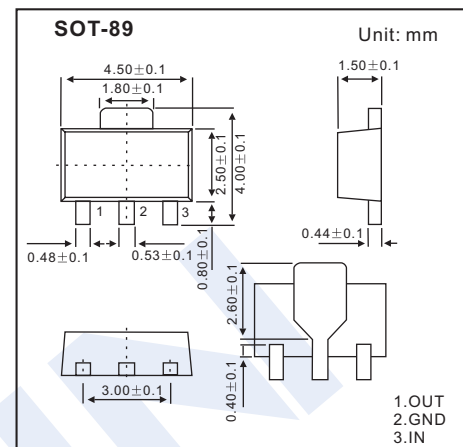


## Three-Terminal Positive Voltage Regulator

## LM78L18

## ■ Features

- Maximum Output current  $I_o$ : 0.1A
- Output Voltage  $V_o$ : 18V
- Continuous Total Dissipation  $P_d$ : 0.5W ( $T_a = 25^\circ\text{C}$ )



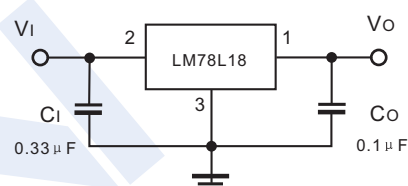
## ■ Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

| Parameter                            | Symbol    | Rating     | Unit             |
|--------------------------------------|-----------|------------|------------------|
| Input Voltage                        | $V_i$     | 35         | V                |
| Operating Junction Temperature Range | $T_{opr}$ | -55 ~ +125 | $^\circ\text{C}$ |
| Storage Temperature Range            | $T_{stg}$ | -55 ~ +150 | $^\circ\text{C}$ |

■ Electrical Characteristics ( $V_i=26\text{V}$ ,  $I_o=40\text{mA}$ ,  $C_i=0.33\ \mu\text{F}$ ,  $C_o=0.1\ \mu\text{F}$ , unless otherwise specified)

| Parameter                | Symbol       | Test conditions  | Min  | Typ | Max  | Unit          |
|--------------------------|--------------|--|------|-----|------|---------------|
| Output Voltage           | $V_o$        | $T_J = 25^\circ\text{C}$   | 17.3 | 18  | 18.7 | V             |
|                          |              | $T_J = 0 \sim 125^\circ\text{C}$ , $20.5\text{V} \leq V_i \leq 33\text{V}$ , $I_o = 1\text{mA} \sim 40\text{mA}$ | 17.1 | 18  | 18.9 | V             |
|                          |              | $T_J = 0 \sim 125^\circ\text{C}$ , $V_i = 26\text{V}$ , $I_o = 1\text{mA} \sim 70\text{mA}$                      | 17.1 | 18  | 18.9 | V             |
| Load Regulation          | $\Delta V_o$ | $T_J = 25^\circ\text{C}$ , $V_i = 26\text{V}$ , $I_o = 1\text{mA} \sim 100\text{mA}$                             |      | 27  | 180  | mV            |
|                          |              | $T_J = 25^\circ\text{C}$ , $V_i = 26\text{V}$ , $I_o = 1\text{mA} \sim 40\text{mA}$                              |      | 19  | 90   | mV            |
| Line Regulation          | $\Delta V_o$ | $T_J = 25^\circ\text{C}$ , $20.5\text{V} \leq V_i \leq 33\text{V}$ , $I_o = 40\text{mA}$                         |      | 70  | 360  | mV            |
|                          |              | $T_J = 25^\circ\text{C}$ , $22\text{V} \leq V_i \leq 33\text{V}$ , $I_o = 40\text{mA}$                           |      | 64  | 300  | mV            |
| Quiescent Current        | $I_q$        | $T_J = 25^\circ\text{C}$   |      | 4.7 | 6.5  | mA            |
| Quiescent current Change | $\Delta I_q$ | $T_J = 0 \sim 125^\circ\text{C}$ , $22\text{V} \leq V_i \leq 33\text{V}$ , $I_o = 40\text{mA}$                   |      |     | 1.5  | mA            |
|                          |              | $T_J = 0 \sim 125^\circ\text{C}$ , $V_i = 26\text{V}$ , $1\text{mA} \leq I_o \leq 40\text{mA}$                   |      |     | 0.1  | mA            |
| Output Noise Voltage     | $V_N$        | $T_J = 25^\circ\text{C}$ , $10\text{Hz} \leq f \leq 100\text{kHz}$   |      | 89  |      | $\mu\text{V}$ |
| Ripple Rejection         | RR           | $T_J = 0 \sim 125^\circ\text{C}$ , $21.5\text{V} \leq V_i \leq 31.5\text{V}$ , $f = 120\text{Hz}$                | 32   | 36  |      | dB            |
| Dropout Voltage          | $V_D$        | $T_J = 25^\circ\text{C}$   |      | 1.7 |      | V             |

## ■ Typical Application



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

# LM78L18

## ■ Typical Characteristics

