



TO-251/TO-252-2L Plastic-Encapsulate Transistors

CJ78M09 Three-terminal positive voltage regulator

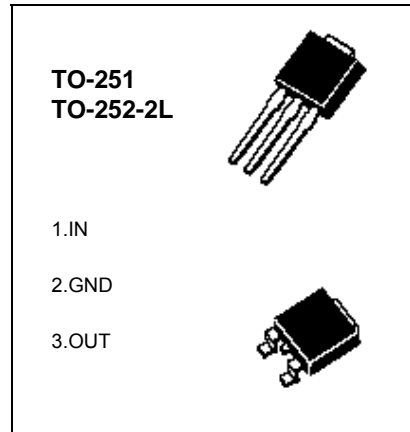
FEATURES

Maximum Output current

I_{OM} : 0.5 A

Output voltage

V_o : 9V



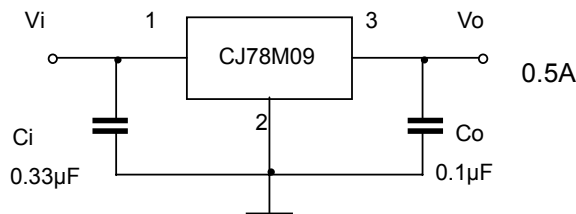
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------|----------|------|
| Input Voltage | V_i | 35 | V |
| Operating Junction Temperature Range | T_{OPR} | 0-+125 | °C |
| Storage Temperature Range | T_{STG} | -65-+150 | °C |

ELECTRICAL CHARACTERISTICS($V_i=16V, I_o=350mA, 0^\circ C < T_j < 125^\circ C, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------|--------------|--|------|-----|------|---------|
| Output voltage | V_o | $T_j=25^\circ C$ | 8.65 | 9 | 9.35 | V |
| | | $11.5V \leq V_i \leq 24V, I_o=5mA-350mA$ $P_o \leq 15W$ | 8.55 | 9 | 9.45 | V |
| Load Regulation | ΔV_o | $T_j=25^\circ C, I_o=5mA-500mA$ | | 20 | 180 | mV |
| | | $T_j=25^\circ C, I_o=5mA-200mA$ | | 10 | 90 | mV |
| Line regulation | ΔV_o | $11.5V \leq V_i \leq 26V, I_o=200mA$ | | 6 | 100 | mV |
| | | $12V \leq V_i \leq 26V, I_o=200mA$ | | 2 | 50 | mV |
| Quiescent Current | I_q | $T_j=25^\circ C$ | | 4.6 | 6 | mA |
| Quiescent Current Change | ΔI_q | $11.5V \leq V_i \leq 26V, I_o=200mA$ | | | 0.8 | mA |
| | ΔI_q | $5mA \leq I_o \leq 350mA$ | | | 0.5 | mA |
| Output Noise Voltage | V_N | $10Hz \leq f \leq 100KHz$ | | 60 | | μV |
| Ripple Rejection | RR | $13 \leq V_i \leq 23V, f=120Hz, I_o=300mA$ $T_j=25^\circ C$ | | 56 | 80 | dB |
| Dropout Voltage | V_d | $T_j=25^\circ C, I_o=350mA$ | | 2 | | V |
| Short Circuit Current | I_{sc} | $V_i=16V, T_a=25^\circ C$ | | 250 | | mA |
| Peak Current | I_{pk} | $T_j=25^\circ C$ | | 0.7 | | A |

TYPICAL APPLICATION



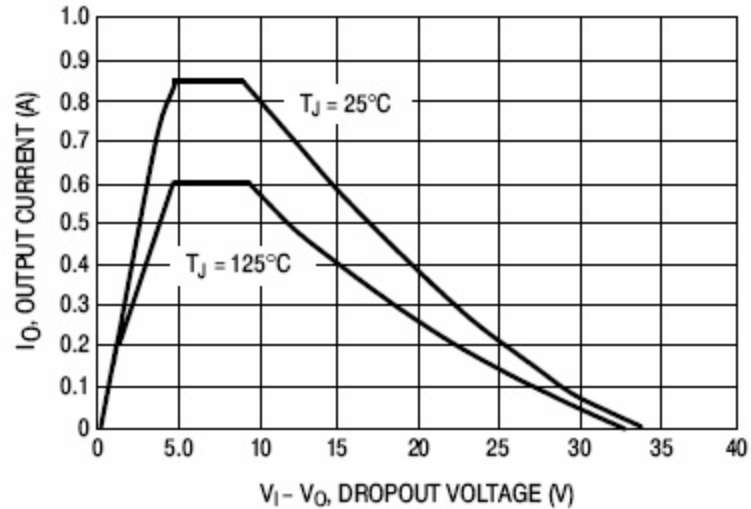


Figure 1. Peak Output Current versus Dropout Voltage

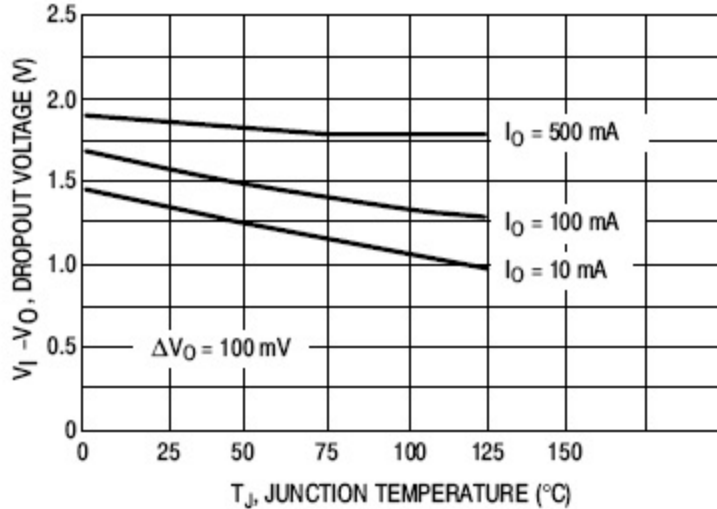


Figure 2. Dropout Voltage versus Junction Temperature

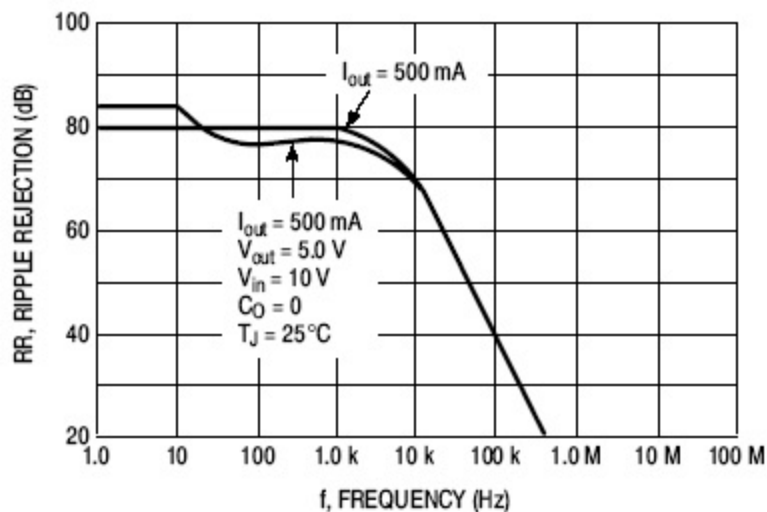


Figure 3. Ripple Rejection versus Frequency

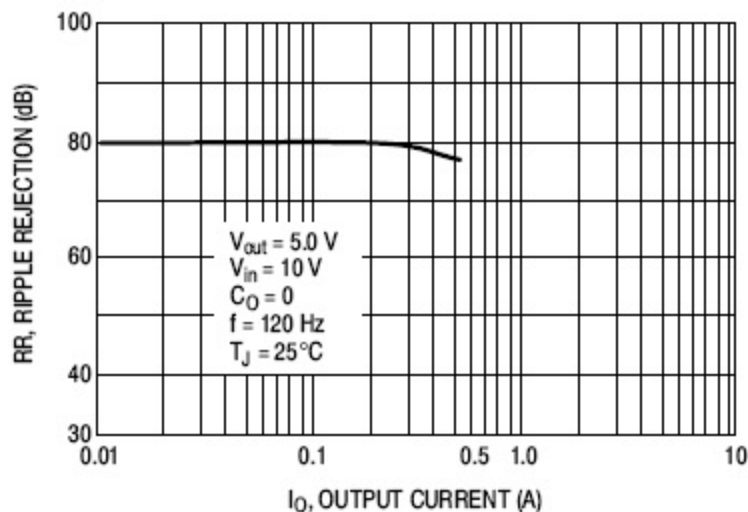


Figure 4. Ripple Rejection versus Output Current

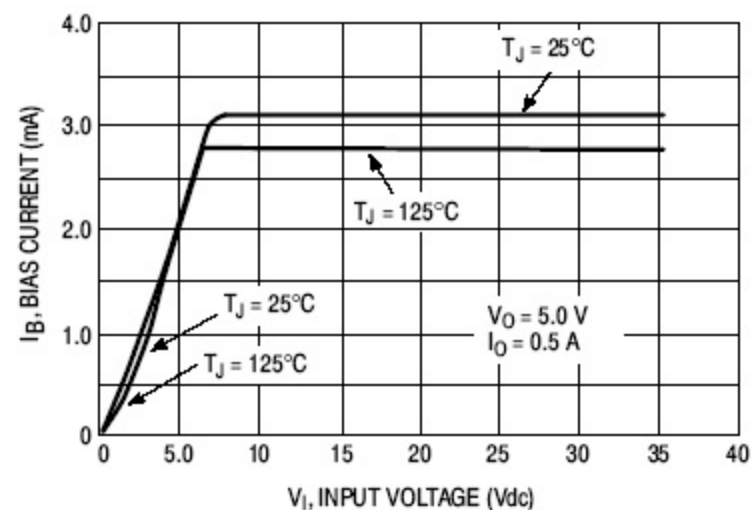


Figure 5. Bias Current versus Input Voltage

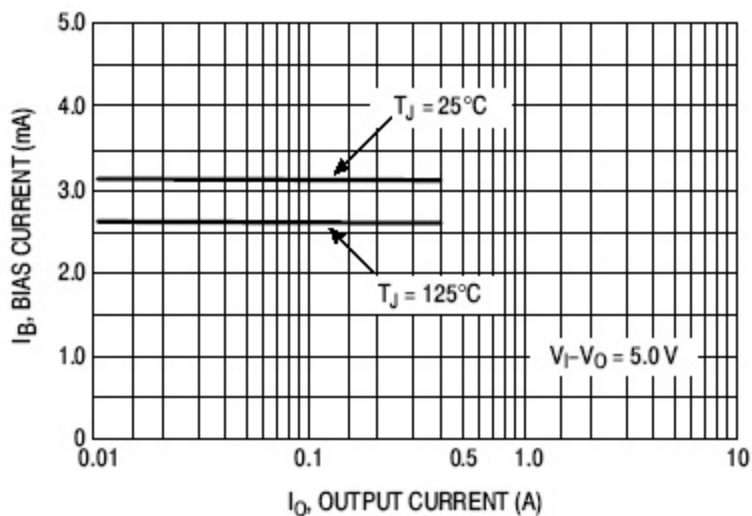


Figure 6. Bias Current versus Output Current