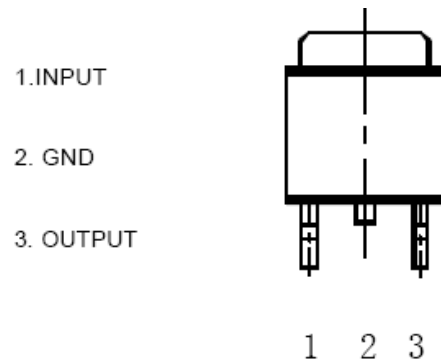


## Three-terminal positive Voltage Regulator BL78M06

### FEATURES

- Output Current in Excess of 0.5A
- Output Voltage is 6V
- Internal thermal Overload protection
- Internal Short Circuit Current Limiting

### PIN CONNECTION



### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Characteristics           | Symbol    | Value     | Unit |
|---------------------------|-----------|-----------|------|
| Input Voltage             | $V_i$     | 35        | V    |
| Operating Temperature     | $T_{opr}$ | -40 ~ 85  | °C   |
| Storage Temperature Range | $T_{stg}$ | -55 ~ 150 | °C   |

### ELECTRICAL CHARACTERISTICS

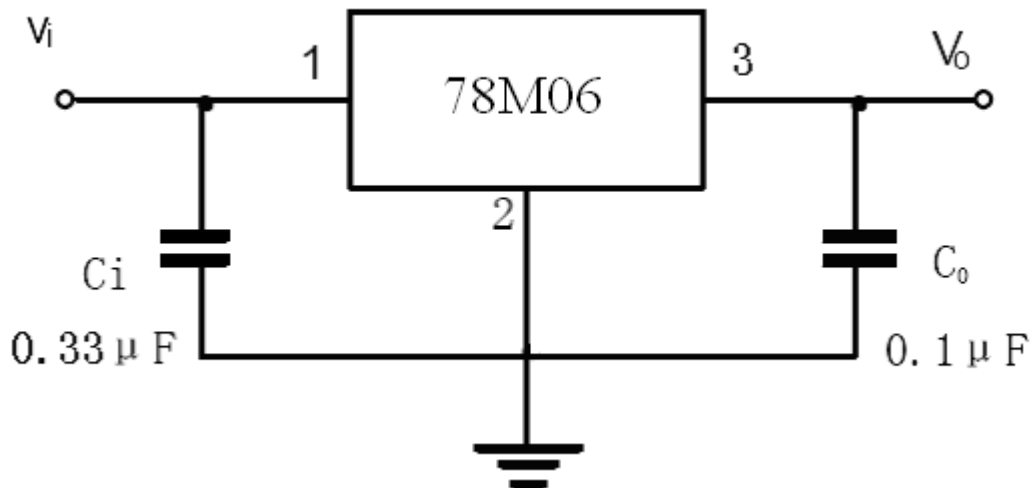
(unless otherwise noted,  $V_i=11V, I_o=350mA, -30^{\circ}C < T_j < 85^{\circ}C, C_1=0.33\mu F, C_o=0.1\mu F$ )

| Characteristics          | Symbol       | Test conditions                                    | Min. | Typ. | Max. | Unit |
|--------------------------|--------------|--|------|------|------|------|
| Output Voltage           | $V_o$        | $T_j=25^{\circ}C$                                  | 5.79 | 6    | 6.21 | V    |
|                          |              | $8V \leq V_i \leq 21V, I_o=5mA \sim 350mA$         | 5.7  | 6    | 6.3  |      |
| Load Regulation          | $\Delta V_o$ | $T_j=25^{\circ}C, I_o=5mA \sim 500mA$              |      | 25   | 120  | mV   |
|                          |              | $T_j=25^{\circ}C, I_o=5mA \sim 200mA$              |      | 10   | 60   |      |
| Line Regulation          | $\Delta V_o$ | $8V \leq V_i \leq 21V, I_o=200mA, T_j=25^{\circ}C$ |      | 4    | 100  | mV   |
|                          |              | $9V \leq V_i \leq 20V, I_o=200mA, T_j=25^{\circ}C$ |      | 2    | 50   |      |
| Quiescent Current        | $I_q$        | $T_j=25^{\circ}C$                                  |      | 4    | 6    | mA   |
| Quiescent Current Charge | $\Delta I_q$ | $8V \leq V_i \leq 21V, I_o=200mA$                  |      |      | 0.8  | mA   |
|                          |              | $5mA \leq I_o \leq 350mA$                          |      |      | 0.5  |      |

Continues:

| Characteristics             | Symbol   | Test conditions  | Min. | Typ. | Max. | Unit          |
|-----------------------------|----------|--|------|------|------|---------------|
| Output Noise Voltage        | $V_N$    | $10\text{Hz} \leq f \leq 100\text{kHz}$ , $T_j = 25^\circ\text{C}$   |      | 40   | 200  | $\mu\text{V}$ |
| Dropout Voltage             | $V_d$    | $T_j = 25^\circ\text{C}$   |      | 2    |      | V             |
| Ripple Rejection            | RR       | $8\text{V} \leq V_i \leq 21\text{V}$ , $f = 120\text{Hz}$ ,<br>$I_o = 300\text{mA}$ , $T_j = 25^\circ\text{C}$ | 56   | 80   |      | dB            |
| Short Circuit Current Limit | $I_{sc}$ | $T_j = 25^\circ\text{C}$   |      | 0.8  |      | A             |

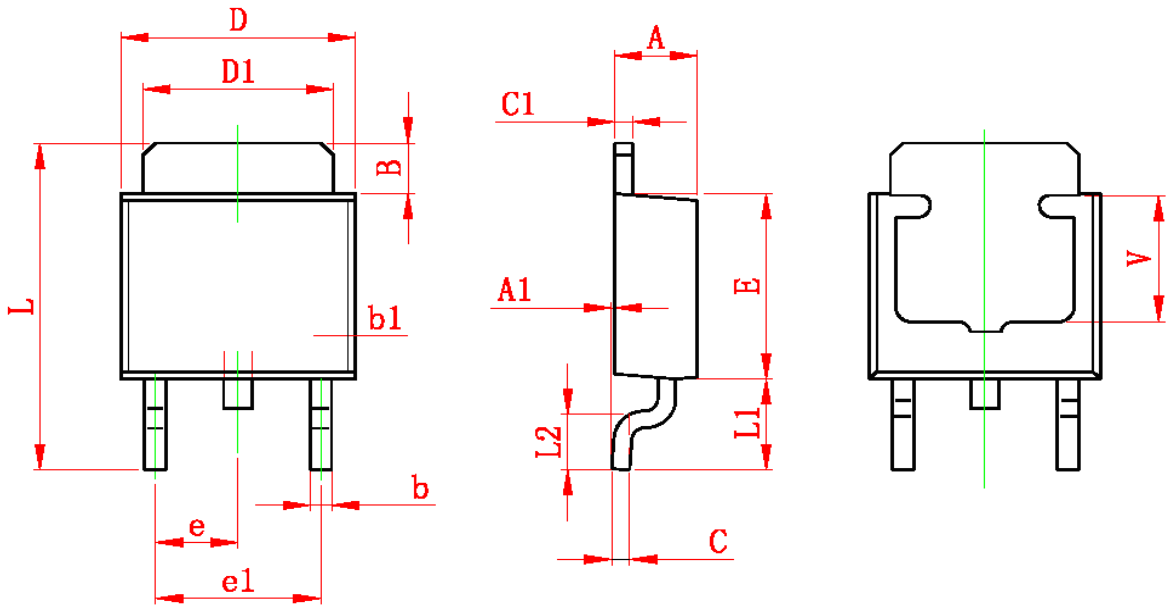
### APPLICATION CIRCUIT



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

OUTLINE DRAWING

TO-252-2L



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 2.200                     | 2.400 | 0.087                | 0.094 |
| A1     | 0.000                     | 0.127 | 0.000                | 0.005 |
| B      | 1.350                     | 1.650 | 0.053                | 0.065 |
| b      | 0.500                     | 0.700 | 0.020                | 0.028 |
| b1     | 0.700                     | 0.900 | 0.028                | 0.035 |
| c      | 0.430                     | 0.580 | 0.017                | 0.023 |
| c1     | 0.430                     | 0.580 | 0.017                | 0.023 |
| D      | 6.350                     | 6.650 | 0.250                | 0.262 |
| D1     | 5.200                     | 5.400 | 0.205                | 0.213 |
| E      | 5.400                     | 5.700 | 0.213                | 0.224 |
| e      | 2.300 TYP                 |       | 0.091 TYP            |       |
| e1     | 4.500                     | 4.700 | 0.177                | 0.185 |
| L      | 9.500                     | 9.900 | 0.374                | 0.390 |
| L1     | 2.550                     | 2.900 | 0.100                | 0.114 |
| L2     | 1.400                     | 1.780 | 0.055                | 0.070 |
| V      | 3.80 REF                  |       | 0.150 REF            |       |