

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

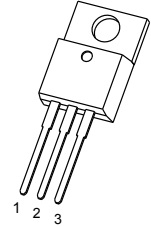
### CJ7908 Three-terminal negative voltage regulator

#### FEATURES

- Maximum output current  
 $I_{OM}$ : 1.5 A
- Output voltage  
 $V_O$ : -8V
- Continuous total dissipation  
 $P_D$ : 1.5 W ( $T_a = 25^\circ\text{C}$ )

TO-220-3L

1. GND  
2. IN  
3. OUT



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

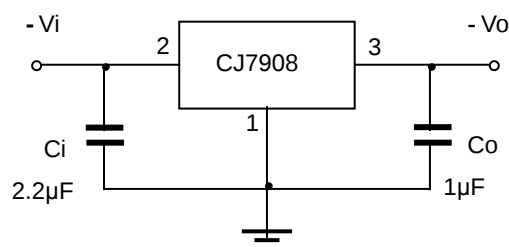
| Parameter                               | Symbol          | Value    | Unit               |
|-----------------------------------------|-----------------|----------|--------------------|
| Input Voltage                           | $V_i$           | -35      | V                  |
| Thermal Resistance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

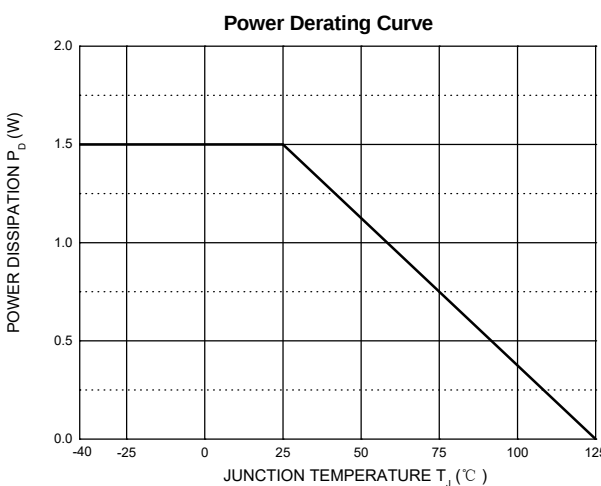
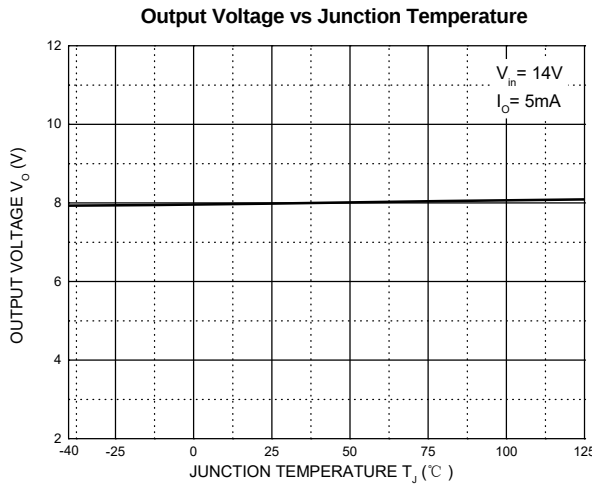
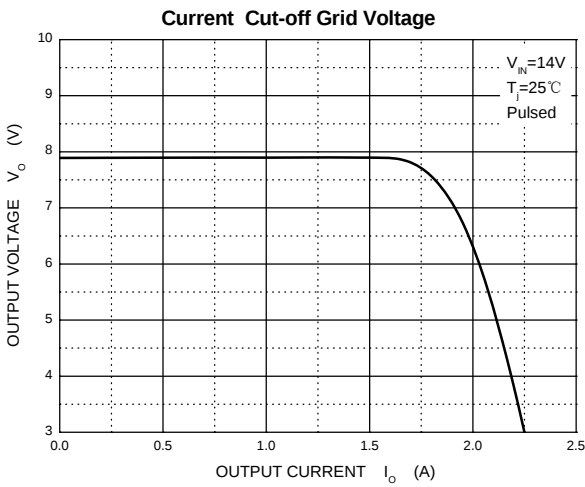
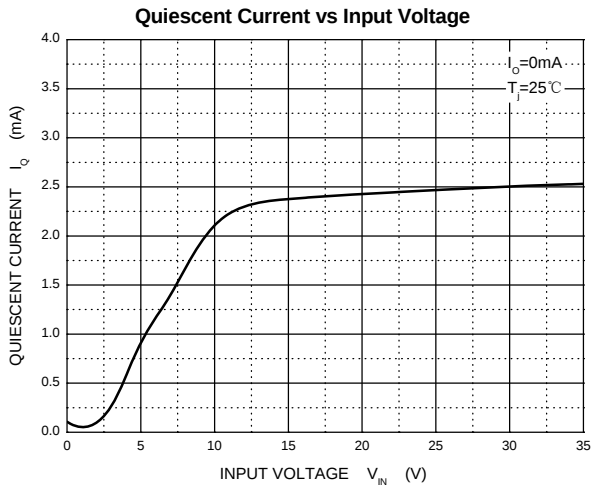
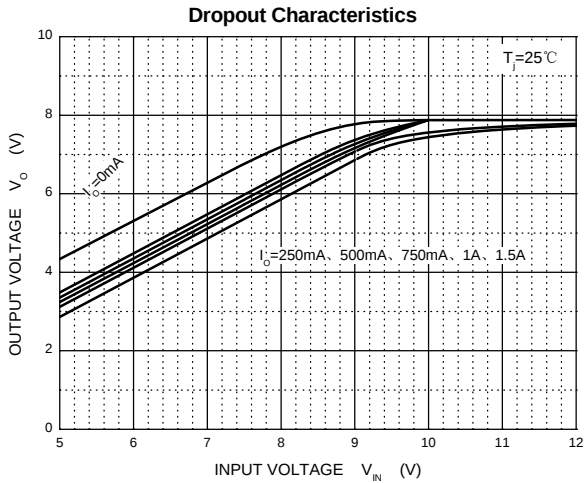
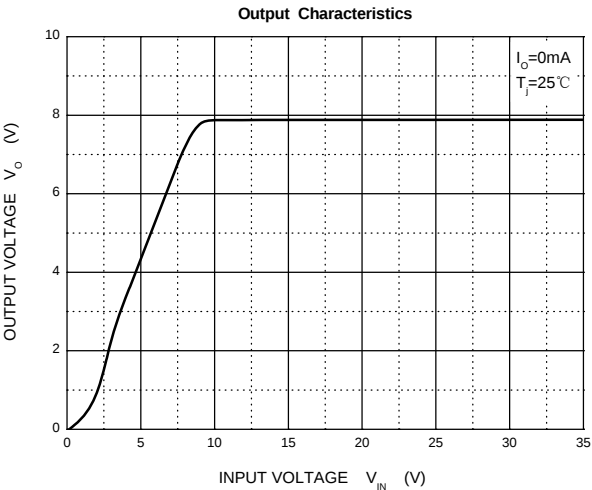
#### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i = -14\text{V}$ , $I_o = 500\text{mA}$ , $C_i = 2.2\mu\text{F}$ , $C_o = 1\mu\text{F}$ , unless otherwise specified)

| Parameter                | Symbol                  | Test conditions                                                               | Min   | Typ  | Max   | Unit                       |
|--------------------------|-------------------------|-------------------------------------------------------------------------------|-------|------|-------|----------------------------|
| Output Voltage           | $V_o$                   | $T_J = 25^\circ\text{C}$                                                      | -7.76 | -8   | -8.24 | V                          |
|                          |                         | $-10.5\text{V} \leq V_i \leq -23\text{V}$ , $I_o = 5\text{mA} \sim 1\text{A}$ | -7.6  | -8   | -8.4  | V                          |
| Load Regulation          | $\Delta V_o$            | $I_o = 5\text{mA} \sim 1.5\text{A}$ , $T_J = 25^\circ\text{C}$                |       | 15   | 160   | mV                         |
|                          |                         | $I_o = 250\text{mA} \sim 750\text{mA}$ , $T_J = 25^\circ\text{C}$             |       | 5    | 80    | mV                         |
| Line Regulation          | $\Delta V_o$            | $-10.5\text{V} \leq V_i \leq -25\text{V}$ , $T_J = 25^\circ\text{C}$          |       | 12.5 | 160   | mV                         |
|                          |                         | $-11\text{V} \leq V_i \leq -17\text{V}$ , $T_J = 25^\circ\text{C}$            |       | 4    | 80    | mV                         |
| Quiescent Current        | $I_q$                   | $T_J = 25^\circ\text{C}$                                                      |       | 1.5  | 2     | mA                         |
| Quiescent Current Change | $\Delta I_q$            | $-10.5\text{V} \leq V_i \leq -25\text{V}$                                     |       |      | 1     | mA                         |
|                          | $\Delta I_q$            | $5\text{mA} \leq I_o \leq 1\text{A}$                                          |       |      | 0.5   | mA                         |
| Output Noise Voltage     | $V_N$                   | $10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_J = 25^\circ\text{C}$            |       | 200  |       | $\mu\text{V}/V_o$          |
| Output Voltage drift     | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$                                                            |       | -0.6 |       | $\text{mV}/^\circ\text{C}$ |
| Ripple Rejection         | RR                      | $-11.5\text{V} \leq V_i \leq -21.5\text{V}$ , $f = 120\text{Hz}$              | 54    | 60   |       | dB                         |
| Dropout Voltage          | $V_d$                   | $I_o = 1\text{A}$ , $T_J = 25^\circ\text{C}$                                  |       | 1.1  |       | V                          |
| Peak Current             | $I_{pk}$                | $T_J = 25^\circ\text{C}$                                                      |       | 2.1  |       | A                          |

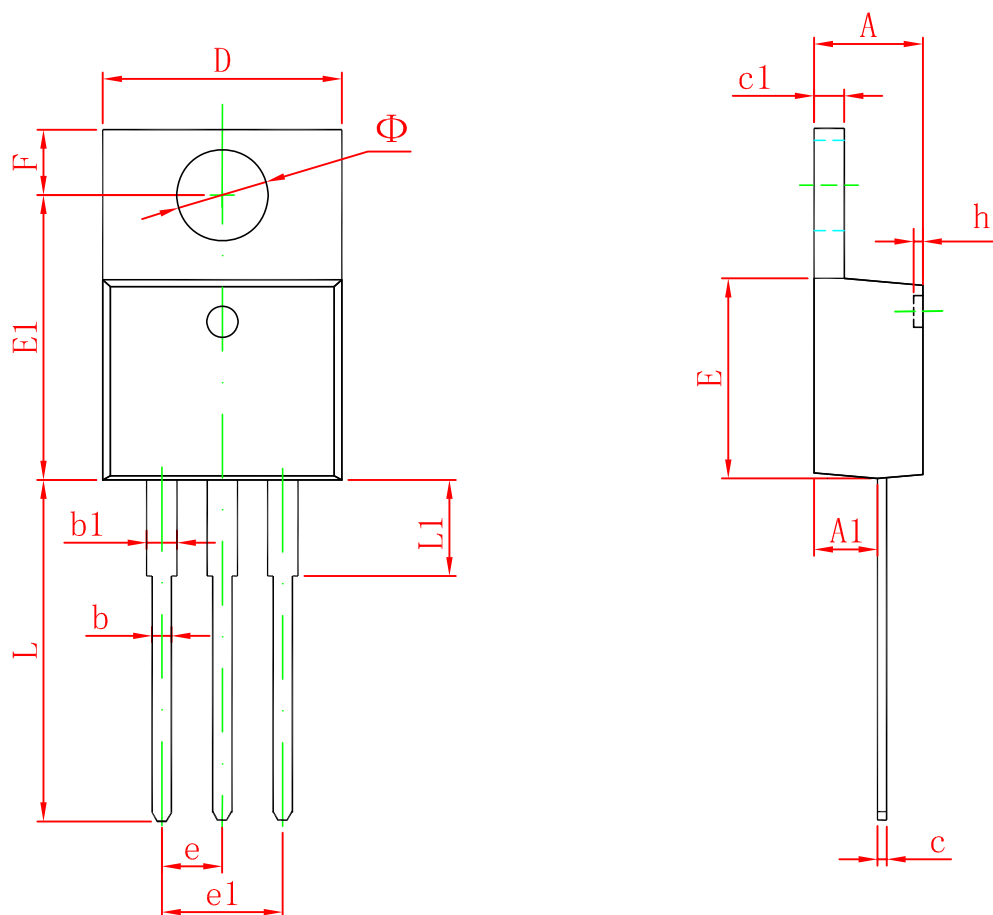
\* Pulse test.

#### 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 |

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