

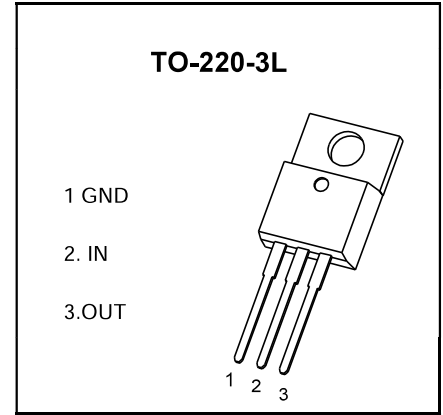


**TO-220-3L Plastic-Encapsulate Voltage Regulator**

**7909** Three-terminal negative voltage regulator

**FEATURES**

- Maximum output current  
 $I_{OM}: 1.5\text{ A}$
- Output voltage  
 $V_O: -9\text{ V}$
- Continuous total dissipation  
 $P_D: 1.5\text{ W}$  ( $T_a = 25\text{ }^\circ\text{C}$ )



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

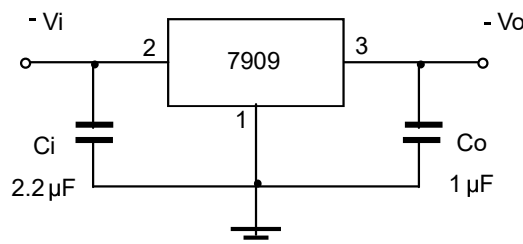
| Parameter                               | Symbol          | Value    | Unit                      |
|---|-----------------|----------|---------------------------|
| Input Voltage                           | $V_i$           | -35      | V                         |
| Thermal Resistance from Junction to Air | $R_{\theta JA}$ | 83.3     | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range    | $T_{OPR}$       | -40~+125 | $^\circ\text{C}$          |
| Storage Temperature Range               | $T_{STG}$       | -65~+150 | $^\circ\text{C}$          |

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i = -15\text{ V}, I_o = 500\text{ mA}, C_i = 2.2\text{ }\mu\text{F}, C_o = 1\text{ }\mu\text{F}$ , unless otherwise specified)**

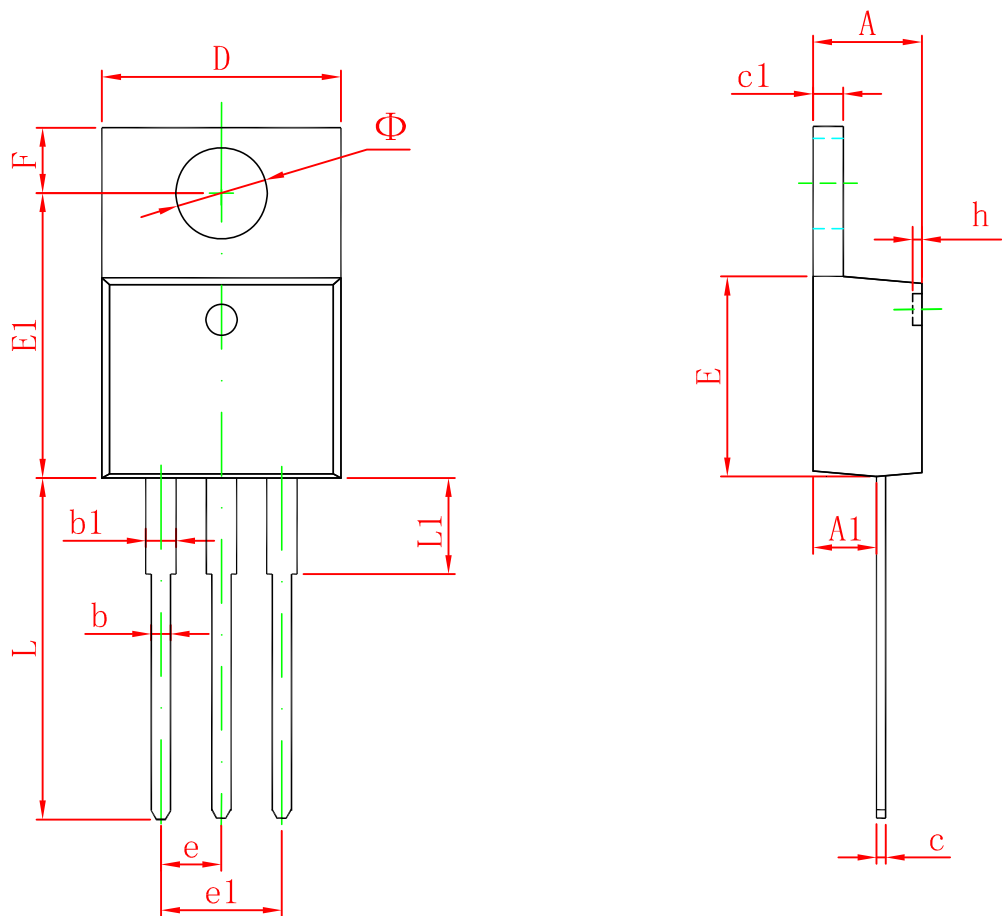
| Parameter                | Symbol       | Test conditions   | Min                        | Typ   | Max   | Unit  |
|--------------------------|--------------|---|----------------------------|-------|-------|-------|
| Output Voltage           | $V_o$        | $25\text{ }^\circ\text{C}$  | -8.64                      | -9    | -9.36 | V     |
|                          |              | $-11.5\text{ V} \leq V_i \leq -24\text{ V}, I_o = 5\text{ mA} - 1\text{ A}$ | 0-125 $^\circ\text{C}$     | -8.55 | -9    | -9.45 |
| Load Regulation          | $\Delta V_o$ | $I_o = 5\text{ mA} - 1.5\text{ A}$  | $25\text{ }^\circ\text{C}$ |       | 180   | mV    |
|                          |              | $I_o = 250\text{ mA} - 750\text{ mA}$                                       | $25\text{ }^\circ\text{C}$ |       | 80    | mV    |
| Line Regulation          | $\Delta V_o$ | $-11.5\text{ V} \leq V_i \leq -26\text{ V}$                                 | $25\text{ }^\circ\text{C}$ |       | 140   | mV    |
|                          |              | $-13\text{ V} \leq V_i \leq -19\text{ V}$                                   | $25\text{ }^\circ\text{C}$ |       | 70    | mV    |
| Quiescent Current        | $I_q$        | $25\text{ }^\circ\text{C}$  |                            | 1.6   | 2.6   | mA    |
| Quiescent Current Change | $\Delta I_q$ | $-11.5\text{ V} \leq V_i \leq -26\text{ V}$                                 | 0-125 $^\circ\text{C}$     |       | 1     | mA    |
|                          | $\Delta I_q$ | $5\text{ mA} \leq I_o \leq 1\text{ A}$                                      | 0-125 $^\circ\text{C}$     |       | 0.5   | mA    |
| Ripple Rejection         | RR           | $-11.5\text{ V} \leq V_i \leq -21.5\text{ V}, f = 120\text{ Hz}$            | 0-125 $^\circ\text{C}$     | 54    | 60    | dB    |
| Dropout Voltage          | $V_d$        | $I_o = 1\text{ A}$  | $25\text{ }^\circ\text{C}$ | 1.1   |       | V     |
| Peak Current             | $I_{pk}$     | $25\text{ }^\circ\text{C}$  |                            | 2.1   |       | A     |

\* Pulse test.

**TYPICAL APPLICATION**



# TO-220-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 4.470                     | 4.670  | 0.176                | 0.184 |
| A1     | 2.520                     | 2.820  | 0.099                | 0.111 |
| b      | 0.710                     | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.310                     | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| D      | 10.010                    | 10.310 | 0.394                | 0.406 |
| E      | 8.500                     | 8.900  | 0.335                | 0.350 |
| E1     | 12.060                    | 12.460 | 0.475                | 0.491 |
| e      | 2.540 TYP                 |        | 0.100 TYP            |       |
| e1     | 4.980                     | 5.180  | 0.196                | 0.204 |
| F      | 2.590                     | 2.890  | 0.102                | 0.114 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 13.400                    | 13.800 | 0.528                | 0.543 |
| L1     | 3.560                     | 3.960  | 0.140                | 0.156 |
| $\Phi$ | 3.735                     | 3.935  | 0.147                | 0.155 |