

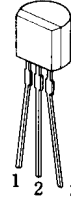
3-TERMINAL POSITIVE VOLTAGE REGULATOR

■ 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

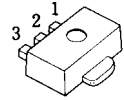
(TO-92)



NJM78L00A

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

(SOT-89)



NJM78L00UA

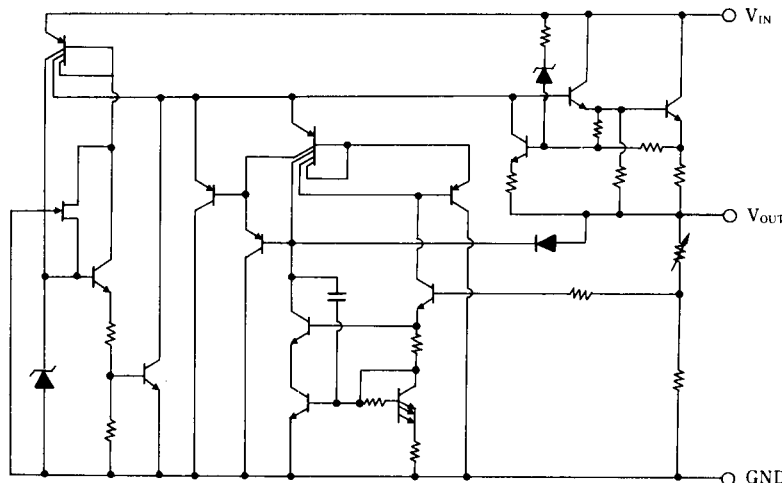
- 1.OUT
- 2.GND
- 3.IN

■ FEATURES

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

TO-92, SOT-89

■ EQUIVALENT CIRCUIT



NJM78L00

■ ABSOLUTE MAXIMUM RATINGS

(T_a=25°C)

| PARAMETER | SYMBOL | MAXIMUM RATINGS | UNIT |
|-----------------------------|------------------|-----------------------|------|
| Input Voltage | V _{IN} | (78L02A to 78L09A) 30 | V |
| | | (78L12A to 78L15A) 35 | |
| | | (78L18A to 78L24A) 40 | |
| Power Dissipation | P _D | (TO-92) 500 | mW |
| | | (EMP8) 350 | |
| | | (SOT-89) 300 | |
| Operating Temperature Range | T _{opr} | -40 to +85 | °C |
| Storage Temperature Range | T _{stg} | -40 to +150 | °C |

■ ELECTRICAL CHARACTERISTICS(C_{IN}=0.33μF, C_O=0.1μF, T_J=25°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 Regulation 1 | ΔV _O -V _{IN1} | V _{IN} =4.75V to 20V, I _O =40mA | - | - | 125 | mV |
| Line Regulation 2 | ΔV _O -V _{IN2} | V _{IN} =5V to 20V, I _O =40mA | - | - | 100 | mV |
| Load Regulation 1 | ΔV _O -I _{O1} | V _{IN} =9V, I _O =1 to 40mA | - | - | 25 | mV |
| Load Regulation 2 | ΔV _O -I _{O2} | V _{IN} =9V, I _O =1 to 100mA | - | - | 50 | mV |
| Quiescent Current | I _Q | V _{IN} =9V, I _O =0mA | - | 2.0 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | ΔV _O /ΔT | 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 to 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 Regulation 1 | ΔV _O -V _{IN1} | V _{IN} =5V to 20V, I _O =40mA | - | - | 125 | mV |
| Line Regulation 2 | ΔV _O -V _{IN2} | V _{IN} =6V to 20V, I _O =40mA | - | - | 100 | mV |
| Load Regulation 1 | ΔV _O -I _{O1} | V _{IN} =9V, I _O =1 to 40mA | - | - | 25 | mV |
| Load Regulation 2 | ΔV _O -I _{O2} | V _{IN} =9V, I _O =1 to 100mA | - | - | 50 | mV |
| Quiescent Current | I _Q | V _{IN} =9V, I _O =0mA | - | 2.0 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | ΔV _O /ΔT | 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 to 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 Regulation 1 | ΔV _O -V _{IN1} | V _{IN} =7V to 20V, I _O =40mA | - | - | 200 | mV |
| Line Regulation 2 | ΔV _O -V _{IN2} | V _{IN} =8V to 20V, I _O =40mA | - | - | 150 | mV |
| Load Regulation 1 | ΔV _O -I _{O1} | V _{IN} =10V, I _O =1 to 40mA | - | - | 30 | mV |
| Load Regulation 2 | ΔV _O -I _{O2} | 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 | ΔV _O /ΔT | 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 to 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 Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=8.5V$ to $20V, I_O=40mA$ | - | - | 200 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=9V$ to $20V, I_O=40mA$ | - | - | 150 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=12V, I_O=1$ to $40mA$ | - | - | 40 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=12V, I_O=1$ to $100mA$ | - | - | 80 | mV |
| Quiescent Current | I_Q | $V_{IN}=12V, I_O=0mA$ | - | 2.0 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=12V, I_O=1mA$ | - | 0.5 | - | mV/°C |
| 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} | $V_{IN}=12V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 80 | - | μV |
| NJM78L62A(*2) | | | | | | |
| Output Voltage | V_O | $V_{IN}=12.2V, I_O=40mA$ | 5.89 | 6.2 | 6.51 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=8.7V$ to $20.2V, I_O=40mA$ | - | - | 200 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=9.2V$ to $20.2V, I_O=40mA$ | - | - | 150 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=12.2V, I_O=1$ to $40mA$ | - | - | 40 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=12.2V, I_O=1$ to $100mA$ | - | - | 85 | mV |
| Quiescent Current | I_Q | $V_{IN}=12.2V, I_O=0mA$ | - | 2.0 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=12.2V, I_O=1mA$ | - | 0.5 | - | mV/°C |
| 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} | $V_{IN}=12.2V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 85 | - | μV |
| NJM78L07A | | | | | | |
| Output Voltage | V_O | $V_{IN}=13V, I_O=40mA$ | 6.65 | 7.0 | 7.35 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=9.5V$ to $22V, I_O=40mA$ | - | - | 210 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=10V$ to $22V, I_O=40mA$ | - | - | 160 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=13V, I_O=1$ to $40mA$ | - | - | 45 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=13V, I_O=1$ to $100mA$ | - | - | 90 | mV |
| Quiescent Current | I_Q | $V_{IN}=13V, I_O=0mA$ | - | 2.1 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=13V, I_O=1mA$ | - | 0.55 | - | mV/°C |
| 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} | $V_{IN}=13V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 100 | - | μV |
| NJM78L08A | | | | | | |
| Output Voltage | V_O | $V_{IN}=14V, I_O=40mA$ | 7.6 | 8.0 | 8.4 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=10.5V$ to $23V, I_O=40mA$ | - | - | 225 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=11V$ to $23V, I_O=40mA$ | - | - | 175 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=14V, I_O=1$ to $40mA$ | - | - | 50 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=14V, I_O=1$ to $100mA$ | - | - | 100 | mV |
| Quiescent Current | I_Q | $V_{IN}=14V, I_O=0mA$ | - | 2.1 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=14V, I_O=1mA$ | - | 0.6 | - | mV/°C |
| 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} | $V_{IN}=14V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 115 | - | μV |

(*1) : SOT-89 package only.

(*2) : TO-92 package only.

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

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.

| 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 Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=11.5V$ to $23V, I_O=40mA$ | - | - | 250 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=12V$ to $23V, I_O=40mA$ | - | - | 200 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=15V, I_O=1$ to $40mA$ | - | - | 50 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=15V, I_O=1$ to $100mA$ | - | - | 100 | mV |
| Quiescent Current | I_Q | $V_{IN}=15V, I_O=0mA$ | - | 2.1 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=15V, I_O=1mA$ | - | 0.65 | - | mV/ $^\circ C$ |
| 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} | $V_{IN}=15V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 125 | - | μV |
| NJM78L10A | | | | | | |
| Output Voltage | V_O | $V_{IN}=16V, I_O=40mA$ | 9.5 | 10.0 | 10.5 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=13V$ to $25V, I_O=40mA$ | - | - | 250 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=14V$ to $25V, I_O=40mA$ | - | - | 200 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=16V, I_O=1$ to $40mA$ | - | - | 50 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=16V, I_O=1$ to $100mA$ | - | - | 100 | mV |
| Quiescent Current | I_Q | $V_{IN}=16V, I_O=0mA$ | - | 2.1 | 6 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=16V, I_O=1mA$ | - | 0.7 | - | mV/ $^\circ C$ |
| 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} | $V_{IN}=16V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 135 | - | μV |
| NJM78L12A(*3) | | | | | | |
| Output Voltage | V_O | $V_{IN}=19V, I_O=40mA$ | 11.4 | 12.0 | 12.6 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=14.5V$ to $27V, I_O=40mA$ | - | - | 250 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=16V$ to $27V, I_O=40mA$ | - | - | 200 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=19V, I_O=1$ to $40mA$ | - | - | 50 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=19V, I_O=1$ to $100mA$ | - | - | 100 | mV |
| Quiescent Current | I_Q | $V_{IN}=19V, I_O=0mA$ | - | 2.1 | 6.5 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=19V, I_O=1mA$ | - | 0.9 | - | mV/ $^\circ C$ |
| 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} | $V_{IN}=19V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 160 | - | μV |
| NJM78L15A | | | | | | |
| Output Voltage | V_O | $V_{IN}=23V, I_O=40mA$ | 14.3 | 15.0 | 15.7 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=17.5V$ to $30V, I_O=40mA$ | - | - | 300 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=20V$ to $30V, I_O=40mA$ | - | - | 250 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=23V, I_O=1$ to $40mA$ | - | - | 75 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=23V, I_O=1$ to $100mA$ | - | - | 150 | mV |
| Quiescent Current | I_Q | $V_{IN}=23V, I_O=0mA$ | - | 2.2 | 6.5 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=23V, I_O=1mA$ | - | 1.0 | - | mV/ $^\circ C$ |
| 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} | $V_{IN}=23V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 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.

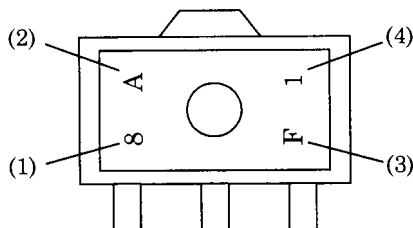
| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|-----------------------|--|------|------|------|---------|
| NJM78L18A | | | | | | |
| Output Voltage | V_O | $V_{IN}=27V, I_O=40mA$ | 17.1 | 18.0 | 18.9 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=22V$ to $33V, I_O=40mA$ | - | - | 320 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=22V$ to $33V, I_O=40mA$ | - | - | 270 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=27V, I_O=1$ to $40mA$ | - | - | 80 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=27V, I_O=1$ to $100mA$ | - | - | 160 | mV |
| Quiescent Current | I_Q | $V_{IN}=27V, I_O=0mA$ | - | 2.2 | 6.5 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=27V, I_O=1mA$ | - | 1.1 | - | mV/°C |
| 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} | $V_{IN}=27V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 230 | - | μV |
| NJM78L20A | | | | | | |
| Output Voltage | V_O | $V_{IN}=29V, I_O=40mA$ | 19.0 | 20.0 | 21.0 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=23V$ to $34V, I_O=40mA$ | - | - | 330 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=24V$ to $34V, I_O=40mA$ | - | - | 280 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=29V, I_O=1$ to $40mA$ | - | - | 90 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=29V, I_O=1$ to $100mA$ | - | - | 180 | mV |
| Quiescent Current | I_Q | $V_{IN}=29V, I_O=0mA$ | - | 2.3 | 7 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=29V, I_O=1mA$ | - | 1.2 | - | mV/°C |
| 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} | $V_{IN}=29V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 250 | - | μV |
| NJM78L24A | | | | | | |
| Output Voltage | V_O | $V_{IN}=33V, I_O=40mA$ | 22.8 | 24 | 25.2 | V |
| Line Regulation 1 | ΔV_O-V_{IN1} | $V_{IN}=27V$ to $38V, I_O=40mA$ | - | - | 350 | mV |
| Line Regulation 2 | ΔV_O-V_{IN2} | $V_{IN}=28V$ to $38V, I_O=40mA$ | - | - | 300 | mV |
| Load Regulation 1 | ΔV_O-I_{O1} | $V_{IN}=33V, I_O=1$ to $40mA$ | - | - | 100 | mV |
| Load Regulation 2 | ΔV_O-I_{O2} | $V_{IN}=33V, I_O=1$ to $100mA$ | - | - | 200 | mV |
| Quiescent Current | I_Q | $V_{IN}=33V, I_O=0mA$ | - | 2.3 | 7 | mA |
| Average Temperature Coefficient of Output Voltage | $\Delta V_O/\Delta T$ | $V_{IN}=33V, I_O=1mA$ | - | 1.4 | - | mV/°C |
| 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} | $V_{IN}=33V, BW=10Hz$ to $100kHz, I_O=40mA$ | - | 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) V_O Rank

(3) The end of A.D.

(4) Production Mouth

Oct. ...X

Nov. ...Y

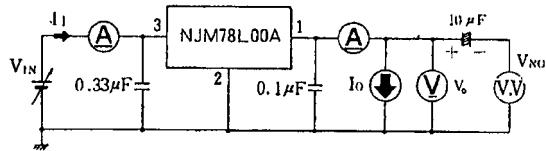
Dec. ...Z

| | | |
|-----------|---|---|
| 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 |

NJM78L00

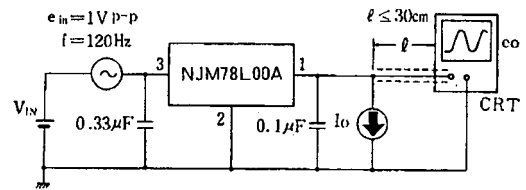
■ TEST CIRCUIT

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



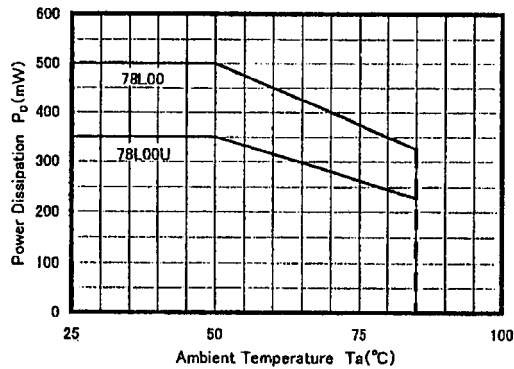
○ Measurement is to be conducted in pulse testing.
 ○ $I_Q = I_1 - I_o$

2. Ripple Rejection



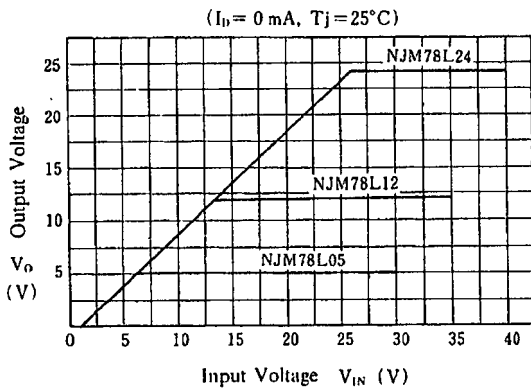
$$RR = 20 \log_{10} \left(\frac{e_{in}}{e_o} \right) \text{ (dB)}$$

■ AMBIENT TEMPERATURE VS. POWER DISSIPATION

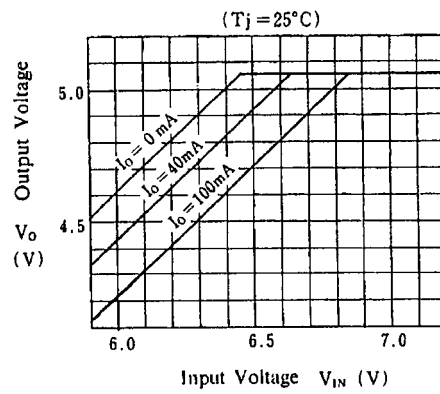


■ TYPICAL CHARACTERISTICS

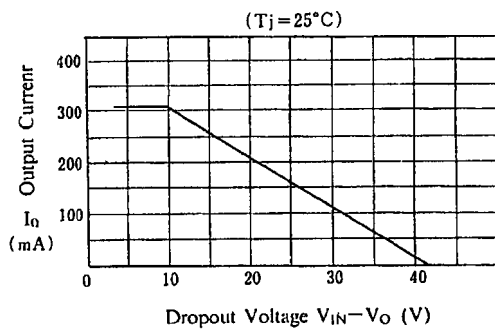
NJM78L05 / L12 / L24
Output Characteristics



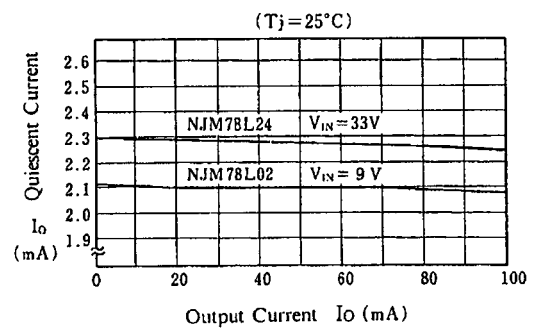
NJM78L05 Dropout Characteristics



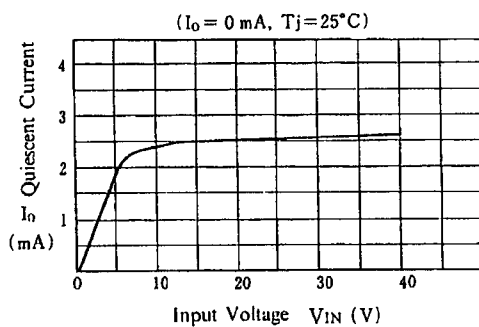
NJM78L00 Series Short Circuit
Output Current



NJM78L02 / L24 Quiescent Current
vs. Output Current



NJM78L05 Quiescent Current
vs. Input Voltage

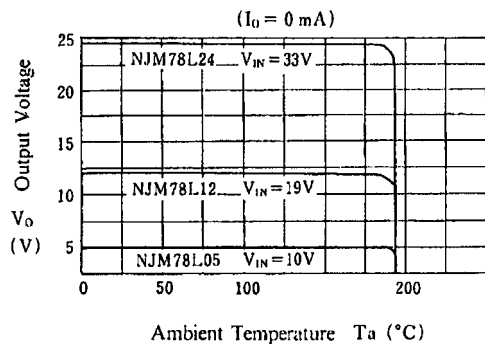


NJM78L00

■ TYPICAL CHARACTERISTICS

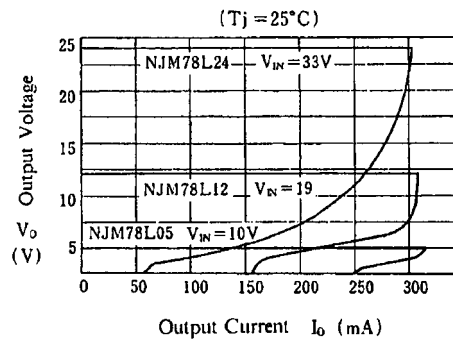
NJM78L05 / L12 / L24

Thermal Shutdown Characteristics

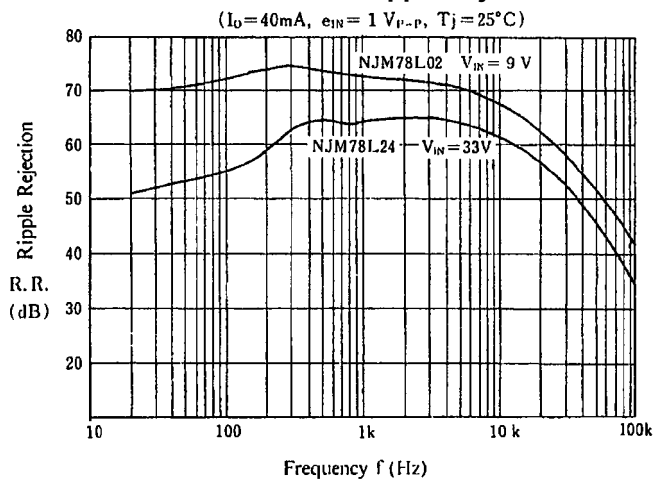


NJM78L05 / L12 / L24

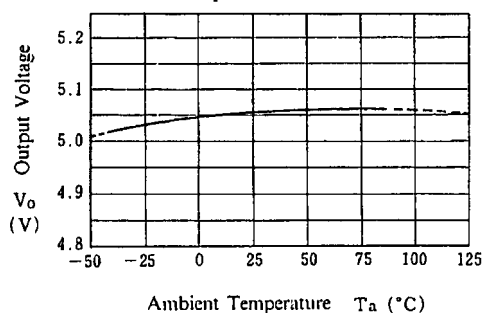
Load Characteristics



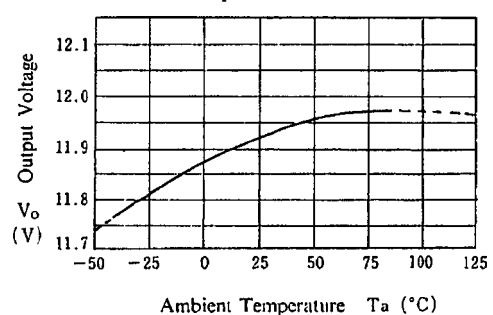
NJM78L02 / L24 Ripple Rejection



NJM78L05 Output Voltage vs. Temperature



NJM78L12 Output Voltage vs. Temperature





[CAUTION]

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