

## 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)

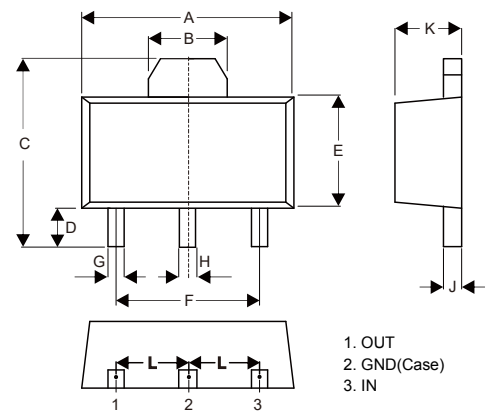
## Maximum Ratings

| Parameter                            | Symbol           | Value   | Unit |
|--------------------------------------|------------------|---------|------|
| Input Voltage (Vo=5.8V)              | V <sub>1</sub>   | 30      | V    |
| Maximum Output Current               | I <sub>o</sub>   | 0.1     | A    |
| Operating Junction Temperature Range | T <sub>opr</sub> | -20~120 | °C   |
| Storage Temperature Range            | T <sub>STG</sub> | -55~150 | °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

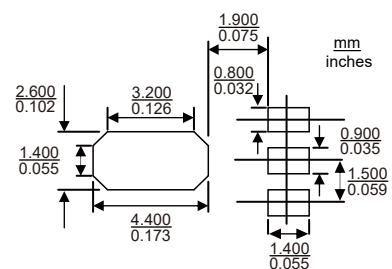
## SOT-89



### 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



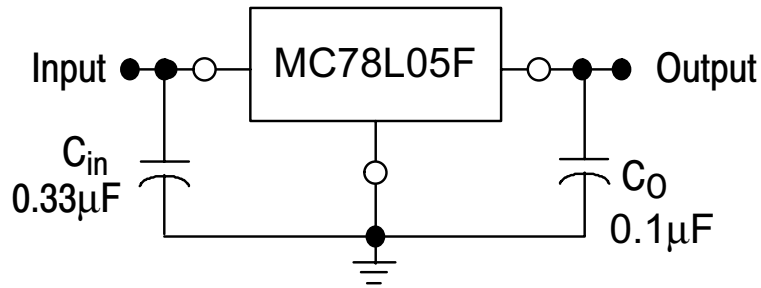
**Electrical Characteristics**

( $V_i=10V$ ,  $I_o=40mA$ ,  $0^\circ C < T_j < 120^\circ C$ ,  $C_i=0.33\mu F$ ,  $C_o=0.1\mu F$ , Unless Otherwise Specified)

| Parameter                | Symbol       | Test Conditions                                       | Min | Typ | Max  | Unit    |
|--------------------------|--------------|---|-----|-----|------|---------|
| Output Voltage           | $V_o$        | $T_j=25^\circ C$                                      | 4.8 | 5.0 | 5.2  | V       |
|                          |              | $7V \leq V_1 \leq 20V$ ,<br>$I_o=1mA-40mA$            | 4.7 | -   | 5.25 | V       |
|                          |              |   | 5.0 |     |      | V       |
|                          |              | $7V \leq V_1 \leq V_{MAX}$<br>$I_o=1mA-700mA$ (Note2) | 4.7 | -   | 5.25 | V       |
| 5.0                      | V            |   |     |     |      |         |
| Load Regulation          | $\Delta V_o$ | $I_o=1mA-100mA, T_j=25^\circ C$                       | -   | 11  | 60   | mV      |
|                          |              | $I_o=1mA-40mA, T_j=25^\circ C$                        | -   | 5.0 | 30   | mV      |
| Line Regulation          | $\Delta V_o$ | $7V \leq V_1 \leq 20V, T_j=25^\circ C$                | -   | 8   | 150  | mV      |
|                          |              | $8V \leq V_1 \leq 20V, T_j=25^\circ C$                | -   | 6   | 100  | mV      |
| Quiescent Current        | $I_q$        |   | -   | 2.0 | 5.5  | mA      |
| Quiescent Current Change | $\Delta I_q$ | $8V \leq V_1 \leq 20V$                                | -   | -   | 1.5  | mA      |
|                          |              | $1mA \leq I_o \leq 40mA$                              | -   | -   | 0.1  | mA      |
| Output Noise Voltage     | $V_N$        | $10Hz \leq f \leq 100KHz$                             | -   | 40  | -    | $\mu V$ |
| Ripple Rejection         | RR           | $8V \leq V_1 \leq 20V, f=120Hz, T_j=25^\circ C$       | 41  | 80  | -    | dB      |
| Dropout Voltage          | $V_d$        | $T_j=25^\circ C$                                      | -   | 1.7 | -    | V       |

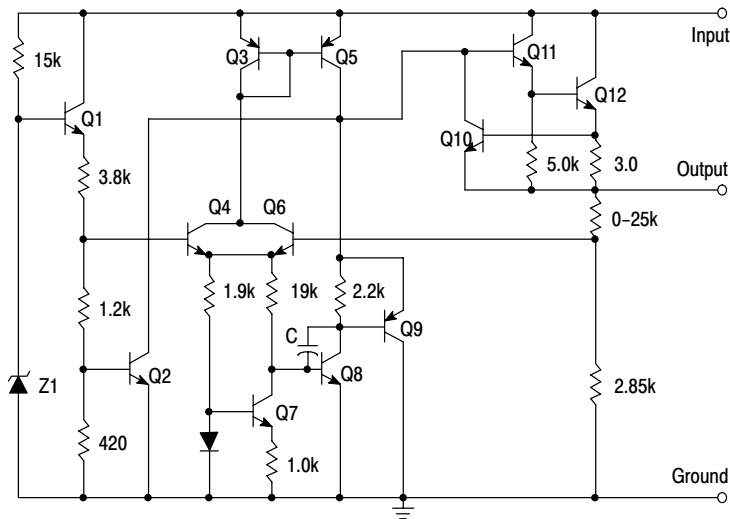
Note: 2. Bypass Capacitors are Recommended for Optimum Stability and Transient Response and should be Located as Close as Possible to The Regulators

**Typical Application**



**Curve Characteristics**

Figure 1. Representative Schematic Diagram



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

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