# SHENZHEN HAOCHANG SEMICONDUCTOR CO.,LTD.

## SOT-89 Encapsulate Three Terminal Voltage Regulator

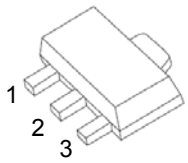
**78L15** Three-terminal positive voltage regulator

**SOT-89-3L**

1.OUT

2.GND

3.IN




### FEATURES

**Maximum output current**
**$I_{OM}$: 0.1 A**
**Output voltage**
**$V_O$: 15 V**
**Continuous total dissipation**
**$P_D$: 0.5 W**

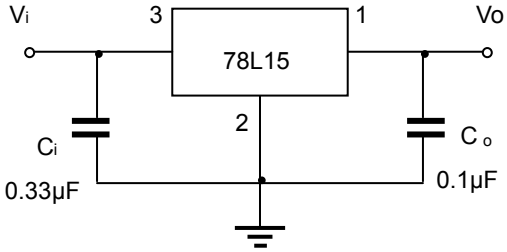
**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Input Voltage | $V_i$ | 35 | V |
| Operating Junction Temperature Range | $T_{OPR}$ | 0~+150 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -55~+150 | ℃ |

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE** ($V_i$=23V,Io=40mA,$C_i$=0.33μF,Co=0.1μF,unless otherwise specified )

| Parameter | Symbol | Test conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Output voltage | Vo | | 25℃ | 14.4 | 15 | 15.6 | V |
| | | 17.5V≤$V_i$≤30V,Io=1mA-40mA | 0-125℃ | 14.25 | 15 | 15.75 | V |
| | | $V_i$=23V, Io=1mA-70mA | | 14.25 | 15 | 15.75 | V |
| Load Regulation | △Vo | Io=1mA-100mA, $V_i$=23V | 25℃ | | 25 | 150 | mV |
| | | Io=1mA-40mA, $V_i$=23V | 25℃ | | 15 | 75 | mV |
| Line regulation | △Vo | 17.5V≤Vi≤30V,Io=40mA | 25℃ | | 65 | 300 | mV |
| | | 19V≤Vi≤30V,Io=40mA | 25℃ | | 58 | 250 | mV |
| Quiescent Current | Iq | | 25℃ | | 4.6 | 6.5 | mA |
| Quiescent Current Change | △Iq | 19V≤Vi≤30V, Io=40mA | 0-125℃ | | | 1.5 | mA |
| | △Iq | 1mA≤$I_O$≤40mA, Vi=23V | 0-125℃ | | | 0.1 | mA |
| Output Noise Voltage | $V_N$ | 10Hz≤f≤100KHz | 25℃ | | 82 | | μV |
| Ripple Rejection | RR | 18.5V≤Vi≤28.5V,f=120Hz | 0-125℃ | 34 | 39 | | dB |
| Dropout Voltage | Vd | | 25℃ | | 1.7 | | V |

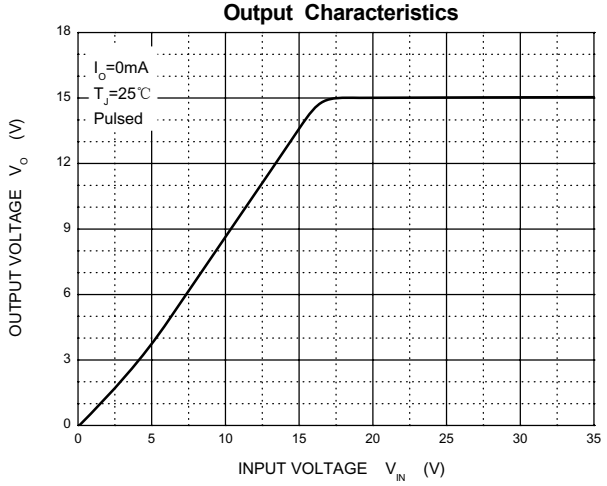
**TYPICAL APPLICATION**



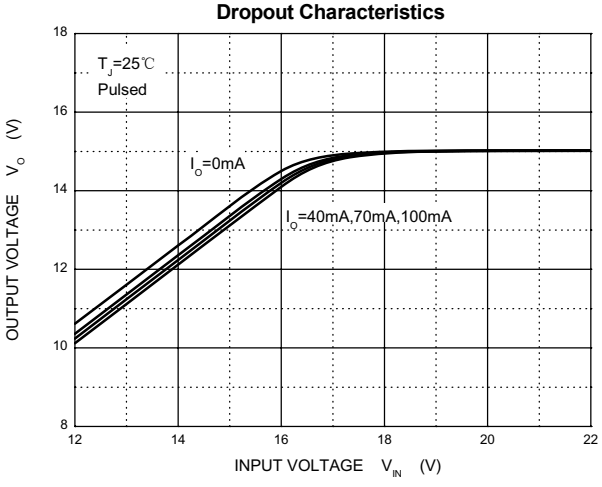

Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

# Typical Characterisitics 78L15

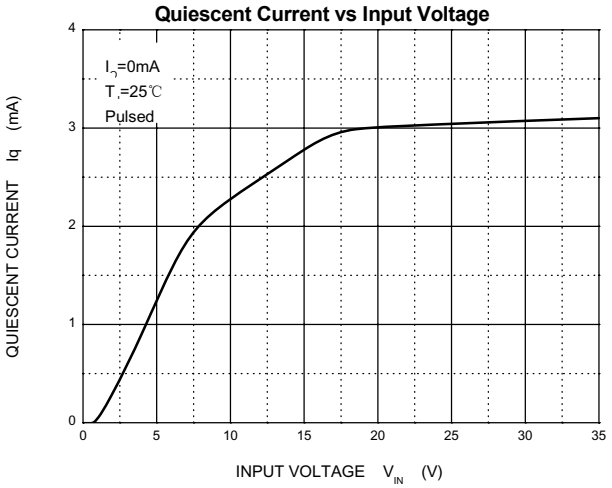
**Output Characteristics**



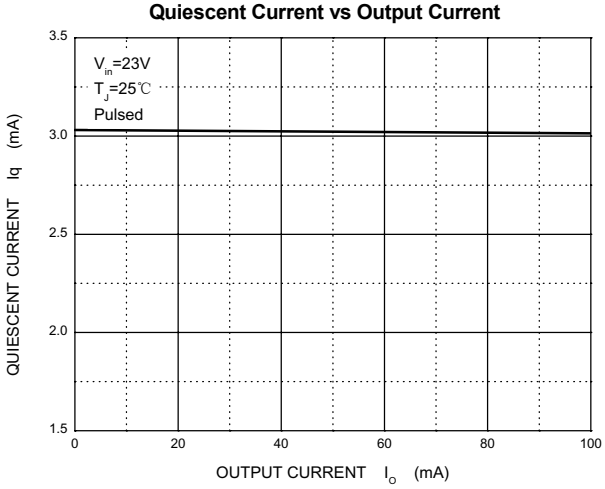

**Dropout Characteristics**



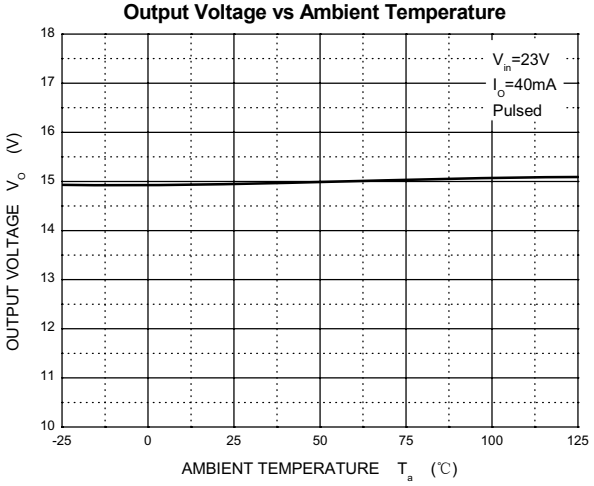

**Quiescent Current vs Input Voltage**



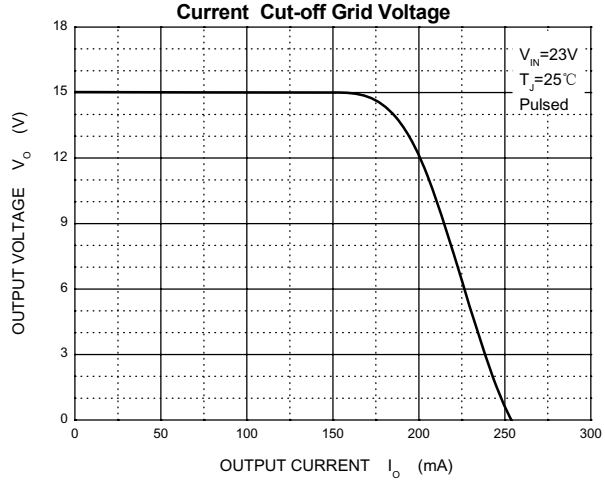

**Quiescent Current vs Output Current**




**Output Voltage vs Ambient Temperature**




**Current Cut-off Grid Voltage**




**Power Derating Curve**