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78M09 Three-terminal positive voltage regulator

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

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客户确认：

公司签章：

| 部门 | 工程部 | 品保部 | 采购部 |
|----|-----|-----|-----|
| 签名 | | | |
| 日期 | | | |

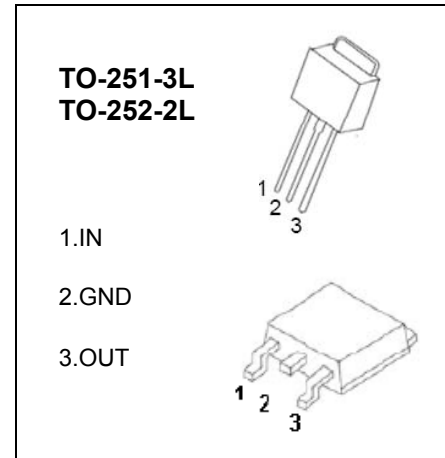


TO-251-3L/TO-252-2L Plastic-Encapsulate Regulators

78M09 Three-terminal positive voltage regulator

FEATURES

- Maximum output current I_{OM} : 0.5 A
- Output voltage V_o : 9V
- Continuous total dissipation
 P_D : 1.25 W ($T_a = 25^\circ\text{C}$)



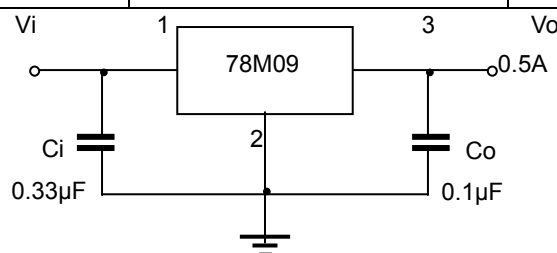
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------|----------|------------------|
| Input Voltage | V_i | H5 | V |
| Operating Junction Temperature Range | T_{OPR} | 0-+125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65-+150 | $^\circ\text{C}$ |

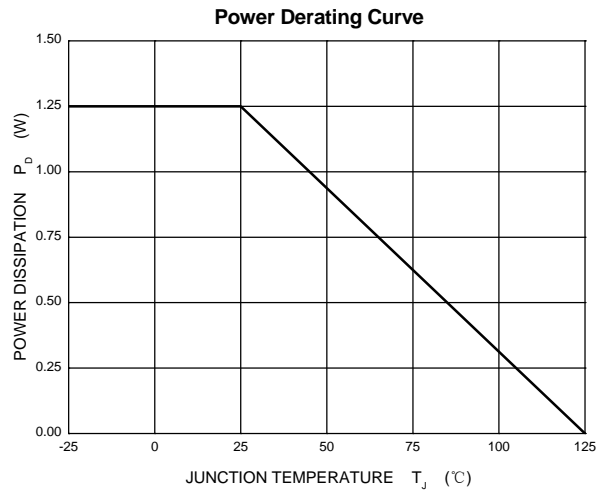
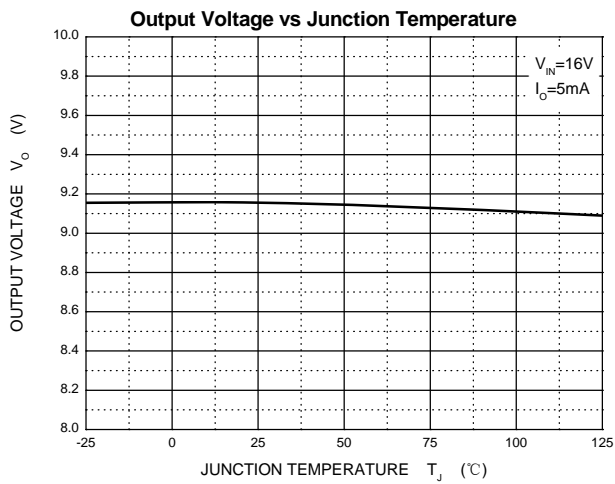
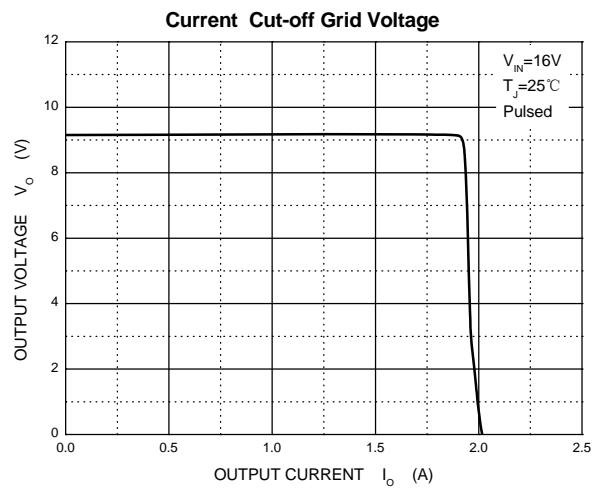
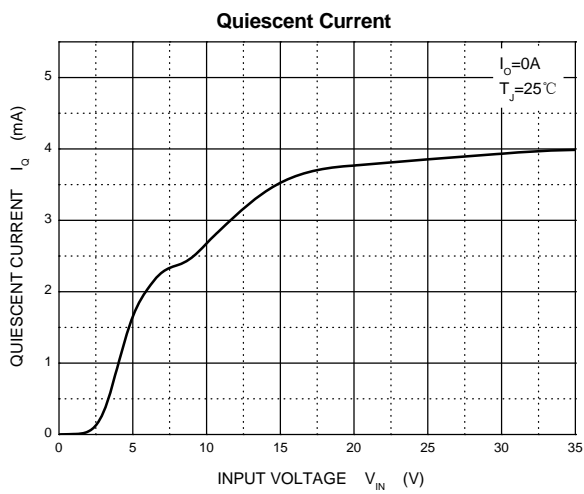
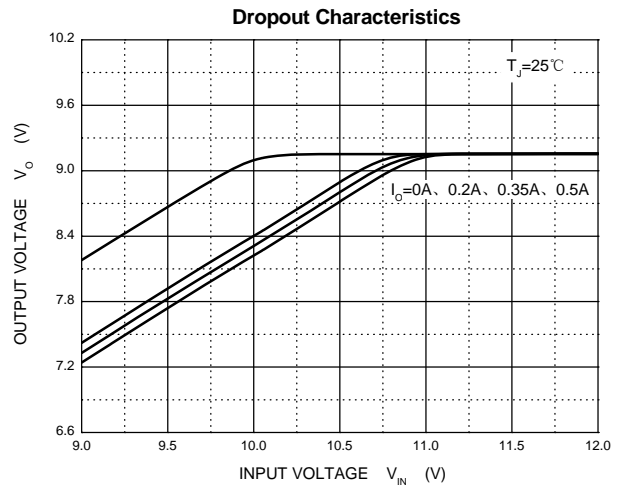
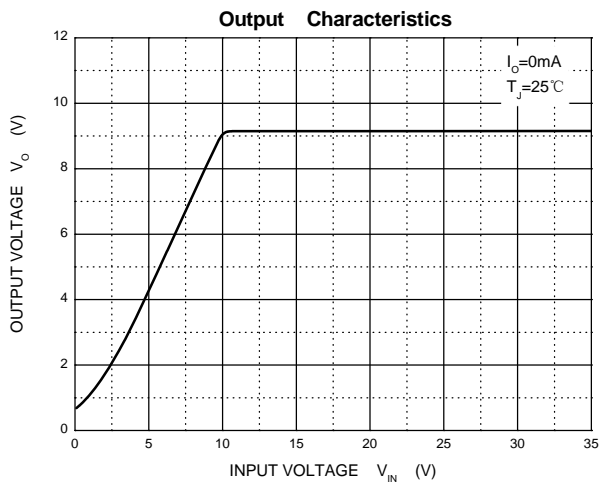
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=16\text{V}$, $I_o=350\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------|--------------|--|------------------------|------|------|---------------|
| Output Voltage | V_o | 25°C | 8.65 | 9 | 9.35 | V |
| | | $11.5\leq V_i\leq 24\text{V}$, $I_o=5\text{mA}-350\text{mA}$, $P_o\leq 15\text{W}$ | 0-125 $^\circ\text{C}$ | 8.55 | 9 | 9.45 |
| Load Regulation | ΔV_o | $I_o=5\text{mA}-500\text{mA}$ | 25°C | 20 | 180 | mV |
| | | $I_o=5\text{mA}-200\text{mA}$ | 25°C | 10 | 90 | mV |
| Line Regulation | ΔV_o | $11.5\leq V_i\leq 26\text{V}$, $I_o=200\text{mA}$ | 25°C | 6 | 100 | mV |
| | | $12\text{V}\leq V_i\leq 26\text{V}$, $I_o=200\text{mA}$ | 25°C | 2 | 50 | mV |
| Quiescent Current | I_q | | 25°C | 4.6 | 6 | mA |
| Quiescent Current Change | ΔI_q | $11.5\leq V_i\leq 26\text{V}$, $I_o=200\text{mA}$ | 0-125 $^\circ\text{C}$ | | 0.8 | mA |
| | ΔI_q | $5\text{mA}\leq I_o\leq 350\text{mA}$ | 0-125 $^\circ\text{C}$ | | 0.5 | mA |
| Output Noise Voltage | V_N | $10\text{Hz}\leq f\leq 100\text{KHz}$ | 25°C | 60 | | μV |
| Ripple Rejection | RR | $13\leq V_i\leq 23\text{V}$, $f=120\text{Hz}$, $I_o=300\text{mA}$ | 0-125 $^\circ\text{C}$ | 56 | 80 | dB |
| Dropout Voltage | V_d | $I_o=350\text{mA}$ | 25°C | 2 | | V |
| Short Circuit Current | I_{sc} | $V_i=16\text{V}$ | 25°C | 250 | | mA |
| Peak Current | I_{pk} | | 25°C | 0.5 | | A |

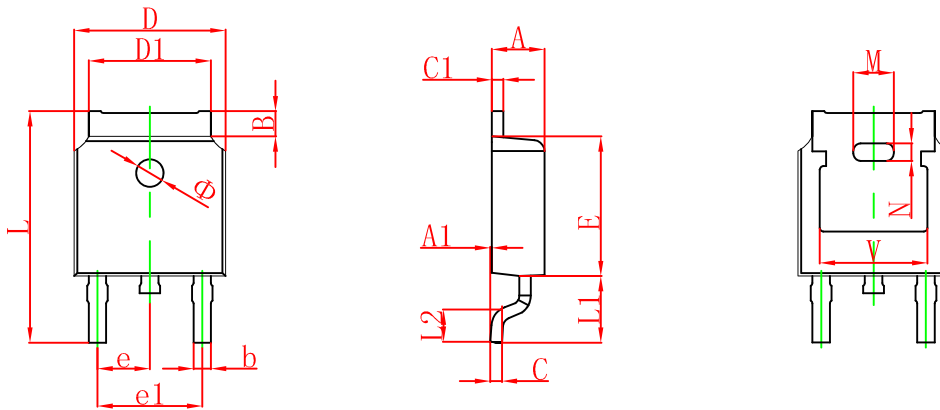
TYPICAL APPLICATION



Typical Characteristics

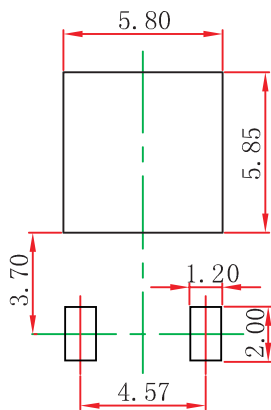


TO-252(4R)-2L Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.200 | 2.380 | 0.087 | 0.094 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| B | 0.800 | 1.400 | 0.031 | 0.055 |
| b | 0.710 | 0.810 | 0.028 | 0.032 |
| c | 0.460 | 0.560 | 0.018 | 0.022 |
| c1 | 0.460 | 0.560 | 0.018 | 0.022 |
| D | 6.500 | 6.700 | 0.256 | 0.264 |
| D1 | 5.130 | 5.460 | 0.202 | 0.215 |
| E | 6.000 | 6.200 | 0.236 | 0.244 |
| e | 2.286 TYP. | | 0.090 TYP. | |
| e1 | 4.327 | 4.727 | 0.170 | 0.186 |
| M | 1.778REF. | | 0.070REF. | |
| N | 0.762REF. | | 0.018REF. | |
| L | 9.800 | 10.400 | 0.386 | 0.409 |
| L1 | 2.9REF. | | 0.114REF. | |
| L2 | 1.400 | 1.700 | 0.055 | 0.067 |
| V | 4.830 REF. | | 0.190 REF. | |
| Φ | 1.100 | 1.300 | 0.043 | 0.051 |

TO-252(4R)-2L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.