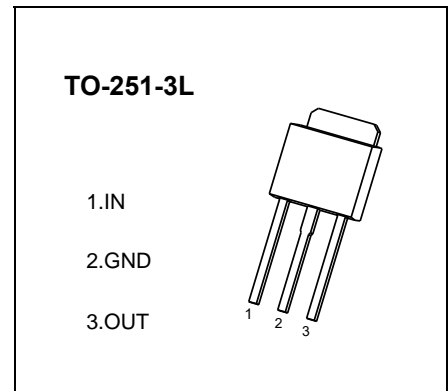


TO-251-3L Plastic-Encapsulate Voltage Regulator

CJ78M08 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 I_{OM} : 0.5 A
- Output voltage
 V_O : 8V
- Continuous total dissipation
 P_D : 1.25 W ($T_a = 25^\circ\text{C}$)



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

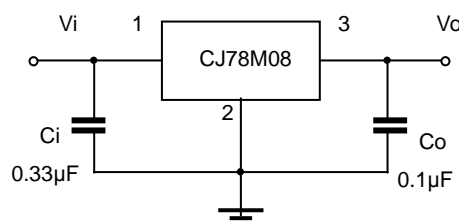
| Parameter | Symbol | Value | Unit |
|---|-----------------|----------|--------------------|
| Input Voltage | V_i | 35 | V |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 80 | $^\circ\text{C/W}$ |
| Operating Junction Temperature Range | T_{OPR} | -25~+125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65~+150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=14\text{V}, I_o=350\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------|--------------|---|--------------------------|-----|-----|-------------------|
| Output Voltage | V_o | 25°C | 7.7 | 8 | 8.3 | V |
| | | $10.5\text{V} \leq V_i \leq 23\text{V}, I_o=5\text{mA}-350\text{mA}$ | -25-125 $^\circ\text{C}$ | 7.6 | 8 | 8.4 |
| Load Regulation | ΔV_o | $I_o=5\text{mA}-500\text{mA}$ | 25°C | 20 | 160 | mV |
| | | $I_o=5\text{mA}-200\text{mA}$ | 25°C | 10 | 80 | mV |
| Line Regulation | ΔV_o | $10.5\text{V} \leq V_i \leq 25\text{V}, I_o=200\text{mA}$ | 25°C | 6 | 100 | mV |
| | | $11\text{V} \leq V_i \leq 25\text{V}, I_o=200\text{mA}$ | 25°C | 2 | 50 | mV |
| Quiescent Current | I_q | 25°C | | 4.6 | 6 | mA |
| Quiescent Current Change | ΔI_q | $10.5\text{V} \leq V_i \leq 25\text{V}, I_o=200\text{mA}$ | -25-125 $^\circ\text{C}$ | | 0.8 | mA |
| | | $5\text{mA} \leq I_o \leq 350\text{mA}$ | -25-125 $^\circ\text{C}$ | | 0.5 | mA |
| Output Noise Voltage | V_N | $10\text{Hz} \leq f \leq 100\text{kHz}$ | 25°C | 52 | | $\mu\text{V}/V_o$ |
| Ripple Rejection | RR | $11.5\text{V} \leq V_i \leq 21.5\text{V}, f=120\text{Hz}, I_o=300\text{mA}$ | -25-125 $^\circ\text{C}$ | 56 | 80 | dB |
| Dropout Voltage | V_d | $I_o=350\text{mA}$ | 25°C | 2 | | V |
| Short Circuit Current | I_{sc} | $V_i=14\text{V}$ | 25°C | 250 | | mA |
| Peak Current | I_{pk} | 25°C | | 0.5 | | A |

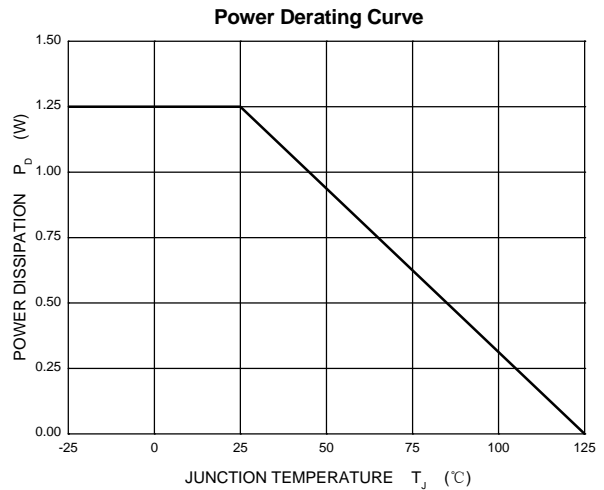
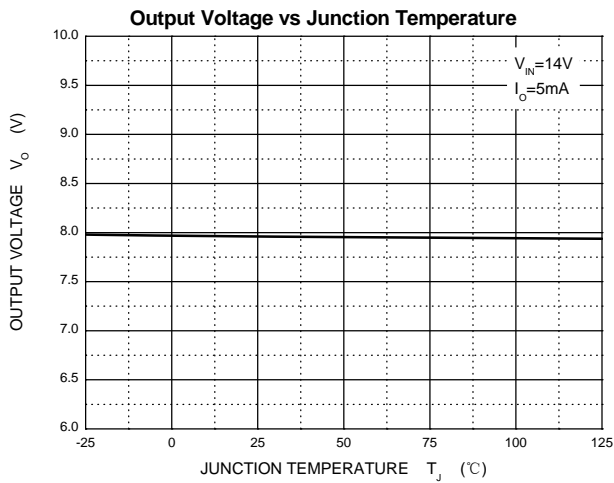
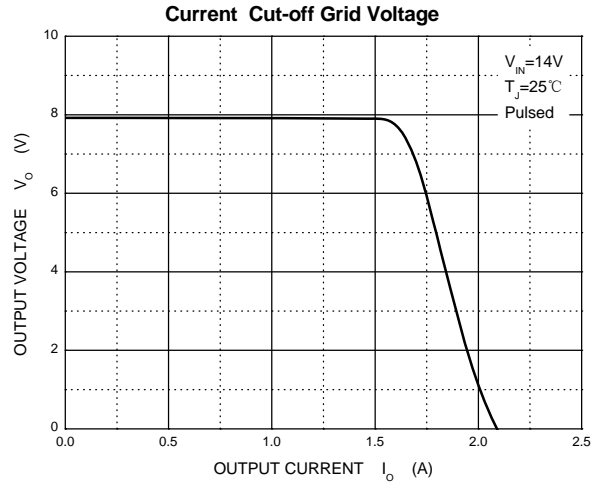
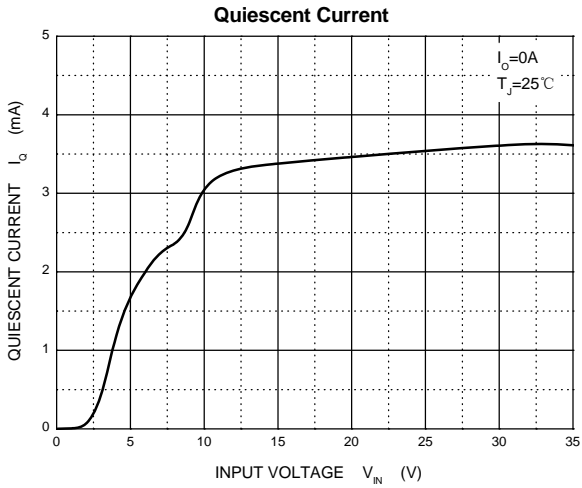
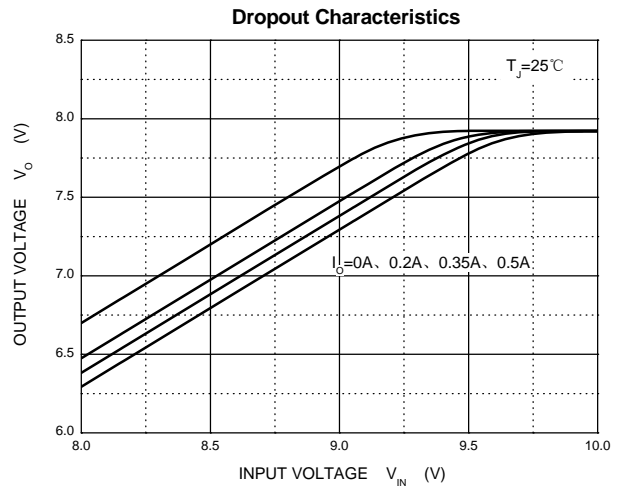
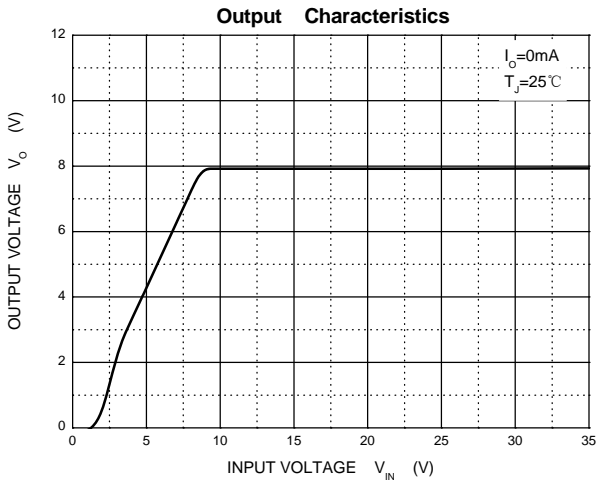
* Pulse test.

TYPICAL APPLICATION

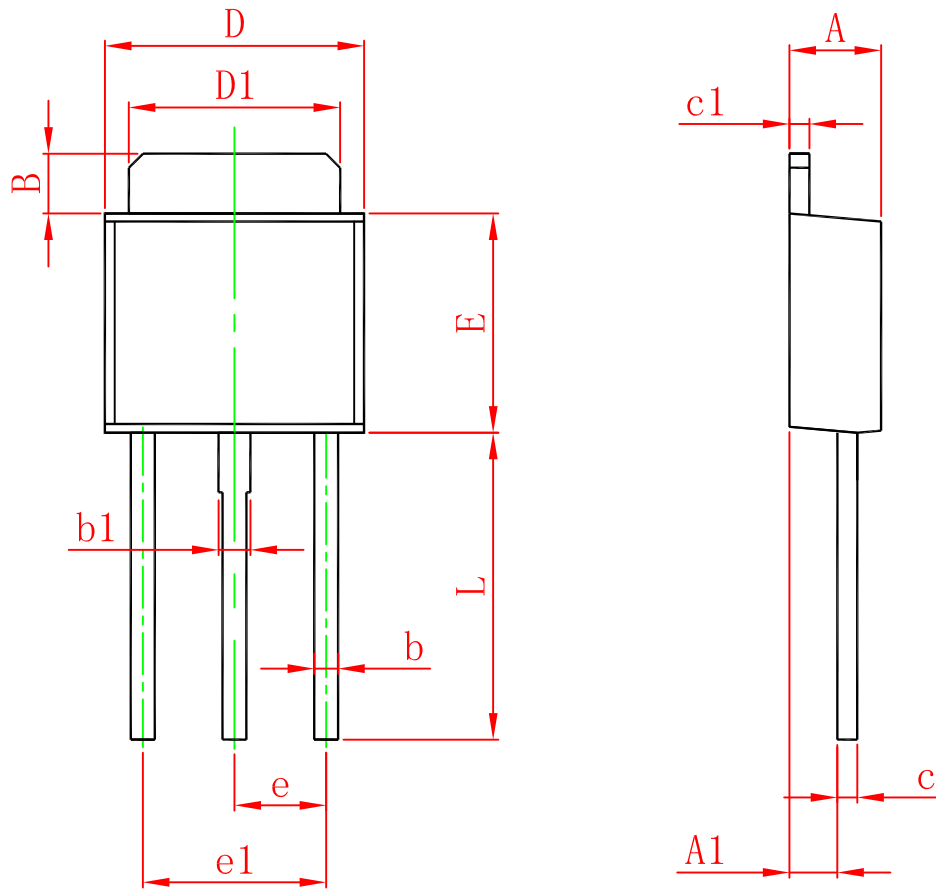


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics



TO-251-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.200 | 2.400 | 0.087 | 0.094 |
| A1 | 1.050 | 1.350 | 0.042 | 0.054 |
| B | 1.350 | 1.650 | 0.053 | 0.065 |
| b | 0.500 | 0.700 | 0.020 | 0.028 |
| b1 | 0.700 | 0.900 | 0.028 | 0.035 |
| c | 0.430 | 0.580 | 0.017 | 0.023 |
| c1 | 0.430 | 0.580 | 0.017 | 0.023 |
| D | 6.350 | 6.650 | 0.250 | 0.262 |
| D1 | 5.200 | 5.400 | 0.205 | 0.213 |
| E | 5.400 | 5.700 | 0.213 | 0.224 |
| e | 2.300 TYP. | | 0.091 TYP. | |
| e1 | 4.500 | 4.700 | 0.177 | 0.185 |
| L | 7.500 | 7.900 | 0.295 | 0.311 |