

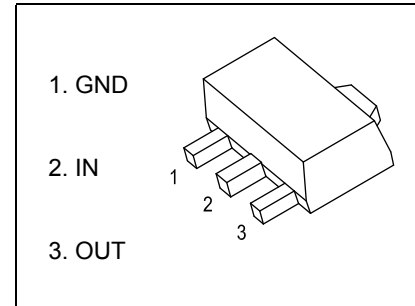
## SOT-89 Plastic-Encapsulate Voltage Regulators

### 79L15 Three-terminal positive voltage regulator

### SOT-89-3L

#### FEATURES

- Maximum output current  
 $I_{OM}$ : 0.1A
- Output voltage  
 $V_O$ : -15V
- Continuous total dissipation  
 $P_D$ : 0.6 W ( $T_a = 25^\circ\text{C}$ )



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

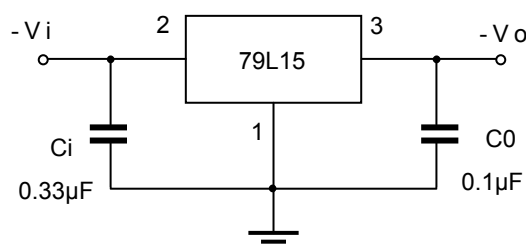
| Parameter                                   | Symbol          | Value    | Unit                      |
|---------------------------------------------|-----------------|----------|---------------------------|
| Input Voltage                               | $V_i$           | -30      | V                         |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 208.3    | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range        | $T_{OPR}$       | 0~+150   | $^\circ\text{C}$          |
| Storage Temperature Range                   | $T_{STG}$       | -65~+150 | $^\circ\text{C}$          |

#### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i = -23\text{V}$ , $I_o = 40\text{mA}$ , $C_i = 0.33\mu\text{F}$ , $C_o = 0.1\mu\text{F}$ , unless otherwise specified)

| Parameter                | mbol         | Test conditions                                                                 | Min                    | Typ | Max    | Unit              |
|--------------------------|--------------|---------------------------------------------------------------------------------|------------------------|-----|--------|-------------------|
| Output Voltage           | $V_o$        | $25^\circ\text{C}$                                                              | -14.40                 | -15 | -15.60 | V                 |
|                          |              | $-17.5\text{V} \leq V_i \leq -30\text{V}$ , $I_o = 1\text{mA} \sim 40\text{mA}$ | -14.25                 | -15 | -15.75 | V                 |
|                          |              | $I_o = 1\text{mA} \sim 70\text{mA}$                                             | -14.25                 | -15 | -15.75 | V                 |
| Load Regulation          | $\Delta V_o$ | $I_o = 1\text{mA} \sim 100\text{mA}$ , $V_i = -23\text{V}$                      | $25^\circ\text{C}$     | 25  | 150    | mV                |
|                          |              | $I_o = 1\text{mA} \sim 40\text{mA}$ , $V_i = -23\text{V}$                       | $25^\circ\text{C}$     | 15  | 75     | mV                |
| Line Regulation          | $\Delta V_o$ | $-17.5\text{V} \leq V_i \leq -30\text{V}$ , $I_o = 40\text{mA}$                 | $25^\circ\text{C}$     | 65  | 300    | mV                |
|                          |              | $-20\text{V} \leq V_i \leq -30\text{V}$ , $I_o = 40\text{mA}$                   | $25^\circ\text{C}$     | 50  | 250    | mV                |
| Quiescent Current        | $I_q$        | $25^\circ\text{C}$                                                              |                        |     | 6.5    | mA                |
| Quiescent Current Change | $\Delta I_q$ | $-20\text{V} \leq V_i \leq -30\text{V}$ , $I_o = 40\text{mA}$                   | 0-125 $^\circ\text{C}$ |     | 1.5    | mA                |
|                          | $\Delta I_q$ | $1\text{mA} \leq I_o \leq 40\text{mA}$                                          | 0-125 $^\circ\text{C}$ |     | 0.1    | mA                |
| Output Noise Voltage     | $V_N$        | 10Hz $\leq f \leq$ 100KHz                                                       | $25^\circ\text{C}$     | 90  |        | $\mu\text{V}/V_o$ |
| Ripple Rejection         | RR           | $-18.5\text{V} \leq V_i \leq -28.5\text{V}$ , $f = 120\text{Hz}$                | 0-125 $^\circ\text{C}$ | 34  | 39     | dB                |
| Dropout Voltage          | $V_d$        | $25^\circ\text{C}$                                                              |                        | 1.7 |        | V                 |

\* Pulse test.

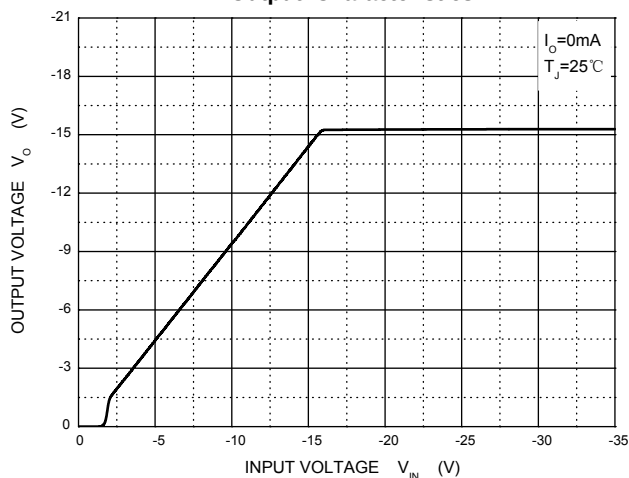
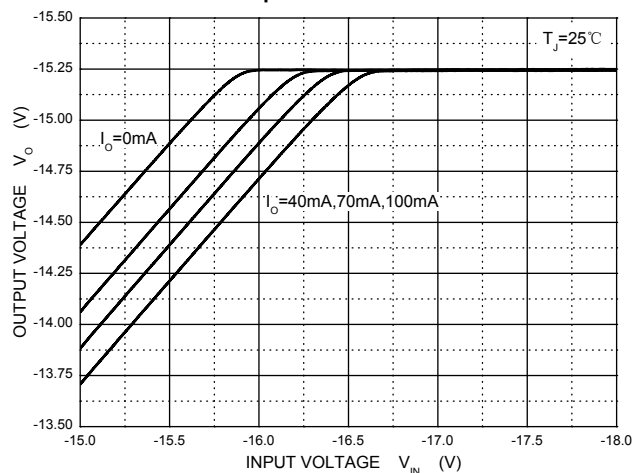
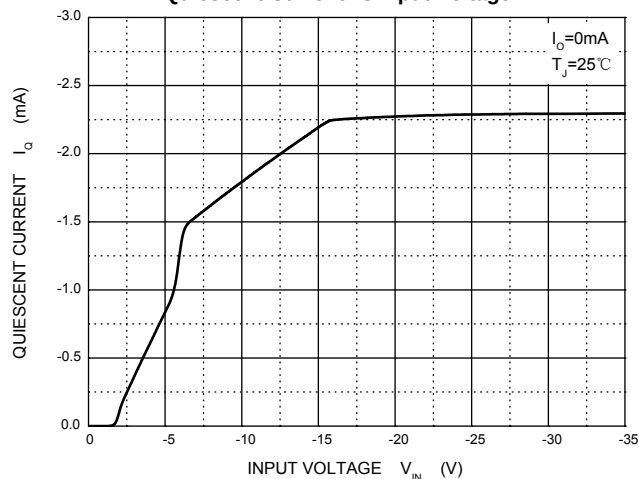
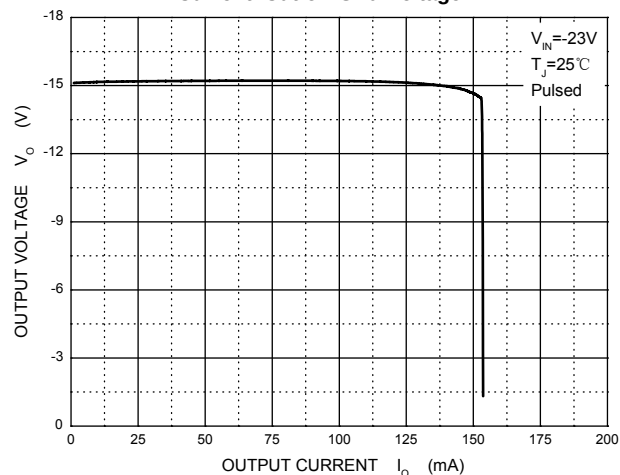
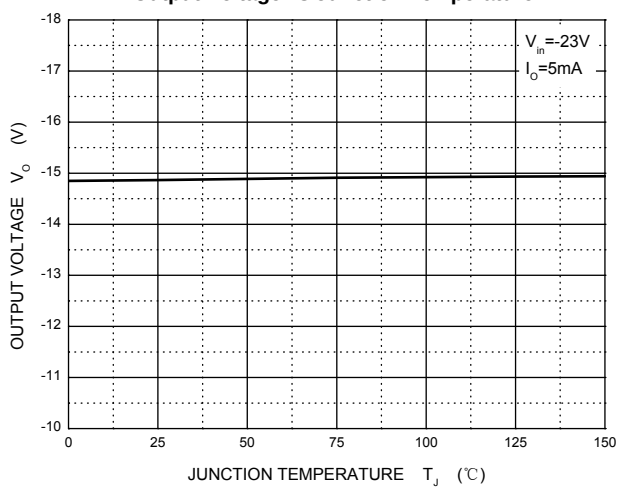
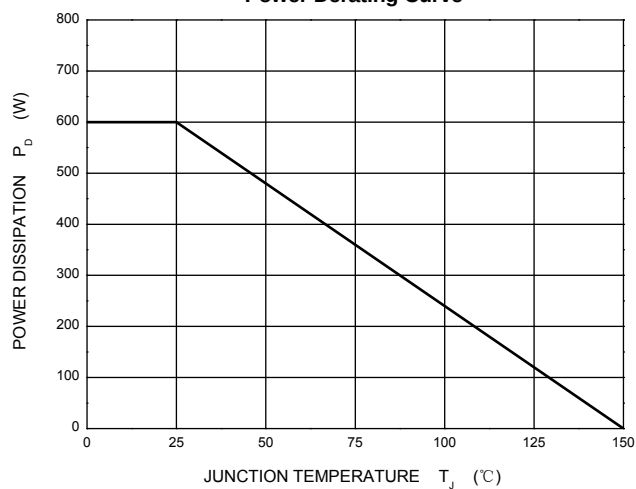
#### TYPICAL APPLICATION



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

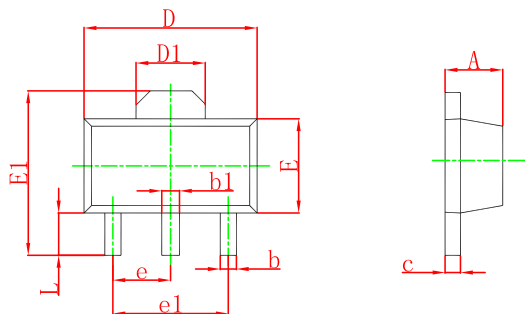
The above data are for reference only.

## Typical Characteristics

**Output Characteristics**

**Dropout Characteristics**

**Quiescent Current vs Input Voltage**

**Current Cut-off Grid Voltage**

**Output Voltage vs Junction Temperature**

**Power Derating Curve**


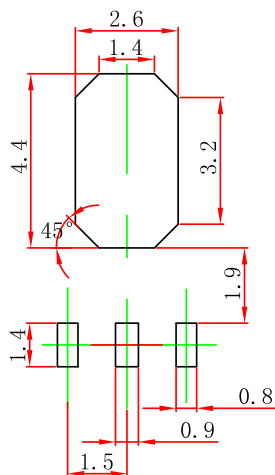
## Outline Drawing

### SOT-89-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.400                     | 1.600 | 0.055                | 0.063 |
| b      | 0.320                     | 0.520 | 0.013                | 0.020 |
| b1     | 0.400                     | 0.580 | 0.016                | 0.023 |
| c      | 0.350                     | 0.440 | 0.014                | 0.017 |
| D      | 4.400                     | 4.600 | 0.173                | 0.181 |
| D1     | 1.550 REF.                |       | 0.061 REF.           |       |
| E      | 2.300                     | 2.600 | 0.091                | 0.102 |
| E1     | 3.940                     | 4.250 | 0.155                | 0.167 |
| e      | 1.500 TYP.                |       | 0.060 TYP.           |       |
| e1     | 3.000 TYP.                |       | 0.118 TYP.           |       |
| L      | 0.900                     | 1.200 | 0.035                | 0.047 |

### SOT-89-3L Suggested Pad Layout



Note:

1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

## PACKAGE SPECIFICATIONS

| Package   | Reel Size | Reel DIA.<br>(mm) | Q'TY/Reel<br>(pcs) | Box Size<br>(mm) | QTY/Box<br>(pcs) | Carton Size<br>(mm) | G.W.(Kg) |
|-----------|-----------|-------------------|--------------------|------------------|------------------|---------------------|----------|
| SOT-89-3L | 7'        | 330               | 1000               | 203×203×195      | 40000            | 438×438×220         | 180000   |