

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

### CJ7805 Three-terminal positive voltage regulator

#### FEATURES

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

Output voltage  $V_o$ : 5V

Continuous total dissipation

$P_D$ : 1.5 W ( $T_a = 25^\circ\text{C}$ )

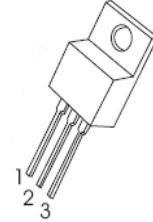
15 W ( $T_c = 25^\circ\text{C}$ )

TO-220-3L

1.IN

2.GND

3.OUT



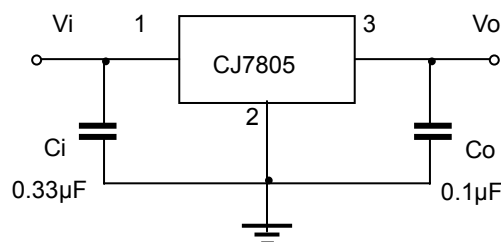
#### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

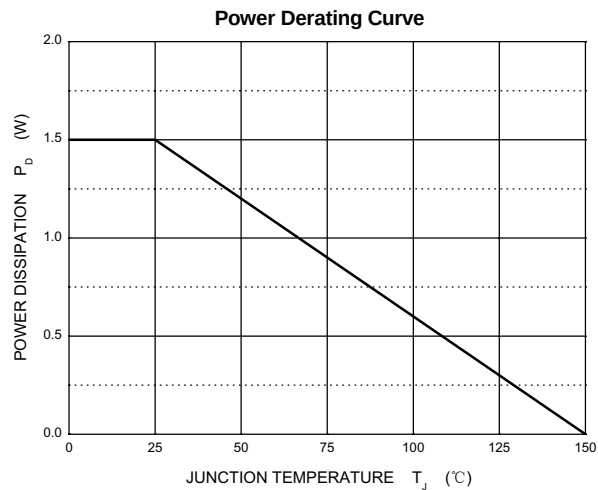
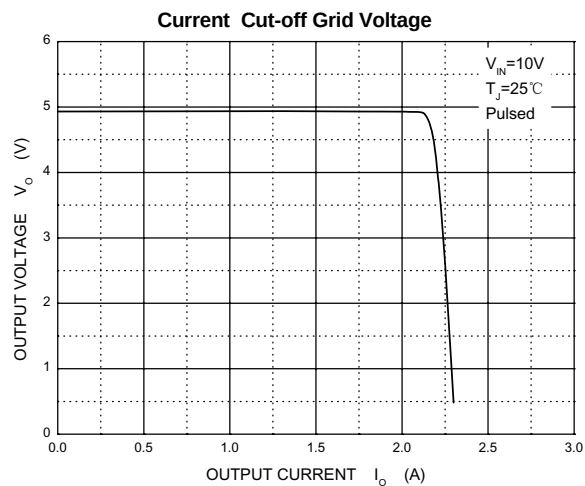
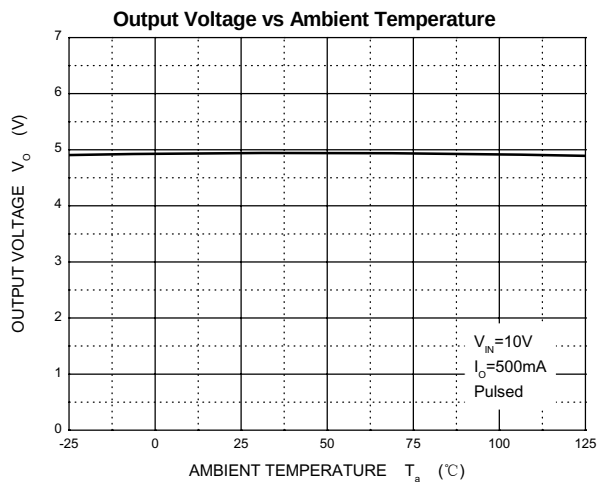
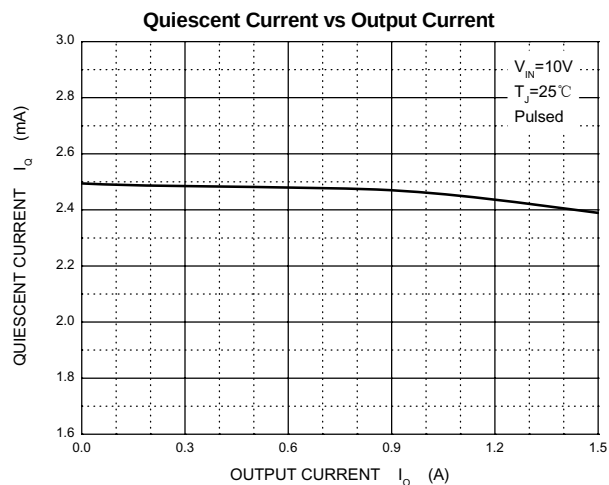
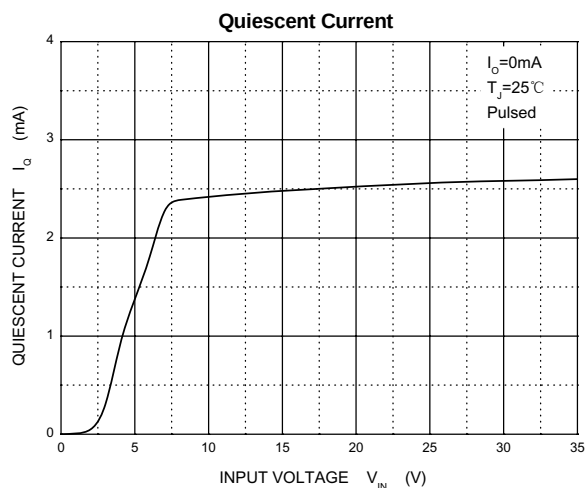
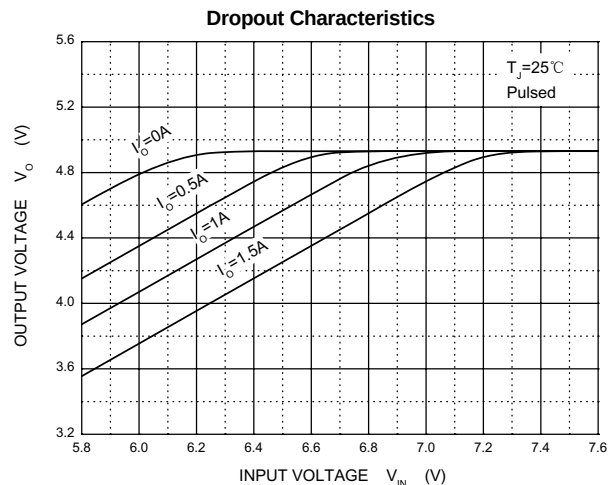
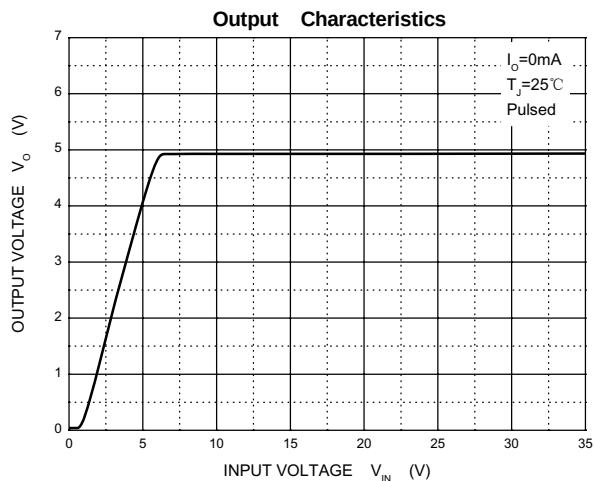
| Parameter                                   | Symbol          | Value    | Unit               |
|---------------------------------------------|-----------------|----------|--------------------|
| Input Voltage                               | $V_i$           | 35       | V                  |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 83.3     | $^\circ\text{C/W}$ |
| Thermal Resistance from Junction to Case    | $R_{\theta JC}$ | 8.3      | $^\circ\text{C/W}$ |
| Operating Junction Temperature Range        | $T_{OPR}$       | 0~+150   | $^\circ\text{C}$   |
| Storage Temperature Range                   | $T_{STG}$       | -55~+150 | $^\circ\text{C}$   |

#### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=10\text{V}$ , $I_o=500\text{mA}$ , $C_i=0.33\mu\text{F}$ , $C_o=0.1\mu\text{F}$ , unless otherwise specified)

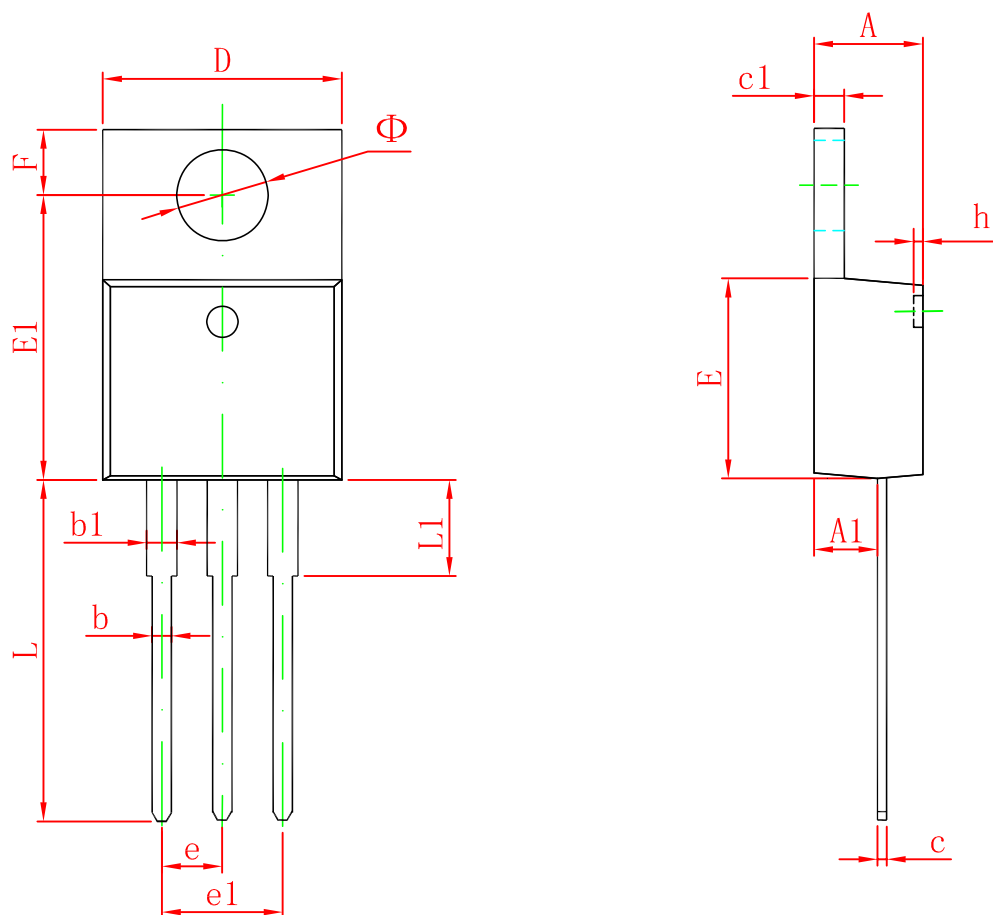
| Parameter                | Symbol                  | Test conditions                                                                         | Min  | Typ  | Max  | Unit                       |
|--------------------------|-------------------------|-----------------------------------------------------------------------------------------|------|------|------|----------------------------|
| Output voltage           | $V_o$                   | $25^\circ\text{C}$                                                                      | 4.8  | 5.0  | 5.2  | V                          |
|                          |                         | $7\text{V} \leq V_i \leq 20\text{V}$ , $I_o=5\text{mA}-1\text{A}$ , $P \leq 15\text{W}$ | 4.75 | 5.00 | 5.25 | V                          |
| Load Regulation          | $\Delta V_o$            | $I_o=5\text{mA}-1.5\text{A}$                                                            |      | 9    | 100  | mV                         |
|                          |                         | $I_o=250\text{mA}-750\text{mA}$                                                         |      | 4    | 50   | mV                         |
| Line regulation          | $\Delta V_o$            | $7\text{V} \leq V_i \leq 25\text{V}$                                                    |      | 4    | 100  | mV                         |
|                          |                         | $8\text{V} \leq V_i \leq 12\text{V}$                                                    |      | 1.6  | 50   | mV                         |
| Quiescent Current        | $I_q$                   | $25^\circ\text{C}$                                                                      |      | 5    | 8    | mA                         |
| Quiescent Current Change | $\Delta I_q$            | $7\text{V} \leq V_i \leq 25\text{V}$                                                    |      | 0.3  | 1.3  | mA                         |
|                          |                         | $5\text{mA} \leq I_o \leq 1\text{A}$                                                    |      | 0.03 | 0.5  | mA                         |
| Output Noise Voltage     | $V_N$                   | $10\text{Hz} \leq f \leq 100\text{KHz}$                                                 |      | 42   |      | $\mu\text{V}$              |
| Output voltage drift     | $\Delta V_o / \Delta T$ | $I_o=5\text{mA}$                                                                        |      | -1.1 |      | $\text{mV}/^\circ\text{C}$ |
| Ripple Rejection         | RR                      | $8\text{V} \leq V_i \leq 18\text{V}$ , $f=120\text{Hz}$                                 | 62   | 73   |      | dB                         |
| Dropout Voltage          | $V_d$                   | $I_o=1\text{A}$                                                                         |      | 2    |      | V                          |
| Output resistance        | $R_o$                   | $f=1\text{KHz}$                                                                         |      | 10   |      | $\text{m}\Omega$           |
| Short Circuit Current    | $I_{sc}$                | $25^\circ\text{C}$                                                                      |      | 230  |      | mA                         |
| Peak Current             | $I_{pk}$                | $25^\circ\text{C}$                                                                      |      | 2.2  |      | A                          |

#### 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 |
| Φ      | 3.735                     | 3.935  | 0.147                | 0.155 |