HFZT

# 7806

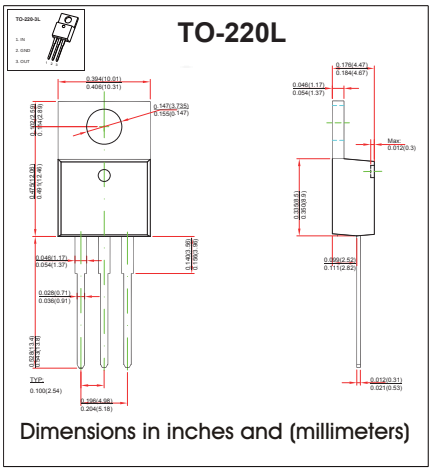
## Three-terminal positive voltage regulator

### FEATURES

- Maximum output current IOM:1.5 A
- Output voltage VO: 6V
- Continuous total dissipation PD: 1.5W

### MECHANICAL DATA

- Case: TO-220 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Input Voltage | $V_i$ | 35 | V |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 66.7 | ℃/W |
| Operating Junction Temperature Range | $T_{OPR}$ | -25~+125 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -65~+150 | ℃ |

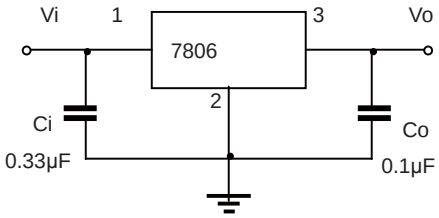
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE
(Vi=11V,Io=500mA,Ci=0.33μF, Co=0.1μF, unless otherwise specified )

| Pa rameter | Symbol | Test conditions | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| Output voltage | Vo | | 25℃ | 5.75 | 6 | 6.25 | V |
| | | 8V≤$V_i$≤21V, Io=5mA-1A | -25-125℃ | 5.7 | 6 | 6.3 | V |
| Load Regulation | △Vo | Io=5mA-1.5A | 25℃ | | 14 | 120 | mV |
| | | Io=250mA-750mA | 25℃ | | 4 | 60 | mV |
| Line regulation | △Vo | 8V≤$V_i$≤25V | 25℃ | | 5 | 120 | mV |
| | | 9V≤$V_i$≤13V | 25℃ | | 1.5 | 60 | mV |
| Quiescent Current | Iq | | 25℃ | | 4.3 | 8 | mA |
| Quiescent Current Change | △Iq | 8V≤$V_i$≤25V | -25-125℃ | | | 1.3 | mA |
| | | 5mA≤$I_O$≤1A | -25-125℃ | | | 0.5 | mA |
| Output voltage drift | △Vo/△T | $I_O$=5mA | 0-125℃ | | -0.8 | | mV/℃ |
| Output Noise Voltage | $V_N$ | 10Hz≤f≤100KHz | 25℃ | | 45 | | μV/Vo |
| Ripple Rejection | RR | 9V≤$V_i$≤19V,f=120Hz | -25-125℃ | 59 | 75 | | dB |
| Dropout Voltage | Vd | Io=1A | 25℃ | | 2 | | V |
| Output resistance | $R_O$ | f=1K$H_Z$ | 25℃ | | 10 | | mΩ |
| Short Circuit Current | Isc | | 25℃ | | 550 | | mA |
| Peak Current | Ipk | | 25℃ | | 2.2 | | A |

* Pulse test.

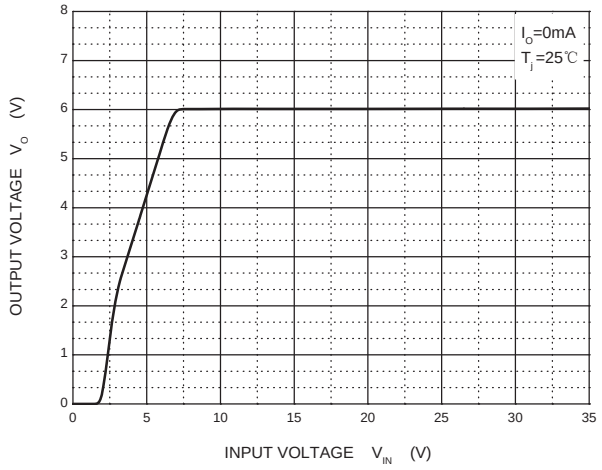
# RATINGS AND CHARACTERISTIC CURVES

**TYPICAL APPLICATION**

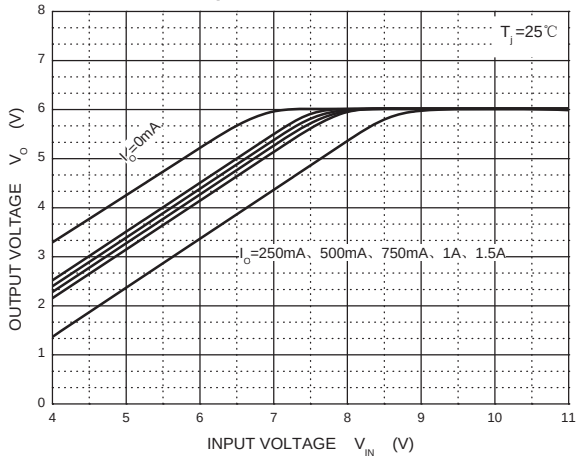



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

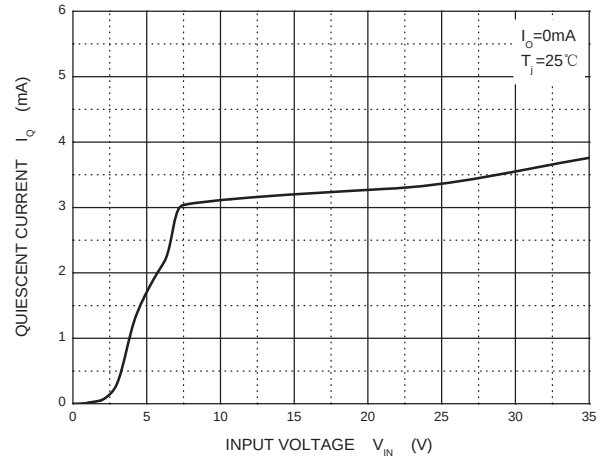
**Output Characteristics**



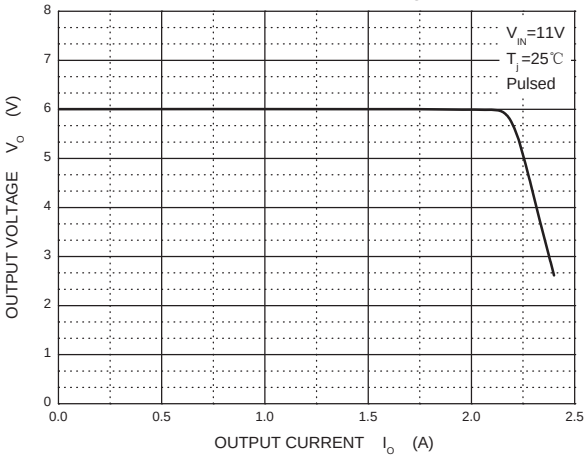

**Dropout Characteristics**



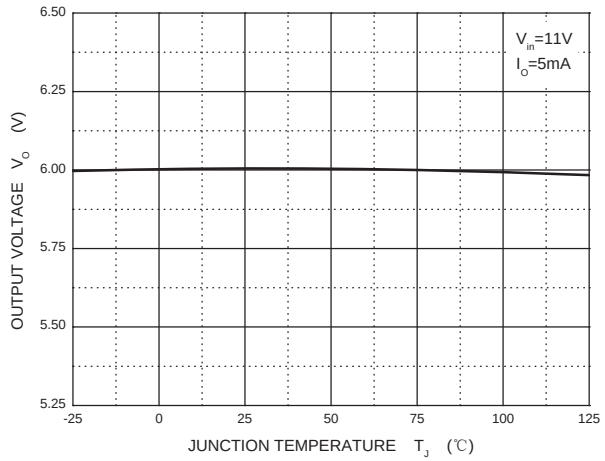

**Quiescent Current vs Input Voltage**




**Current Cut-off Grid Voltage**




**Output Voltage vs Ambient Temperature**




**Power Derating Curve**