

Three-terminal positive voltage regulator

FEATURES

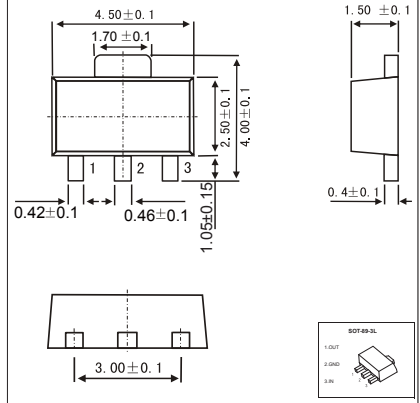
- Maximum output current I_{OM}: 0.1A
- Output voltage V_O: 8V
- Continuous total dissipation

PD: 0.6 W (T_a = 25 °C)

MECHANICAL DATA

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

SOT-89-3L



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|------------------|----------|------|
| Input Voltage | V _i | 30 | V |
| Thermal Resistance from Junction to Ambient | R _{θJA} | 166.7 | °C/W |
| Operating Junction Temperature Range | T _{OPR} | -25~+125 | °C |
| Storage Temperature Range | T _{STG} | -65~+150 | °C |

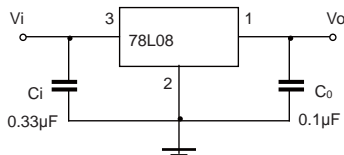
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

(V_i=14V, I_o=40mA, C_i=0.33μF, C_o=0.1μF, unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|--------------------------|-----------------|---------------------------------------|---|-----|-----|-------------------|---|
| Output voltage | V _o | 25°C | 7.7 | 8.0 | 8.3 | V | |
| | | 0-125°C | 10.5V ≤ V _i ≤ 23V, I _o = 1mA ~ 40mA | 7.6 | 8.0 | 8.4 | V |
| | | | I _o = 1mA ~ 70mA | 7.6 | 8.0 | 8.4 | V |
| Load Regulation | ΔV _o | I _o = 1mA ~ 100mA | 25°C | 18 | 80 | mV | |
| | | I _o = 1mA ~ 40mA | 25°C | 10 | 40 | mV | |
| Line regulation | ΔV _o | 10.5V ≤ V _i ≤ 23V | 25°C | 42 | 175 | mV | |
| | | 11V ≤ V _i ≤ 23V | 25°C | 36 | 125 | mV | |
| Quiescent Current | I _q | 25°C | | 4 | 6 | mA | |
| Quiescent Current Change | ΔI _q | 11V ≤ V _i ≤ 23V | 0-125°C | | 1.5 | mA | |
| | | 1mA ≤ I _o ≤ 40mA | 0-125°C | | 0.1 | mA | |
| Output Noise Voltage | V _N | 10Hz ≤ f ≤ 100KHz | 25°C | 54 | | μV/V _o | |
| Ripple Rejection | RR | 13V ≤ V _i ≤ 23V, f = 120Hz | 0-125°C | 37 | 46 | dB | |
| Dropout Voltage | V _d | 25°C | | 1.7 | | V | |

* Pulse test.

TYPICAL APPLICATION

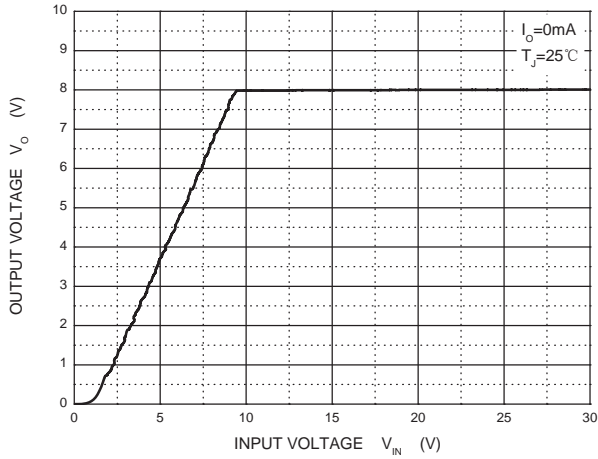


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

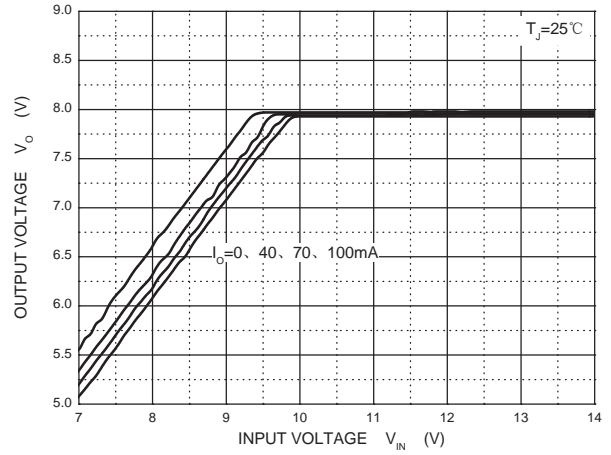
RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

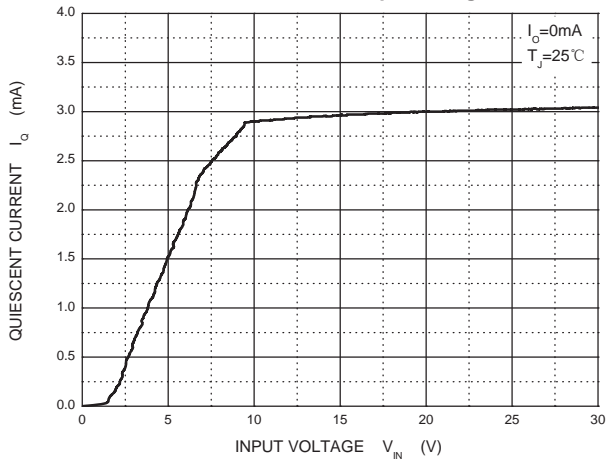
Output Characteristics



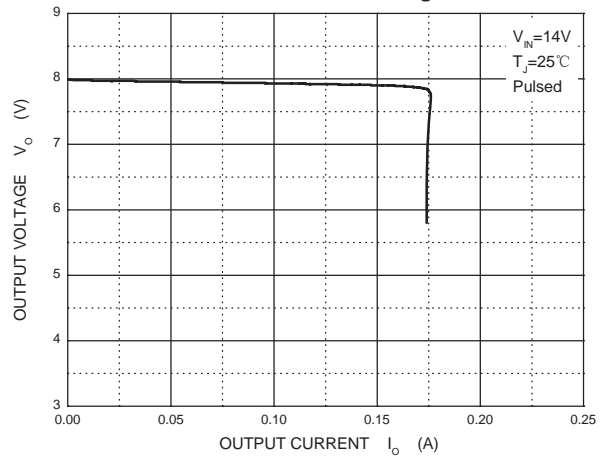
Dropout Characteristics



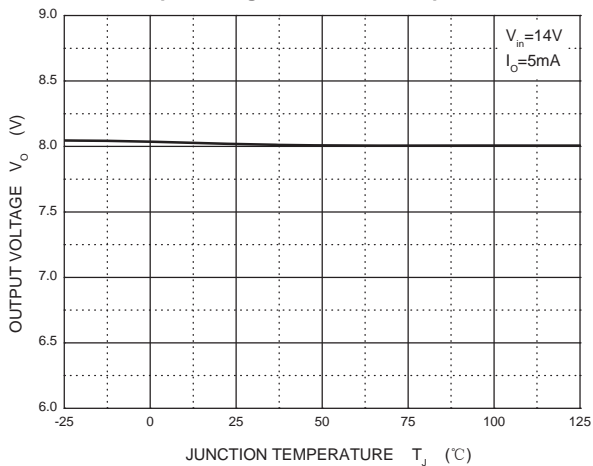
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve

