HFZT

# 7805

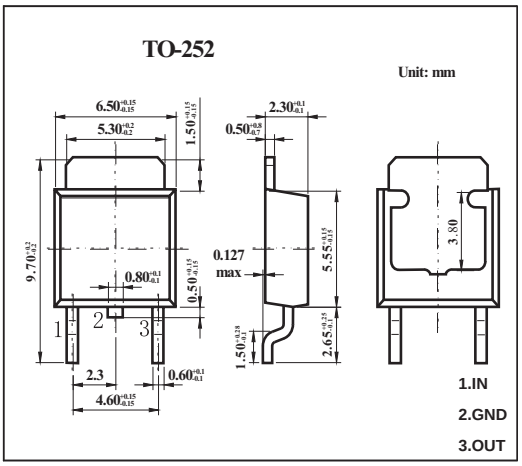
## Three-terminal positive voltage regulator

### FEATURES

- Maximum output current IOM: 1.5 A
- Output voltageVO: 5V
- Continuous total dissipation PD: 1.25 W

### MECHANICAL DATA

- Case: TO-252 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any




## 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 Air | $R_{\theta JA}$ | 80 | ℃/W |
| Operating Junction Temperature Range | $T_{OPR}$ | -25~+125 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -65~+150 | ℃ |

## ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

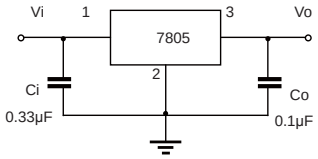
(Vi=10V,Io=500mA,Ci=0.33μF, Co=0.1μF, unless otherwise specified )

| Parameter | Symbol | Test conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Output Voltage | Vo | | 25℃ | 4.8 | 5.0 | 5.2 | V |
| | | 7V≤$V_i$≤20V, Io=5mA-1A | -25-125℃ | 4.75 | 5.00 | 5.25 | V |
| Load Regulation | △Vo | Io=5mA-1.5A | 25℃ | | 9 | 100 | mV |
| | | Io=250mA-750mA | 25℃ | | 4 | 50 | mV |
| Line Regulation | △Vo | 7V≤$V_i$≤25V | 25℃ | | 4 | 100 | mV |
| | | 8V≤$V_i$≤12V | 25℃ | | 1.6 | 50 | mV |
| Quiescent Current | Iq | | 25℃ | | 5 | 8 | mA |
| Quiescent Current Change | △Iq | 7V≤$V_i$≤25V | -25-125℃ | | 0.3 | 1.3 | mA |
| | | 5mA≤$I_O$≤1A | -25-125℃ | | 0.03 | 0.5 | mA |
| Output Noise Voltage | $V_N$ | 10Hz≤f≤100KHz | 25℃ | | 42 | | μV/Vo |
| Output voltage drift | △Vo/△T | $I_O$=5mA | -25-125℃ | | -1.1 | | mV/℃ |
| Ripple Rejection | RR | 8V≤$V_i$≤18V,f=120Hz | -25-125℃ | 62 | 73 | | dB |
| Dropout Voltage | Vd | Io=1A | 25℃ | | 2 | | V |
| Output resistance | $R_O$ | f=1KHz | 25℃ | | 10 | | mΩ |
| Short Circuit Current | Isc | | 25℃ | | 230 | | mA |
| Peak Current | Ipk | | 25℃ | | 2.2 | | A |

* Pulse test.

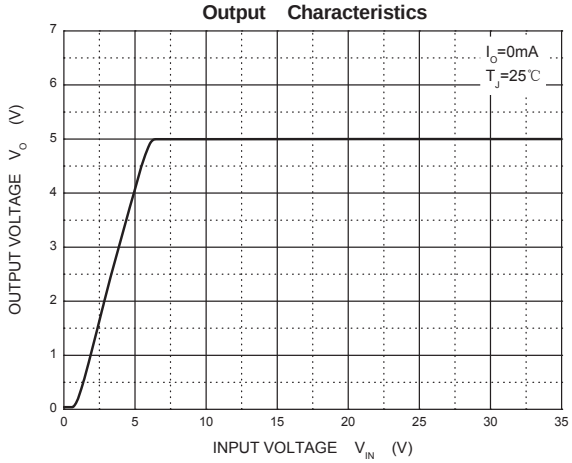
# RATINGS AND CHARACTERISTIC CURVES

## Typical Characteristics

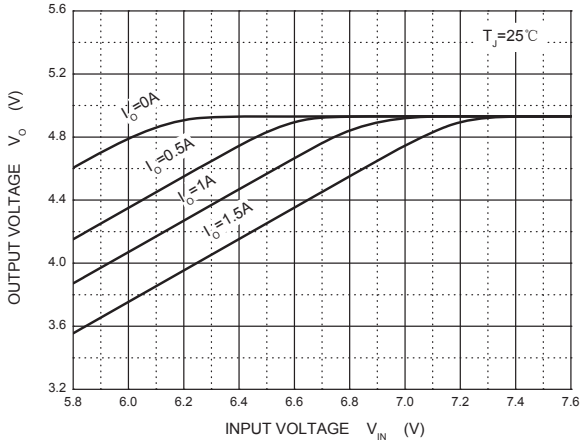



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

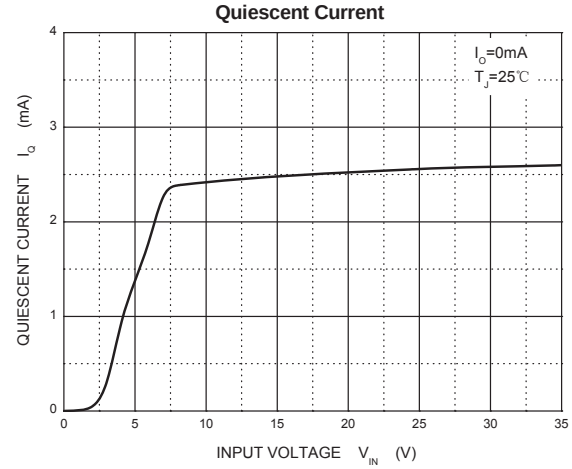
**Output Characteristics**



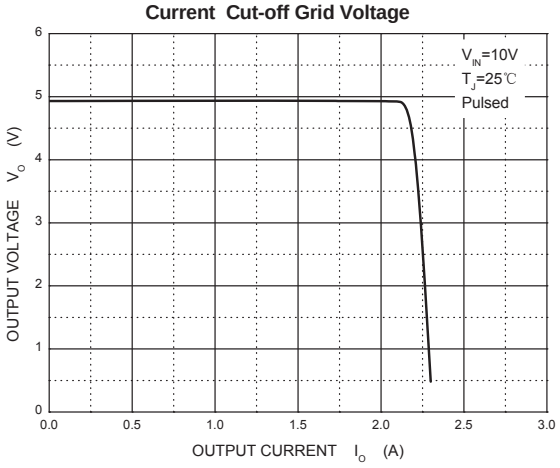

**Dropout Characteristics**



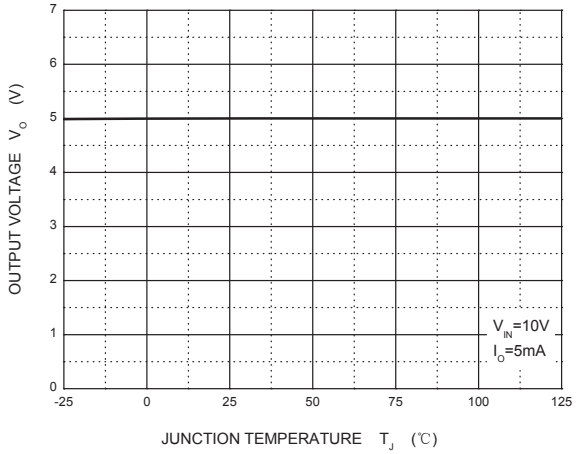

**Quiescent Current**




**Current Cut-off Grid Voltage**




**Output Voltage vs Junction Temperature**




**Power Derating Curve**