

## Features

- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- No External Components Required
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

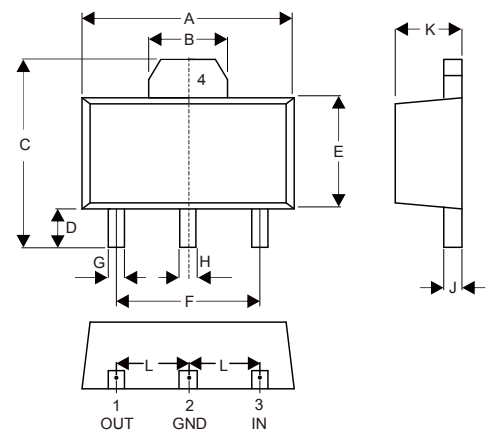
## Maximum Ratings

| Parameter                            | Symbol    | Value   | Unit |
|--------------------------------------|-----------|---------|------|
| Input Voltage                        | $V_1$     | 30      | V    |
| Maximum Output Current               | $I_o$     | 0.1     | A    |
| Operating Junction Temperature Range | $T_{opr}$ | -40~125 | °C   |
| Storage Temperature Range            | $T_{STG}$ | -40~150 | °C   |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

# Three-Terminal Low Current Positive Voltage Regulators

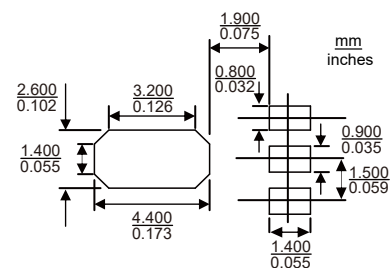
## SOT-89



## DIMENSIONS

| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.169  | 0.185 | 4.30 | 4.70 |      |
| B   | 0.061  |       | 1.55 |      | TYP. |
| C   | 0.154  | 0.171 | 3.91 | 4.35 |      |
| D   | 0.031  | 0.047 | 0.80 | 1.20 |      |
| E   | 0.089  | 0.104 | 2.25 | 2.65 |      |
| F   | 0.118  |       | 3.00 |      | TYP. |
| G   | 0.013  | 0.020 | 0.33 | 0.52 |      |
| H   | 0.015  | 0.021 | 0.38 | 0.53 |      |
| J   | 0.014  | 0.017 | 0.35 | 0.44 |      |
| K   | 0.055  | 0.063 | 1.40 | 1.60 |      |
| L   | 0.059  |       | 1.50 |      | TYP. |

## Suggested Solder Pad Layout

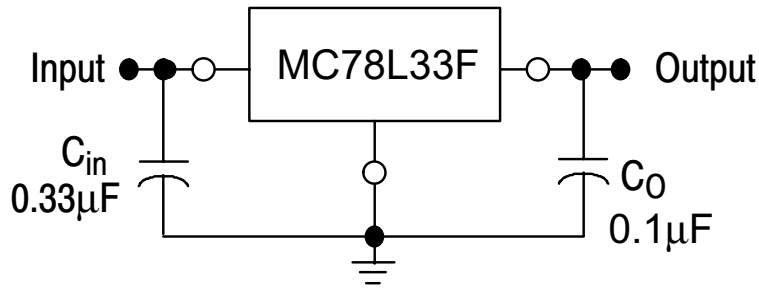


**Electrical Characteristics**

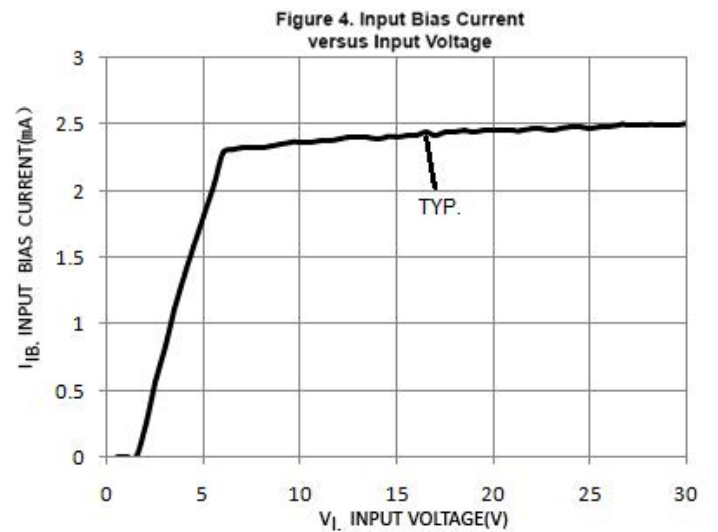
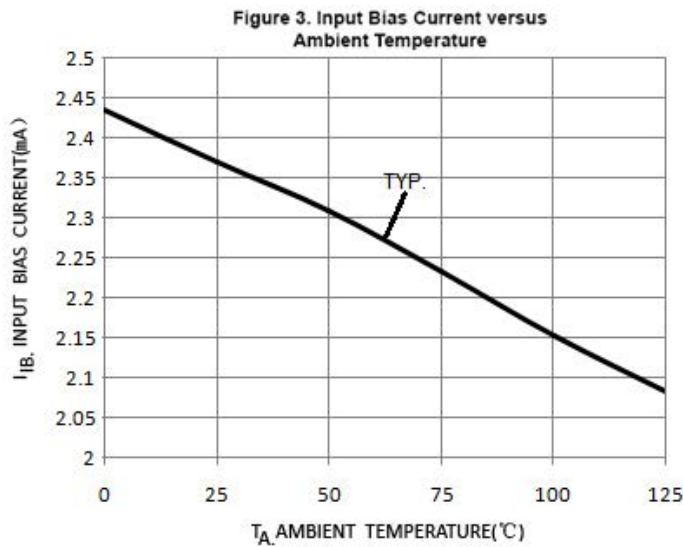
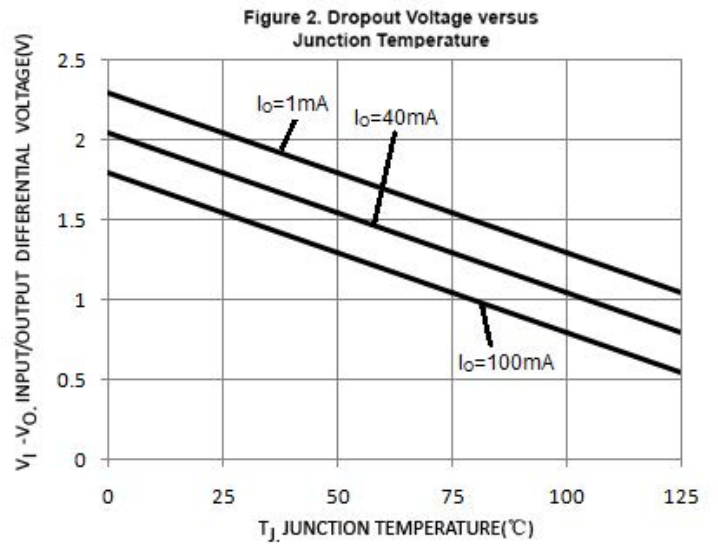
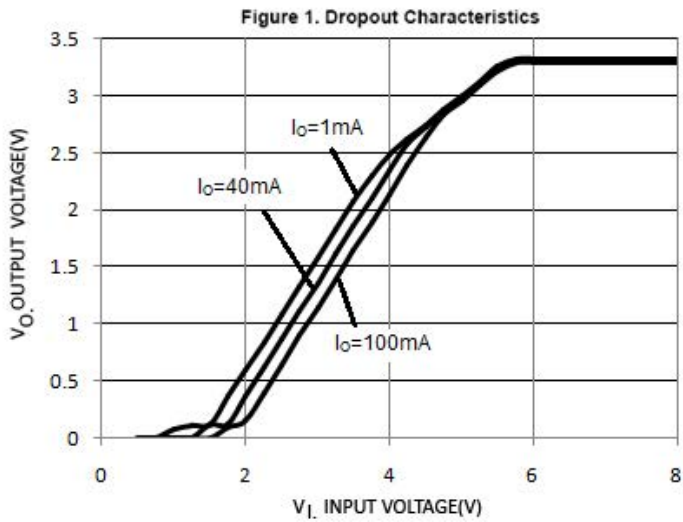
 ( $V_i=10V$ ,  $I_o=40mA$ ,  $0^\circ C < T_j < 125^\circ C$ ,  $C_i=0.33\mu F$ ,  $C_o=0.1\mu F$ , Unless Otherwise Specified)

| Parameter                 | Symbol                         | Test Conditions  | Min   | Typ | Max   | Unit |
|---------------------------|--------------------------------|--|-------|-----|-------|------|
| Output Voltage            | V <sub>o</sub>                 | T <sub>j</sub> =25°C   | 3.168 | 3.3 | 3.432 | V    |
|                           |                                | 7.0V ≤ V <sub>1</sub> ≤ 20V, I <sub>o</sub> =1mA-40mA        | 3.315 | -   | 3.465 | V    |
|                           |                                | V <sub>1</sub> =8.3V<br>I <sub>o</sub> =1mA-70mA             | 3.315 | -   | 3.465 | V    |
| Load Regulation           | ΔV <sub>o</sub>                | I <sub>o</sub> =1mA-100mA, T <sub>j</sub> =25°C              | -     | -   | 60    | mV   |
|                           |                                | I <sub>o</sub> =1mA-40mA, T <sub>j</sub> =25°C               | -     | -   | 30    | mV   |
| Line Regulation           | ΔV <sub>o</sub>                | 5.8V ≤ V <sub>1</sub> ≤ 20V, T <sub>j</sub> =25°C            | -     | -   | 150   | mV   |
|                           |                                | 6.3V ≤ V <sub>1</sub> ≤ 20V, T <sub>j</sub> =25°C            | -     | -   | 100   | mV   |
| Input Bias Current        | I <sub>IB</sub>                | T <sub>j</sub> =25°C   | -     | -   | 6.0   | mA   |
|                           |                                | T <sub>j</sub> =125°C  | -     | -   | 5.5   | mA   |
| Input Bias Current Change | ΔI <sub>IB</sub>               | 6.3V ≤ V <sub>1</sub> ≤ 20V                                  | -     | -   | 1.5   | mA   |
|                           |                                | 1mA ≤ I <sub>o</sub> ≤ 40mA                                  | -     | -   | 0.1   | mA   |
| Output Noise Voltage      | V <sub>N</sub>                 | 10Hz ≤ f ≤ 100KHz  | -     | 40  | -     | μV   |
| Ripple Rejection          | RR                             | 6.3V ≤ V <sub>1</sub> ≤ 16.3V, f=120Hz, T <sub>j</sub> =25°C | 41    | 49  | -     | dB   |
| Dropout Voltage           | V <sub>L</sub> .V <sub>o</sub> | T <sub>j</sub> =25°C   | -     | 2.5 | -     | V    |

Typical Application



Curve Characteristics



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:1Kpcs/Reel |

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