</sub> =40mA		2.6	2.73	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =4.75V to 20V, $I_{O}$ =40mA	-	-	125	mV
Line Regulation 2	$\Delta V_O$ - $V_{IN}2$	V <sub>IN</sub> =5V to 20V, I <sub>O</sub> =40mA	-	-	100	mV
Load Regulation 1	$\Delta V_O$ - $I_O1$	V <sub>IN</sub> =9V, I <sub>O</sub> =1 to 40mA	-	-	25	mV
Load Regulation 2	$\Delta V_O$ - $I_O$ 2	V <sub>IN</sub> =9V, I <sub>O</sub> =1 to 100mA	-	-	50	mV
Quiescent Current	$I_{Q}$	V <sub>IN</sub> =9V, I <sub>O</sub> =0mA	-	2.0	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_{O}/\Delta T$	V <sub>IN</sub> =9V, I <sub>O</sub> =1mA	-	0.2	-	mV/°C
Ripple Rejection	RR	6V< V <sub>IN</sub> <16V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	43	73	-	dB
Output Noise Voltage	$V_{NO}$	$V_{IN}$ =9V, BW=10Hz to 100kHz, $I_{O}$ =40mA	-	35	-	μV
NJM78L03UA						
Output Voltage	Vo	V <sub>IN</sub> =9V, I <sub>O</sub> =40mA	2.85	3.0	3.15	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =5V to 20V, $I_{O}$ =40mA	-	-	125	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}$ 2	$V_{IN}$ =6V to 20V, $I_{O}$ =40mA	-	-	100	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}1$	$V_{IN}$ =9V, $I_{O}$ =1 to 40mA	-	-	25	mV
Load Regulation 2	$\Delta V_{O}$ - $I_{O}2$	V <sub>IN</sub> =9V, I <sub>O</sub> =1 to 100mA	-	-	50	mV
Quiescent Current	$I_{Q}$	V <sub>IN</sub> =9V, I <sub>O</sub> =0mA	-	2.0	6	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =9V, I <sub>O</sub> =1mA	-	0.2	-	mV/°C
Ripple Rejection	RR	6V< V <sub>IN</sub> <16V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	43	72	-	dB
Output Noise Voltage	$V_{NO}$	$V_{IN}$ =9V, BW=10Hz to 100kHz, $I_{O}$ =40mA	-	40	-	μV
NJM78L05UA/EA						
Output Voltage	Vo	V <sub>IN</sub> =10V, I <sub>O</sub> =40mA	4.75	5.0	5.25	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =7V to 20V, $I_{O}$ =40mA	-	-	200	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}$ 2	$V_{IN}$ =8V to 20V, $I_{O}$ =40mA	-	-	150	mV
Load Regulation 1	$\Delta V_O$ - $I_O$ 1	$V_{IN}$ =10V, $I_{O}$ =1 to 40mA	-	-	30	mV
Load Regulation 2	$\Delta V_{O}$ - $I_{O}2$	$V_{IN}$ =10V, $I_{O}$ =1 to 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 <sub>IN</sub> =10V, I <sub>O</sub> =1mA	-	0.4	-	mV/°C
Ripple Rejection	RR	$8V < V_{IN} < 18V, I_O = 40 \text{mA}, e_{in} = 1V_{P-P}, f = 120 \text{Hz}$	40	69	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =10V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	70	-	μV

## ■ 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
NJM78L06UA						
Output Voltage	Vo	V <sub>IN</sub> =12V, I <sub>O</sub> =40mA		6.0	6.3	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =8.5V to 20V, $I_{O}$ =40mA	-	-	200	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	V <sub>IN</sub> =9V to 20V, I <sub>O</sub> =40mA	-	-	150	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}$ 1	V <sub>IN</sub> =12V, I <sub>O</sub> =1 to 40mA	-	-	40	mV
Load Regulation 2	$\Delta V_O$ - $I_O$ 2	V <sub>IN</sub> =12V, I <sub>O</sub> =1 to 100mA	-	-	80	mV
Quiescent Current	$I_Q$	V <sub>IN</sub> =12V, I <sub>O</sub> =0mA	-	2.0	6	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =12V, I <sub>O</sub> =1mA	-	0.5	-	mV/°C
Ripple Rejection	RR	9V< V <sub>IN</sub> <20V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	40	67	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =12V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	80	-	μV
NJM78L07UA						
Output Voltage	Vo	V <sub>IN</sub> =13V, I <sub>O</sub> =40mA	6.65	7.0	7.35	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =9.5V to 22V, $I_{O}$ =40mA	-	-	210	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	$V_{IN}$ =10V to 22V, $I_{O}$ =40mA	-	-	160	mV
Load Regulation 1	$\Delta V_O$ - $I_O$ 1	V <sub>IN</sub> =13V, I <sub>O</sub> =1 to 40mA	-	-	45	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =13V, I <sub>O</sub> =1 to 100mA	-	-	90	mV
Quiescent Current	$I_{Q}$	$V_{IN}$ =13V, $I_{O}$ =0mA	-	2.1	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_{O}/\Delta T$	V <sub>IN</sub> =13V, I <sub>O</sub> =1mA		0.55	-	mV/°C
Ripple Rejection	RR	10V< V <sub>IN</sub> <20V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	39	66	-	dB
Output Noise Voltage	$V_{NO}$	$V_{IN}$ =13V, BW=10Hz to 100kHz, $I_{O}$ =40mA	-	100	-	μV
NJM78L08UA						
Output Voltage	$V_{O}$	V <sub>IN</sub> =14V, I <sub>O</sub> =40mA	7.6	8.0	8.4	V
Line Regulation 1	$\Delta V_O$ - $V_{IN}$ 1	V <sub>IN</sub> =10.5V to 23V, I <sub>O</sub> =40mA	-	-	225	mV
Line Regulation 2	$\Delta V_O$ - $V_{IN}2$	V <sub>IN</sub> =11V to 23V, I <sub>O</sub> =40mA	-	-	175	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}1$	V <sub>IN</sub> =14V, I <sub>O</sub> =1 to 40mA	-	-	50	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =14V, I <sub>O</sub> =1 to 100mA	-	-	100	mV
Quiescent Current	$I_{Q}$	V <sub>IN</sub> =14V, I <sub>O</sub> =0mA	-	2.1	6	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	V <sub>IN</sub> =14V, I <sub>O</sub> =1mA	-	0.6	-	mV/°C
Ripple Rejection	RR	11V< V <sub>IN</sub> <20V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	39	66	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =14V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	115	-	μV

## **NJM78L00**

### ■ 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.

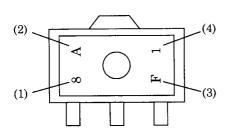
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PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
NJM78L09UA/EA						
Output Voltage	Vo	V <sub>IN</sub> =15V, I <sub>O</sub> =40mA		9.0	9.45	V
Line Regulation 1	$\Delta V_{O}-V_{IN}1$	$V_{IN}$ =11.5V to 23V, $I_{O}$ =40mA		-	250	mV
Line Regulation 2	$\Delta V_{O}-V_{IN}2$	V <sub>IN</sub> =12V to 23V, I <sub>O</sub> =40mA	-	-	200	mV
Load Regulation 1	$\Delta V_0$ - $I_0$ 1	V <sub>IN</sub> =15V, I <sub>O</sub> =1 to 40mA	-	-	50	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =15V, I <sub>O</sub> =1 to 100mA	-	-	100	mV
Quiescent Current	ΙQ	V <sub>IN</sub> =15V, I <sub>O</sub> =0mA	-	2.1	6	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =15V, I <sub>O</sub> =1mA	-	0.65	-	mV/°C
Ripple Rejection	RR	12V< V <sub>IN</sub> <21V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	38	65	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =15V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	125	-	μV
NJM78L10UA						
Output Voltage	Vo	V <sub>IN</sub> =16V, I <sub>O</sub> =40mA	9.5	10.0	10.5	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	V <sub>IN</sub> =13V to 25V, I <sub>O</sub> =40mA	-	-	250	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	V <sub>IN</sub> =14V to 25V, I <sub>O</sub> =40mA	-	-	200	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}$ 1	V <sub>IN</sub> =16V, I <sub>O</sub> =1 to 40mA	-	-	50	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =16V, I <sub>O</sub> =1 to 100mA	-	-	100	mV
Quiescent Current	lQ	V <sub>IN</sub> =16V, I <sub>O</sub> =0mA	-	2.1	6	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =16V, I <sub>O</sub> =1mA	-	0.7	-	mV/°C
Ripple Rejection	RR	13V< V <sub>IN</sub> <22V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	37	64	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =16V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	135	-	μV
NJM78L12UA/EA						
Output Voltage	Vo	V <sub>IN</sub> =19V, I <sub>O</sub> =40mA	11.4	12.0	12.6	V
Line Regulation 1	$\Delta V_O$ - $V_{IN}$ 1	V <sub>IN</sub> =14.5V to 27V, I <sub>O</sub> =40mA	-	-	250	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	V <sub>IN</sub> =16V to 27V, I <sub>O</sub> =40mA	-	-	200	mV
Load Regulation 1	$\Delta V_0$ - $I_0$ 1	V <sub>IN</sub> =19V, I <sub>O</sub> =1 to 40mA	-	-	50	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =19V, I <sub>O</sub> =1 to 100mA	-	-	100	mV
Quiescent Current	ΙQ	V <sub>IN</sub> =19V, I <sub>O</sub> =0mA	-	2.1	6.5	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_{O}/\Delta T$	V <sub>IN</sub> =19V, I <sub>O</sub> =1mA	-	0.9	-	mV/°C
Ripple Rejection	RR	15V< V <sub>IN</sub> <25V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	37	62	-	dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =19V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	160	-	μV
NJM78L15UA						
Output Voltage	Vo	V <sub>IN</sub> =23V, I <sub>O</sub> =40mA	14.3	15.0	15.7	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	V <sub>IN</sub> =17.5V to 30V, I <sub>O</sub> =40mA	-	-	300	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	V <sub>IN</sub> =20V to 30V, I <sub>O</sub> =40mA	-	-	250	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}1$	V <sub>IN</sub> =23V, I <sub>O</sub> =1 to 40mA	-	-	75	mV
Load Regulation 2	$\Delta V_0$ - $I_0$ 2	V <sub>IN</sub> =23V, I <sub>O</sub> =1 to 100mA	-	-	150	mV
Quiescent Current	lQ	V <sub>IN</sub> =23V, I <sub>O</sub> =0mA	-	2.2	6.5	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>0</sub> /ΔΤ	V <sub>IN</sub> =23V, I <sub>O</sub> =1mA	-	1.0	-	mV/°C
Ripple Rejection	RR	18.5V< V <sub>IN</sub> <28.5V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	34	60	-	dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =23V, BW=10Hz to 100kHz, I <sub>0</sub> =40mA	-	190	-	μV
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### ■ 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
NJM78L18UA						
Output Voltage	Vo	V <sub>IN</sub> =27V, I <sub>O</sub> =40mA		18.0	18.9	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	V <sub>IN</sub> =22V to 33V, I <sub>O</sub> =40mA	-	-	320	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	V <sub>IN</sub> =22V to 33V, I <sub>O</sub> =40mA	-	-	270	mV
Load Regulation 1	$\Delta V_{O}$ - $I_{O}$ 1	V <sub>IN</sub> =27V, I <sub>O</sub> =1 to 40mA	-	-	80	mV
Load Regulation 2	$\Delta V_O$ - $I_O$ 2	V <sub>IN</sub> =27V, I <sub>O</sub> =1 to 100mA	-	-	160	mV
Quiescent Current	$I_Q$	V <sub>IN</sub> =27V, I <sub>O</sub> =0mA	-	2.2	6.5	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =27V, I <sub>O</sub> =1mA	-	1.1	-	mV/°C
Ripple Rejection	RR	23V< V <sub>IN</sub> <33V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	33	59	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =27V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	230	-	μV
NJM78L20UA						
Output Voltage	Vo	V <sub>IN</sub> =29V, I <sub>O</sub> =40mA	19.0	20.0	21.0	V
Line Regulation 1	$\Delta V_{O}$ - $V_{IN}$ 1	$V_{IN}$ =23V to 34V, $I_{O}$ =40mA	-	-	330	mV
Line Regulation 2	$\Delta V_{O}$ - $V_{IN}2$	$V_{IN}$ =24V to 34V, $I_O$ =40mA	-	-	280	mV
Load Regulation 1	$\Delta V_O$ - $I_O$ 1	V <sub>IN</sub> =29V, I <sub>O</sub> =1 to 40mA	-	-	90	mV
Load Regulation 2	$\Delta V_O$ - $I_O$ 2	V <sub>IN</sub> =29V, I <sub>O</sub> =1 to 100mA	-	-	180	mV
Quiescent Current	$I_{Q}$	V <sub>IN</sub> =29V, I <sub>O</sub> =0mA	-	2.3	7	mA
Average Temperature Coefficient of Output Voltage	$\Delta V_{O}/\Delta T$	V <sub>IN</sub> =29V, I <sub>O</sub> =1mA		1.2	-	mV/°C
Ripple Rejection	RR	24V< V <sub>IN</sub> <34V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	32	58	-	dB
Output Noise Voltage	$V_{NO}$	$V_{IN}$ =29V, BW=10Hz to 100kHz, $I_{O}$ =40mA	-	250	-	μV
NJM78L24UA						
Output Voltage	$V_{O}$	V <sub>IN</sub> =33V, I <sub>O</sub> =40mA	22.8	24	25.2	V
Line Regulation 1	$\Delta V_O$ - $V_{IN}$ 1	V <sub>IN</sub> =27V to 38V, I <sub>O</sub> =40mA	-	-	350	mV
Line Regulation 2	$\Delta V_O$ - $V_{IN}2$	V <sub>IN</sub> =28V to 38V, I <sub>O</sub> =40mA	-	-	300	mV
Load Regulation 1	$\Delta V_0$ - $I_0$ 1	V <sub>IN</sub> =33V, I <sub>O</sub> =1 to 40mA	-	-	100	mV
Load Regulation 2	$\Delta V_O$ - $I_O$ 2	V <sub>IN</sub> =33V, I <sub>O</sub> =1 to 100mA	-	-	200	mV
Quiescent Current	$I_Q$	V <sub>IN</sub> =33V, I <sub>O</sub> =0mA	-	2.3	7	mA
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔΤ	V <sub>IN</sub> =33V, I <sub>O</sub> =1mA	-	1.4	-	mV/°C
Ripple Rejection	RR	27.5V< V <sub>IN</sub> <37.5V, I <sub>O</sub> =40mA, e <sub>in</sub> =1V <sub>P-P</sub> , f=120Hz	32	57	-	dB
Output Noise Voltage	$V_{NO}$	V <sub>IN</sub> =33V, BW=10Hz to 100kHz, I <sub>O</sub> =40mA	-	280	-	μV

#### ■ SOT-89 MARK



- (1) 8 : Positive Output
  (2) V<sub>O</sub> Rank
  (3) The end of A.D.

(4) Production Mouth

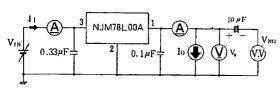
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NJM78L02UA	8	Α
NJM78L03UA	8	В
NJM78L05UA	8	С
NJM78L06UA	8	Е
NJM78L07UA	8	F
NJM78L08UA	8	G
NJM78L09UA	8	Ι
NJM78L10UA	8	J
NJM78L12UA	8	K
NJM78L15UA	8	L
NJM78L18UA	8	М
NJM78L20UA	8	N
NJM78L24UA	8	Р

## **NJM78L00**

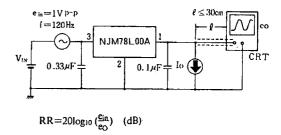
#### **■ TEST CIRCUIT**

 Output Voltage, Line Regulation, Load Regulation, Quiescent Current, Average Temperature Coefficient of Output Voltage, Output Noise Voltage, Peak Output/Short-Circuit Current



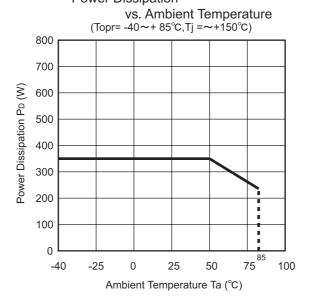
O Measurement is to be conducted in pulse testing. O 1 = 1 - 10

#### 2. Ripple Rejection



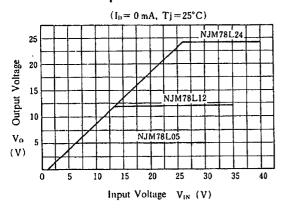
#### ■POWER DISSIPATION VS. AMBIENT TEMPERATURE

### Power Dissipation

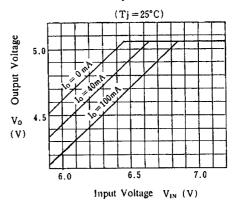


#### **■ TYPICAL CHARACTERISTICS**

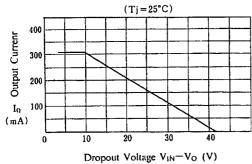
### NJM78L05 / L12 / L24 Output Characteristics



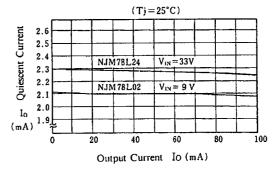
#### **NJM78L05 Dropout Characteristics**



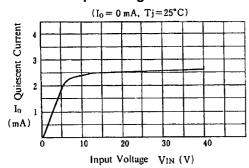
# NJM78L00 Series Short Circuit Output Current



## NJM78L02 / L24 Quiescent Current vs. Output Current

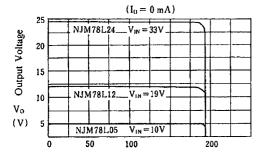


## NJM78L05 Quiescent Current vs. Input Voltage



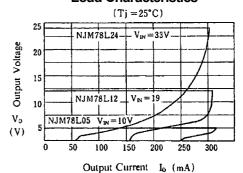
#### **■ TYPICAL CHARACTERISTICS**

## NJM78L05 / L12 / L24 Thermal Shutdown Characteristics

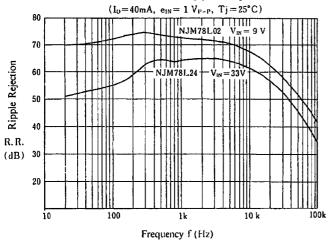


Ambient Temperature Ta (°C)

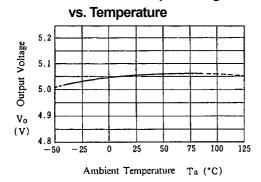
#### NJM78L05 / L12 / L24 Load Characteristics



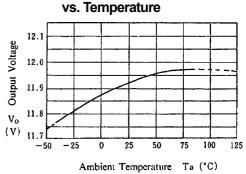
#### NJM78L02 / L24 Ripple Rejection



### NJM78L05 Output Voltage



## NJM78L12 Output Voltage



#### [CAUTION]

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