



# JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## TO-220 Plastic-Encapsulate Voltage Regulator

**CJ7809** Three-terminal positive voltage regulator

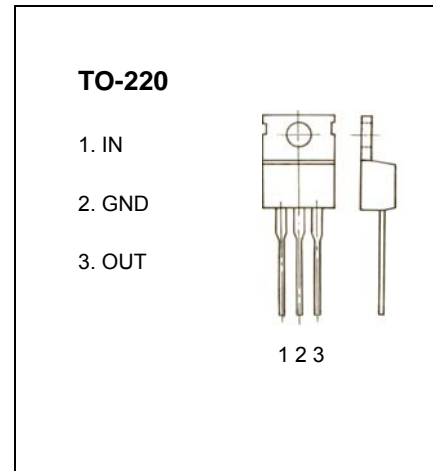
### FEATURES

Maximum Output current  $I_{OM}$ : 1.5 A

Output voltage  $V_o$ : 9 V

Continuous total dissipation

$P_D$ : 2 W ( $T_J = 25^\circ\text{C}$ )



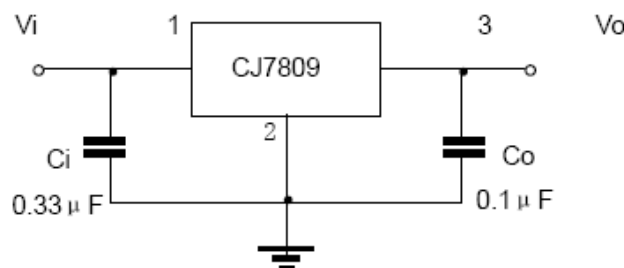
### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter                            | Symbol          | Value   | Unit                      |
|--------------------------------------|-----------------|---------|---------------------------|
| Input Voltage                        | $V_i$           | 35      | V                         |
| Thermal resistance junction-air      | $R_{\theta JA}$ | 65      | $^\circ\text{C}/\text{W}$ |
| Thermal resistance junction-cases    | $R_{\theta JC}$ | 5       | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range | $T_{OPR}$       | 0-150   | $^\circ\text{C}$          |
| Storage Temperature Range            | $T_{STG}$       | -65-150 | $^\circ\text{C}$          |

### ELECTRICAL CHARACTERISTICS ( $V_i=16\text{V}, I_o=500\text{mA}, 0^\circ\text{C}<T_J<125^\circ\text{C}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified )

| Parameter                | Symbol                | Test conditions   | MIN  | TYP | MAX  | UNIT                       |
|--------------------------|-----------------------|---|------|-----|------|----------------------------|
| Output voltage           | $V_o$                 | $T_J=25^\circ\text{C}$  | 8.65 | 9   | 9.35 | V                          |
|                          |                       | $11.5\text{V}\leq V_i\leq 24\text{V}, I_o=5\text{mA}-1\text{A}, P\leq 15\text{W}$ | 8.55 | 9   | 9.45 | V                          |
| Load Regulation          | $\Delta V_o$          | $T_J=25^\circ\text{C}, I_o=5\text{mA}-1.5\text{A}$                                |      | 12  | 180  | mV                         |
|                          |                       | $T_J=25^\circ\text{C}, I_o=250\text{mA}-750\text{mA}$                             |      | 4   | 90   | mV                         |
| Line regulation          | $\Delta V_o$          | $11.5\text{V}\leq V_i\leq 27\text{V}, T_J=25^\circ\text{C}$                       |      | 7   | 180  | mV                         |
|                          |                       | $13\text{V}\leq V_i\leq 19\text{V}, T_J=25^\circ\text{C}$                         |      | 2   | 90   | mV                         |
| Quiescent Current        | $I_q$                 | $T_J=25^\circ\text{C}$  |      | 4.3 | 8    | mA                         |
| Quiescent Current Change | $\Delta I_q$          | $11.5\text{V}\leq V_i\leq 27\text{V}$   |      |     | 1    | mA                         |
|                          |                       | $5\text{mA}\leq I_o\leq 1\text{A}$  |      |     | 0.5  | mA                         |
| Output voltage drift     | $\Delta V_o/\Delta T$ | $I_o=5\text{mA}$  |      | -1  |      | $\text{mV}/^\circ\text{C}$ |
| Output Noise Voltage     | $V_N$                 | $10\text{Hz}\leq f\leq 100\text{KHz}$   |      | 58  |      | $\mu\text{V}$              |
| Ripple Rejection         | RR                    | $12\text{V}\leq V_i\leq 22\text{V}, f=120\text{Hz}, T_J=25^\circ\text{C}$         | 55   | 70  |      | dB                         |
| Dropout Voltage          | $V_d$                 | $T_J=25^\circ\text{C}, I_o=1\text{A}$   |      | 2   |      | V                          |
| Output resistance        | $R_o$                 | $f=1\text{KHz}$   |      | 15  |      | $\text{m}\Omega$           |
| Short Circuit Current    | $I_{sc}$              | $T_J=25^\circ\text{C}$  |      | 400 |      | mA                         |
| Peak Current             | $I_{pk}$              | $T_J=25^\circ\text{C}$  |      | 2.2 |      | A                          |

### TYPICAL APPLICATION



# Typical Characteristics

CJ7809

