

### Features

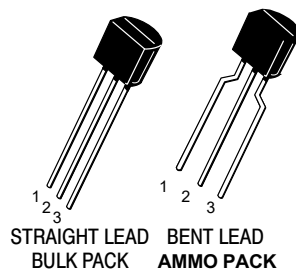
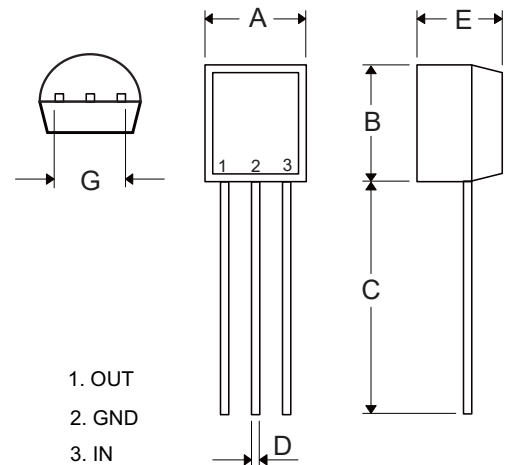
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- No External Components Required
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates 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>CM</sub>  | 0.1     | A    |
| Power Dissipation                      | P <sub>D</sub>   | 0.625   | W    |
| Thermal Resistance Junction to ambient | R <sub>θJA</sub> | 200     | °C/W |
| Operating Junction Temperature         | T <sub>opr</sub> | -40~125 | °C   |
| Storage Temperature Range              | T <sub>STG</sub> | -55~150 | °C   |

## Three-Terminal Low Current Positive Voltage Regulators

### TO-92



| DIM | INCHES |       | MM    |       | NOTE          |
|-----|--------|-------|-------|-------|---------------|
|     | MIN    | MAX   | MIN   | MAX   |               |
| A   | 0.169  | 0.185 | 4.30  | 4.70  |               |
| B   | 0.169  | 0.185 | 4.30  | 4.70  |               |
| C   | 0.500  | ----- | 12.70 | ----- |               |
| D   | 0.015  | 0.022 | 0.38  | 0.55  |               |
| E   | 0.130  | 0.146 | 3.30  | 3.70  |               |
| G   | 0.095  | 0.105 | 2.42  | 2.67  | Straight Lead |
|     | 0.173  | 0.220 | 4.40  | 5.60  | Bent          |

**Electrical Characteristics**

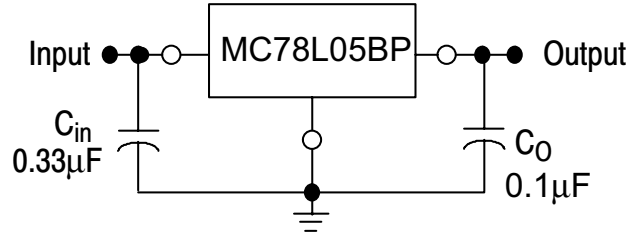
 ( $V_i=10V$ ,  $I_o=40mA$ ,  $0^\circ C < T_j < 125^\circ C$ ,  $C_i=0.33\mu F$ ,  $C_o=0.1\mu F$ , Unless Otherwise Specified)

| Parameter                | Symbol       | Test Conditions                                       | Min | Typ | Max  | Unit    |
|--------------------------|--------------|---|-----|-----|------|---------|
| Output Voltage           | $V_o$        | $T_j=25^\circ C$                                      | 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>$I_o=1mA-700mA$ (Note1) | 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:

1. 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

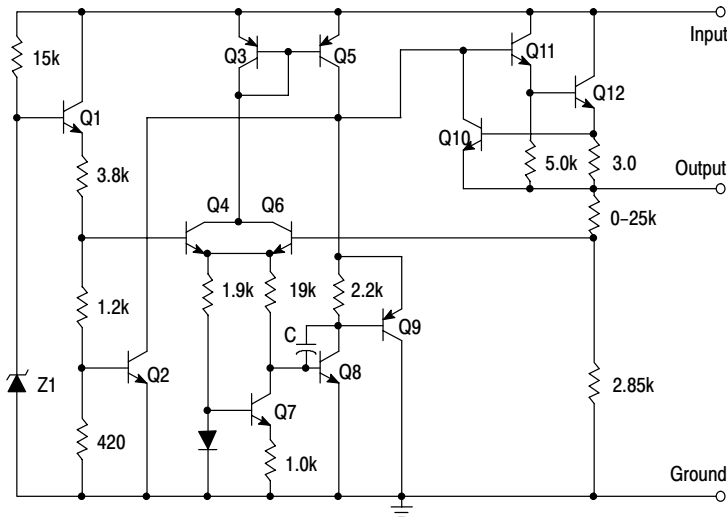
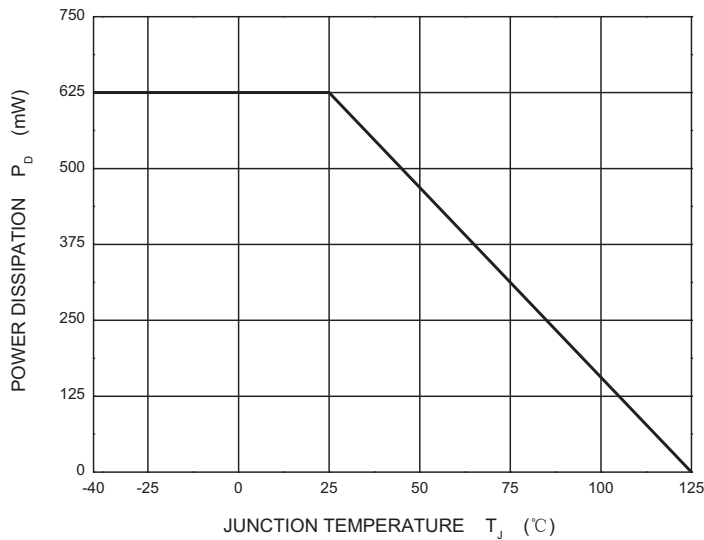


Figure 2. Power Derating Curve



## Ordering Information

| Device         | Packing                     |
|----------------|-----------------------------|
| Part Number-AP | Ammo Packing: 20Kpcs/Carton |
| Part Number-BP | Bulk: 100Kpcs/Carton        |

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-BP-HF  
 Adding "-HF" Suffix for Halogen Free, eg. Part Number-AP-HF

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