# SOT-89 Three-terminal positive voltage regulator

## FEATURES

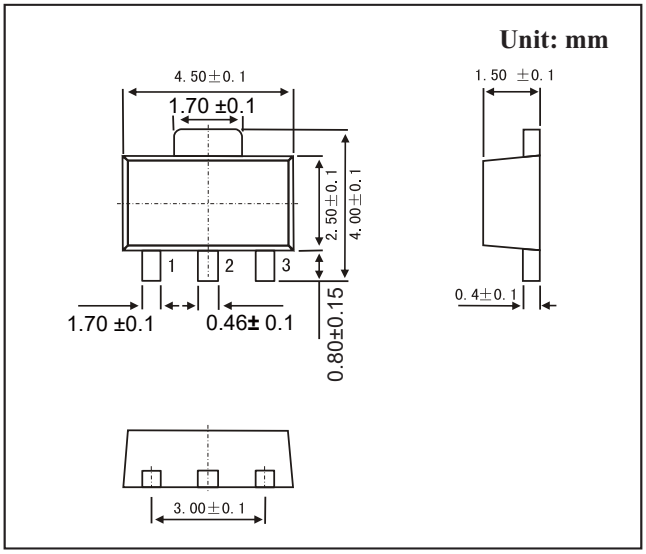
Maximum output current IOM: 0.1A
Output voltage VO: 9V

Continuous total dissipation

$P_D$: 0.6 W ( T a = 25 ℃ )

## MECHANICAL DATA

- Case: SOT-89Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any




## ABSOLUTE MAXIMUM RATINGS

(Operating temperature range applies unless otherw ise specified)

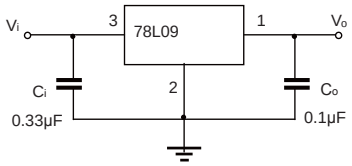
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Input Voltage | $V_i$ | 30 | V |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 166.7 | ℃/W |
| Operating Junction Temperature Range | $T_{OPR}$ | -25~+125 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -65~+150 | ℃ |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE
(Vi=16V,Io=40mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

| Pa rameter | Symbol | Test conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Output voltage | Vo | | 25℃ | 8.64 | 9.0 | 9.36 | V |
| | | 12V≤$V_I$≤24V, Io=1mA-40mA | 0-125℃ | 8.55 | 9.0 | 9.45 | V |
| | | Io=1mA-70mA | | 8.55 | 9.0 | 9.45 | V |
| Load Regulation | △Vo | Io=1mA-100mA | 25℃ | | 19 | 90 | mV |
| | | Io=1mA-40mA | 25℃ | | 11 | 40 | mV |
| Line regulation | △Vo | 12V≤$V_I$≤24V | 25℃ | | 45 | 175 | mV |
| | | 13V≤$V_I$≤24V | 25℃ | | 40 | 125 | mV |
| Quiescent Current | Iq | | 25℃ | | 4.1 | 6.0 | mA |
| Quiescent Current Change | △Iq | 13V≤$V_I$≤24V | 0-125℃ | | | 1.5 | mA |
| | △Iq | 1mA≤$I_O$≤40mA | 0-125℃ | | | 0.1 | mA |
| Output Noise Voltage | $V_N$ | 10Hz≤f≤100KHz | 25℃ | 58 | | | μV/Vo |
| Ripple Rejection | RR | 15V≤$V_I$≤25V,f=120Hz | 0-125℃ | | 45 | | dB |
| Dropout Voltage | Vd | | 25℃ | | 1.7 | | V |

* Pulse test.

**TYPICA L APPLICATION**

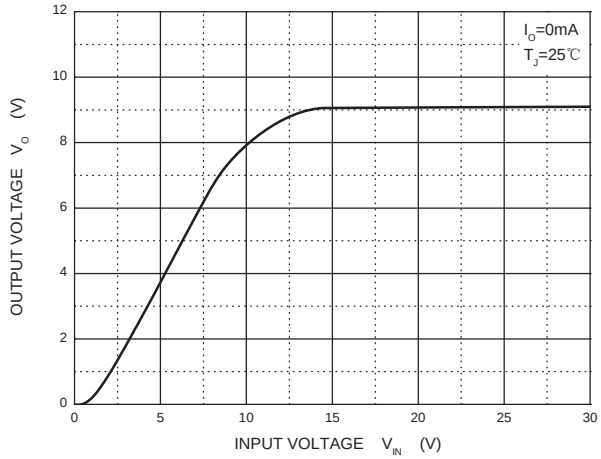



Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

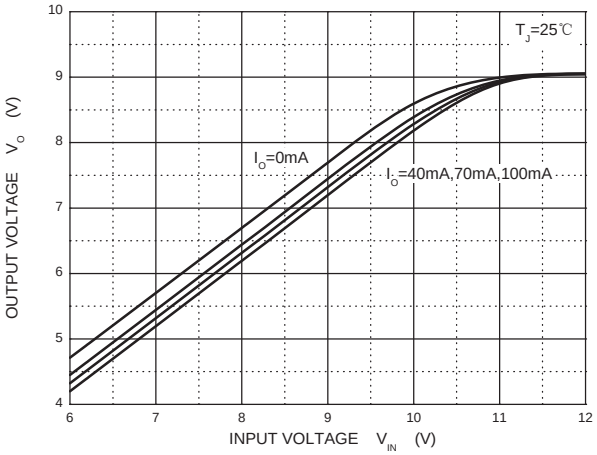
# RATINGS AND CHARACTERISTIC CURVES

## Typical Characteristics

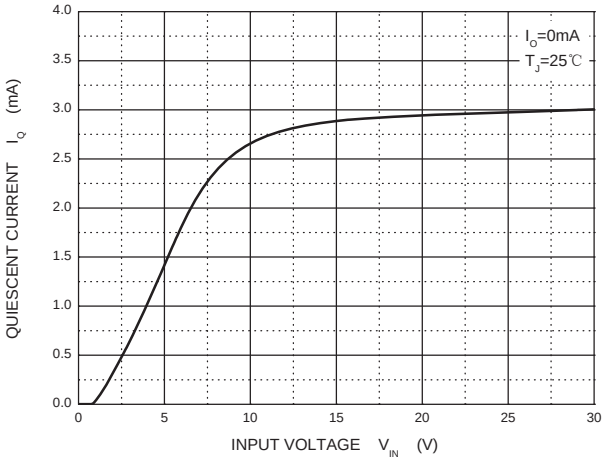
**Output Characteristics**



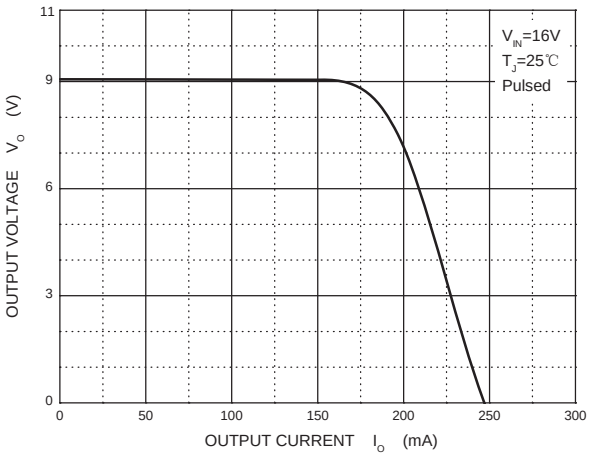

**Dropout Characteristics**



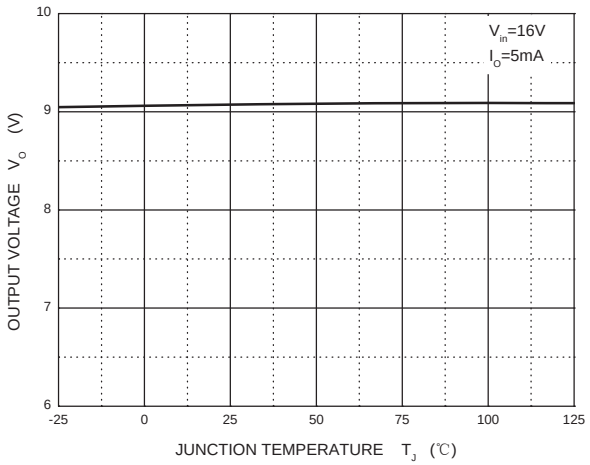

**Quiescent Current vs Input Voltage**




**Current Cut-off Grid Voltage**




**Output Voltage vs Junction Temperature**




**Power Derating Curve**