



**JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD**

## SOT-23-3L Encapsulate Three Terminal Voltage Regulator

### CJ78L05 Three-terminal positive voltage regulator

## FEATURES

Maximum Output current

 $I_{OM}: 0.1 \text{ A}$ 

Output voltage

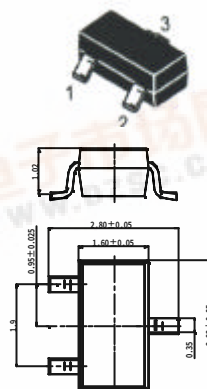
 $V_o: \quad 5 \text{ V}$ 

Operating and storage junction temperature range

$T_J, T_{stg}$ : -55°C to +150°C

**S0T-23-3L**

1. OUT  
2. IN  
3. GND



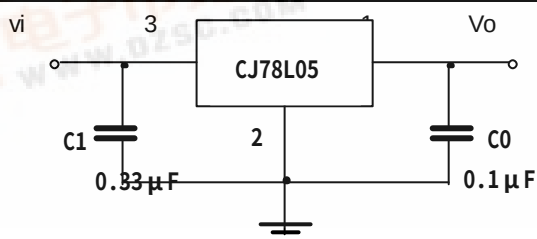
**ABSOLUTE MAXIMUM RATINGS** (Operating temperature range applies unless otherwise specified)

| Parameter                            | Symbol    | Value    | Units |
|--------------------------------------|-----------|----------|-------|
| Input Voltage                        | $V_I$     | 30       | V     |
| Operating Junction Temperature Range | $T_{OPR}$ | 0—+125   | °C    |
| Storage Temperature Range            | $T_{STG}$ | -55—+150 | °C    |

**ELECTRICAL CHARACTERISTICS**( $V_I=10V$ ,  $I_o=40mA$ ,  $0^{\circ}C<T_j<125^{\circ}C$ ,  $C_1=0.33\mu F$ ,  $C_o=0.1\mu F$ , unless otherwise specified )

| Parameter                | Symbol         | Test conditions                                                | MIN  | TYP | MAX  | UNIT        |
|--------------------------|----------------|----------------------------------------------------------------|------|-----|------|-------------|
| Output voltage           | Vo             | Tj=25°C                                                        | 4.8  | 5.0 | 5.2  | V           |
|                          |                | 7V≤V <sub>i</sub> ≤20V, I <sub>o</sub> =1mA-40mA               | 4.75 | 5.0 | 5.25 | V           |
|                          |                | 7V≤V <sub>i</sub> ≤V <sub>MAX</sub> , I <sub>o</sub> =1mA-70mA | 4.75 | 5.0 | 5.25 | V<br>(note) |
| Load Regulation          | △Vo            | Tj=25°C, I <sub>o</sub> =1mA-100mA                             |      | 11  | 60   | mV          |
|                          |                | Tj=25°C, I <sub>o</sub> =1mA-40mA                              |      | 5.0 | 30   | mV          |
| Line regulation          | △Vo            | 7V≤V <sub>i</sub> ≤20V, Tj=25°C                                |      | 32  | 150  | mV          |
|                          |                | 8V≤V <sub>i</sub> ≤20V, Tj=25°C                                |      | 26  | 100  | mV          |
| Quiescent Current        | Iq             | 25oC                                                           |      | 3.8 | 6    | mA          |
| Quiescent Current Change | △ Iq           | 8V≤V <sub>i</sub> ≤20V                                         |      |     | 1.5  | mA          |
|                          | △ Iq           | 1mA≤V <sub>i</sub> ≤40mA                                       |      |     | 0.1  | mA          |
| Output Noise Voltage     | V <sub>n</sub> | 10Hz≤f≤100KHz                                                  |      | 42  |      | uV          |
| Ripple Rejection         | RR             | 8V≤V <sub>i</sub> ≤18V, f=120Hz, Tj=25°C                       | 41   | 80  |      | dB          |
| Dropout Voltage          | Vd             | Tj=25°C                                                        |      | 1.7 |      | V           |

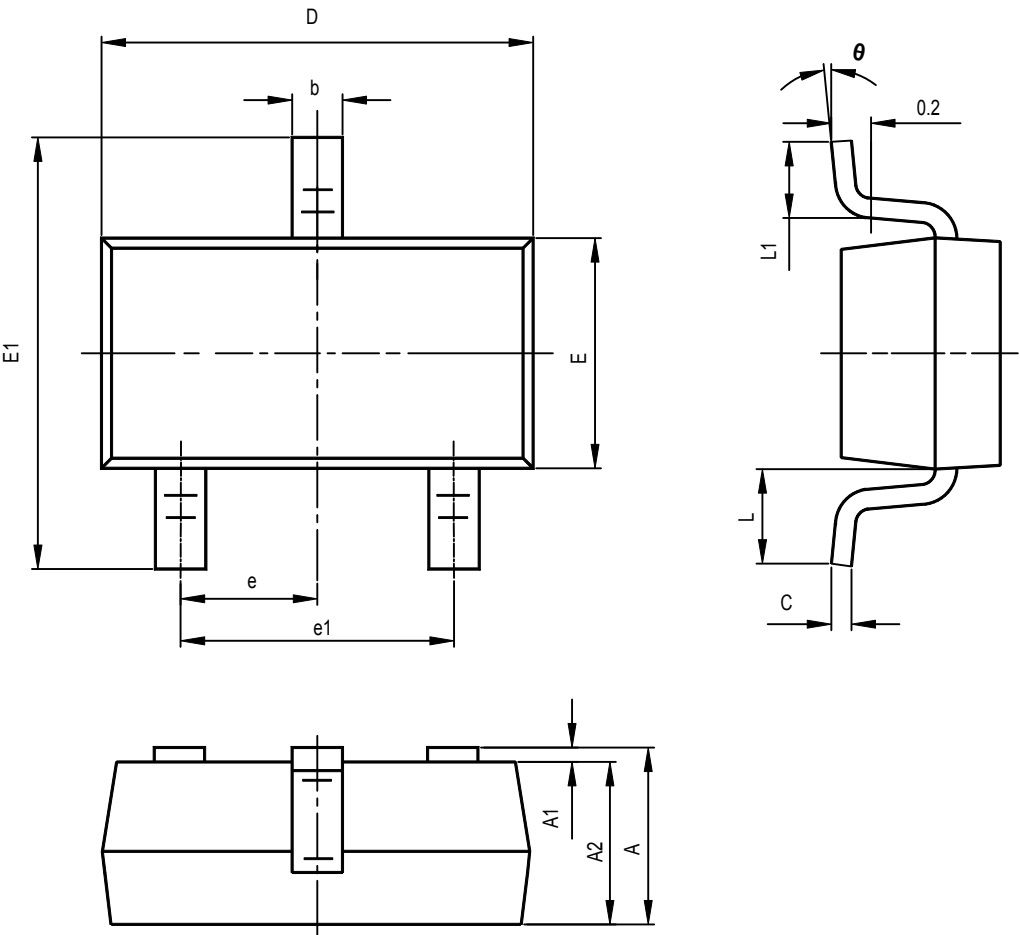
## TYPICAL APPLICATION



Note 1: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.



SOT-23-3L PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.400 | 0.012                | 0.016 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1     | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.950TPY                  |       | 0.037TPY             |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.700REF                  |       | 0.028REF             |       |
| L1     | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |