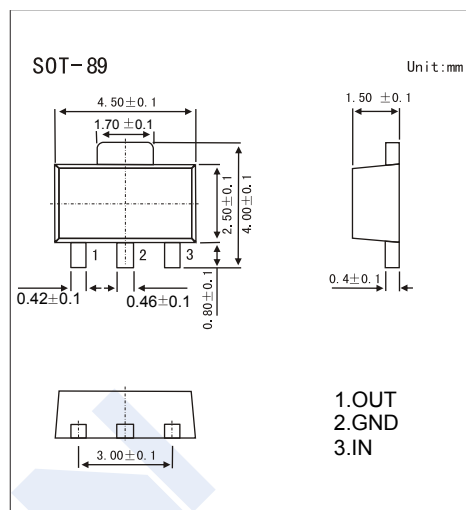


## Three-Terminal Voltage Regulator 78L03

### ■ Features

- Maximum output current:  $I_{OM}=0.1A$ .
- Output voltage:  $V_O=3.3V$ .
- Continuous total dissipation:  $P_D: 0.5W$



### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

| Parameter                            | Symbol    | Rating      | Unit       |
|--------------------------------------|-----------|-------------|------------|
| Input Voltage                        | $V_I$     | 30          | V          |
| Operating junction temperature range | $T_{OPR}$ | 0 to +125   | $^\circ C$ |
| Storage Temperature Range            | $T_{STG}$ | -55 to +150 | $^\circ C$ |

### ■ Electrical Characteristics ( $V_I=8.3V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_1=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                | Symbol       | Test conditions                                         | Min   | Typ | Max   | Unit    |
|--------------------------|--------------|---------------------------------------------------------|-------|-----|-------|---------|
| Output voltage           | $V_O$        | $T_J=25^\circ C$                                        | 3.173 | 3.3 | 3.432 | V       |
|                          |              | $5.8V \leq V_I \leq 20V, I_O=5mA-100mA$                 | 3.142 | 3.3 | 3.465 | V       |
| Load regulation          | $\Delta V_O$ | $T_J=25^\circ C, I_O=5mA-100mA$                         |       | 15  | 60    | mV      |
|                          |              | $T_J=25^\circ C, I_O=5mA-40mA$                          |       | 5   | 30    | mV      |
| Line regulation          | $\Delta V_O$ | $5.8V \leq V_I \leq 20V, T_J=25^\circ C, I_{OUT}=40mA$  |       | 50  | 150   | mV      |
| Quiescent current        | $I_q$        | $T_J=25^\circ C$                                        |       | 3   | 6     | mA      |
| Quiescent current change | $\Delta I_q$ | $0^\circ C < T_J < 125^\circ C, 5V \leq V_I \leq 20V$   |       |     | 1.5   | mA      |
|                          |              | $0^\circ C < T_J < 125^\circ C, 5mA \leq I_O \leq 40mA$ |       |     | 0.1   | mA      |
| Output noise voltage     | $V_N$        | $10Hz \leq f \leq 100KHz$                               |       | 40  |       | $\mu V$ |
| Ripple rejection         | RR           | $5.8V \leq V_I \leq 20V, f=120Hz, T_J=25^\circ C$       | 41    | 49  |       | dB      |
| Dropout voltage          | $V_d$        | $T_J=25^\circ C, I_{OUT}=100mA$                         |       | 2   |       | V       |

### ■ Typical application.

