

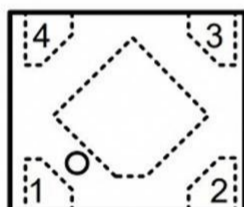
### Features

- 0.8 $\mu$ A Current at no Load(TYP.)
- $\pm 2\%$  Output Accuracy
- 300mA Output Current
- Compact package: DFN1X1-4 & SOT23-5 & SOT23-3L & SOT23

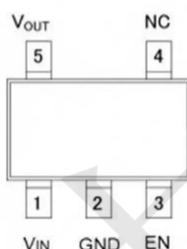
### Applications

- Portable consumer equipments
- Radio control systems
- Wireless Communication Equipments
- Ultra Low Power Micro controller

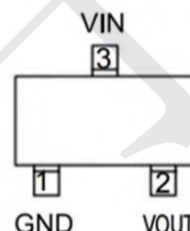
### PIN CONFIGURATION



DFN1X1-4



SOT23-5



SOT23-3L & SOT23

| Pin Number |         |          |       | Pin Name         | Pin Function           |
|------------|---------|----------|-------|------------------|------------------------|
| DFN1X1-4   | SOT23-5 | SOT23-3L | SOT23 |                  |                        |
| 1          | 5       | 2        | 2     | V <sub>OUT</sub> | Output Pin             |
| 2          | 2       | 1        | 1     | GND              | Ground                 |
| 3          | 3       | --       | --    | EN               | Chip Enable Pin        |
| 4          | 1       | 3        | 3     | V <sub>IN</sub>  | Power Input Pin        |
| --         | 4       | --       | --    | NC               | No Internal Connection |

### Ordering Information

TP132LC 33 D4

PACKAGE TYPE

D4:DFN1X1-4

S5:SOT23-5

S3L:SOT23-3L

S3:SOT23

OUTPUT VOLTAGE

12: 1.2V    15: 1.5V

18: 1.8V    25: 2.5V

28: 2.8V    30: 3.0V

33: 3.3V    36: 3.6V

Example: TP132LC33D4

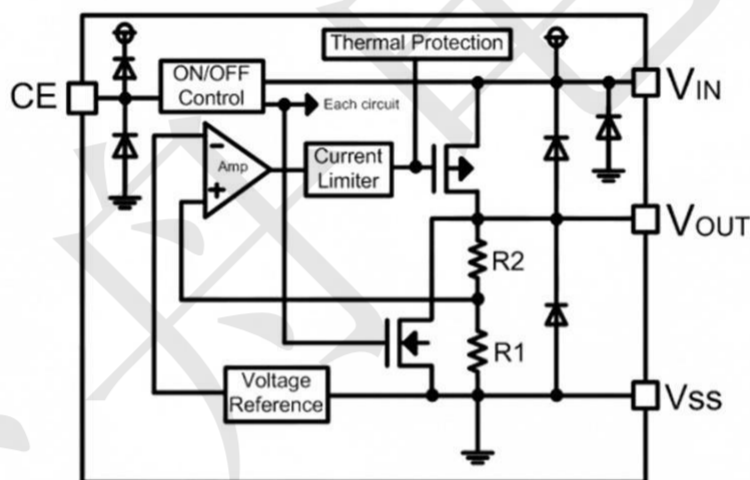
→ 3.3V Version, in DFN1X1-4 Package & Tape & Reel Packing Type

## Absolute Maximum Ratings

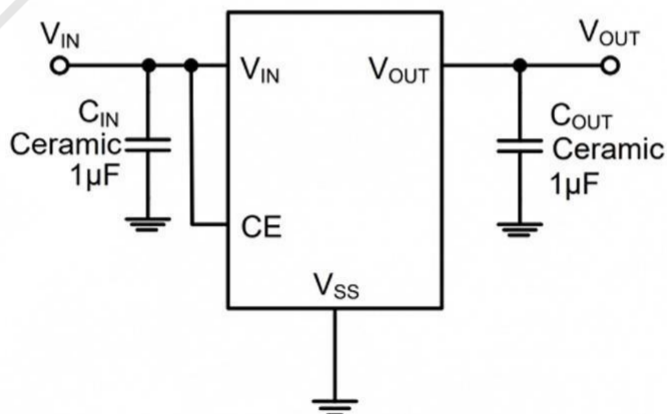
over operating free-air temperature range (unless otherwise noted)

|                   |                                       | MIN                | MAX       | UNIT |
|-------------------|---------------------------------------|--------------------|-----------|------|
| VIN               | Continuous input voltage range        | -0.3               | 6.5       | V    |
| VOUT              | Output voltage range                  | -0.3               | VIN+0.3   |      |
| Current           | Maximum output current                | Internally limited |           | mA   |
| Temperature       | Operating Temperature, Topr           | -40                | +85       | °C   |
|                   | Storage, Tstg                         | -40                | +150      |      |
|                   | Welding temperature and time, Tsolder |                    | +260, 10s |      |
| Power Dissipation | Pd DFN1X1-4                           | 400                |           | mW   |
|                   | Pd SOT23-5                            | 300                |           |      |
|                   | Pd SOT23-3L                           | 250                |           |      |

## BLOCK DIAGRAM



## Typical Application Circuit



### Electrical Characteristics (TA=25°C, unless otherwise specified)

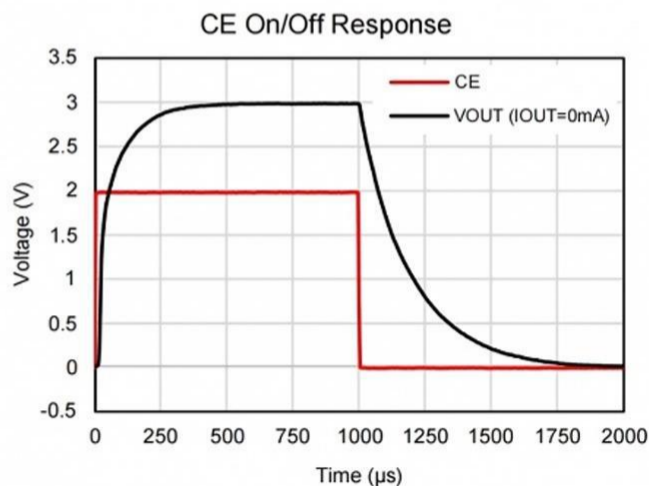
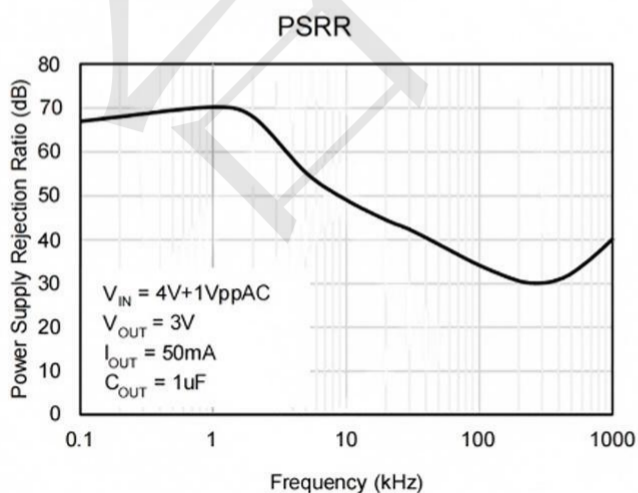
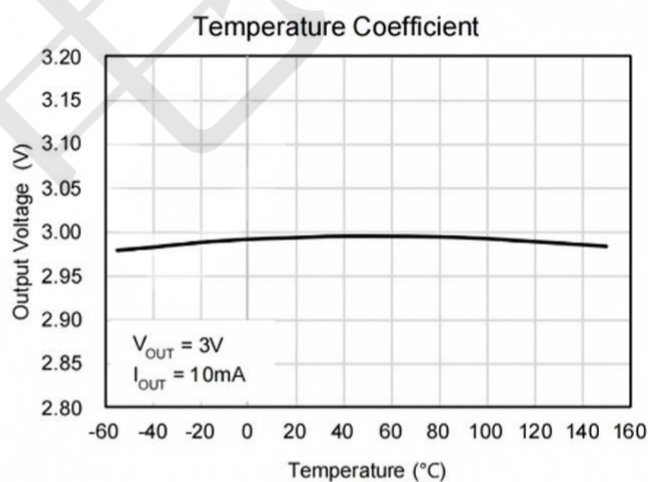
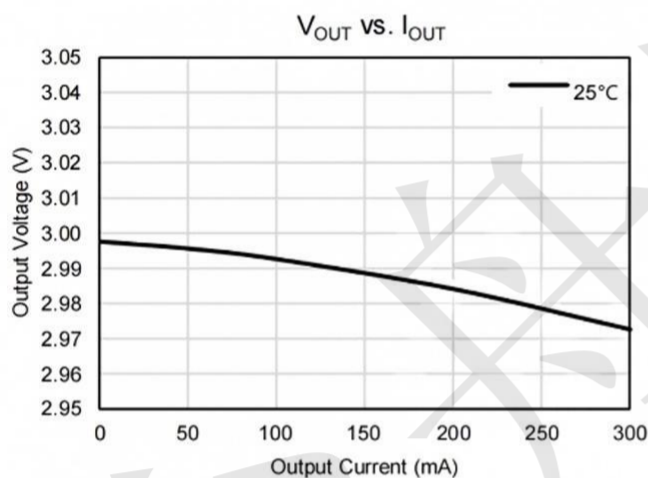
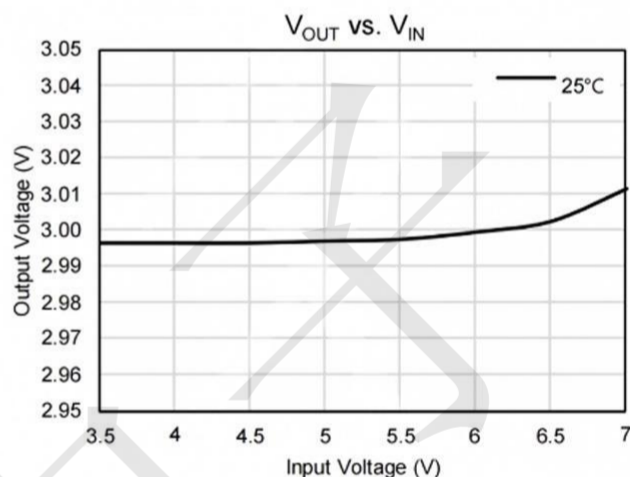
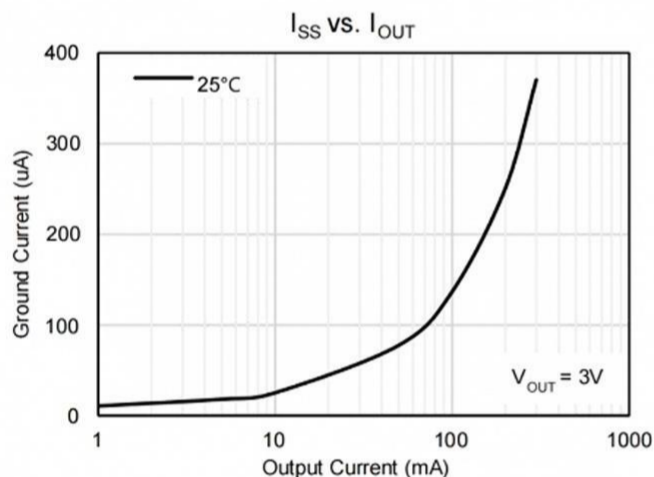
| PARAMETER                      | SYMBOL                                                | CONDITIONS                                               | MIN.   | TYP. | MAX.     | UNITS    |
|--------------------------------|-------------------------------------------------------|----------------------------------------------------------|--------|------|----------|----------|
| Input Voltage                  | $V_{IN}$                                              | --                                                       | 1.8    | --   | 5.5      | V        |
| Output Voltage                 | $V_{OUT}$                                             | --                                                       | 1.2    | --   | 3.6      | V        |
| DC Output Accuracy             | --                                                    | $I_{OUT}=1mA$                                            | -2     | --   | 2        | %        |
| Output Current                 | $I_{OUT}$                                             | $V_{IN}=1.8V$                                            | 150    | --   | --       | mA       |
|                                |                                                       | $V_{IN}=4.3V$                                            | 350    | --   | --       |          |
| Dropout Voltage                | $V_{dif}^{(2)}$                                       | $I_{OUT}=100mA, V_{OUT}=3.0V$                            | --     | 110  | --       | mV       |
| Supply Current                 | $I_{SS}$                                              | $I_{OUT}=0$                                              | --     | 0.8  | 1.3      | $\mu A$  |
| Standby Current                | $I_{STBY}$                                            | $CE=V_{SS}$                                              | --     | --   | 0.1      | $\mu A$  |
| Load Regulation                | $\Delta V_{OUT}$                                      | $V_{IN}=V_{OUT}+1V$<br>$1mA \leq I_{OUT} \leq 100mA$     | --     | 5    | --       | mV       |
| Line Regulation                | $\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$ | $I_{OUT}=10mA$<br>$V_{OUT}+1V \leq V_{IN} \leq 6V$       | --     | 0.03 | 0.2      | %/V      |
| Temperature Coefficient        | $\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta T_A}$    | $I_{OUT}=10mA$<br>$-40^\circ C < T_A < 85^\circ C$       | --     | 50   | --       | ppm      |
| Output Current Limit           | $I_{LIM}$                                             | $V_{OUT}=90\% \times V_{OUT}$<br>( $V_{OUT} \geq 3.0V$ ) | 350    | --   | --       | mA       |
| Short Current                  | $I_{SHORT}$                                           | $V_{OUT}=V_{SS}$                                         | --     | 10   | --       | mA       |
| Power Supply Rejection Ratio   | PSRR                                                  | $I_{OUT}=50mA$                                           | 100Hz  | --   | 65       | dB       |
|                                |                                                       |                                                          | 1kHz   | --   | 70       |          |
|                                |                                                       |                                                          | 10kHz  | --   | 50       |          |
|                                |                                                       |                                                          | 100kHz | --   | 35       |          |
| CE "High" Voltage              | $V_{CE}^{"H"}$                                        | --                                                       | 1.5    | --   | $V_{IN}$ | V        |
| CE "Low" Voltage               | $V_{CE}^{"L"}$                                        | --                                                       | --     | --   | 0.3      | V        |
| COUT Auto-Discharge Resistance | $R_{DISCHRG}$                                         | $V_{IN}=5V, V_{OUT}=3.0V$<br>$V_{CE}=V_{SS}$             | --     | 200  | --       | $\Omega$ |

Note:

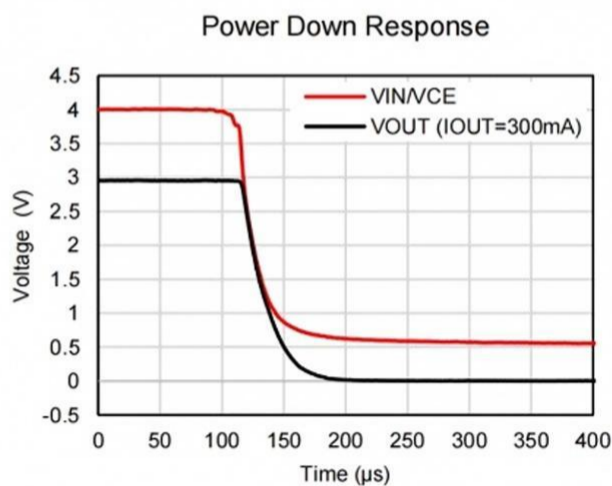
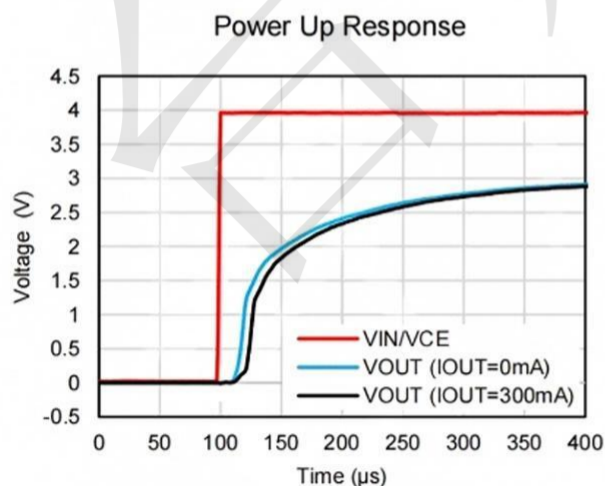
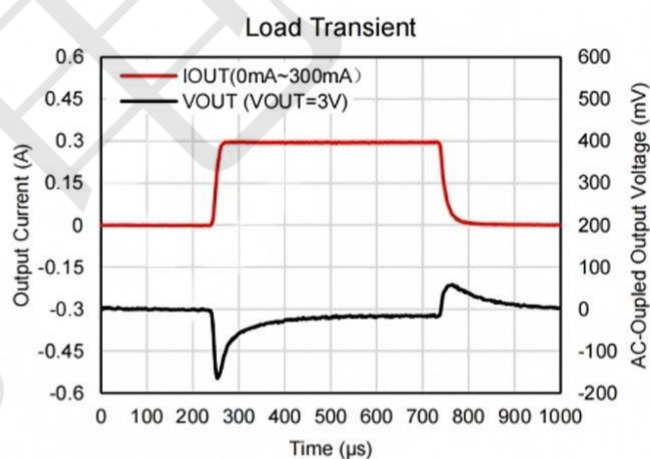
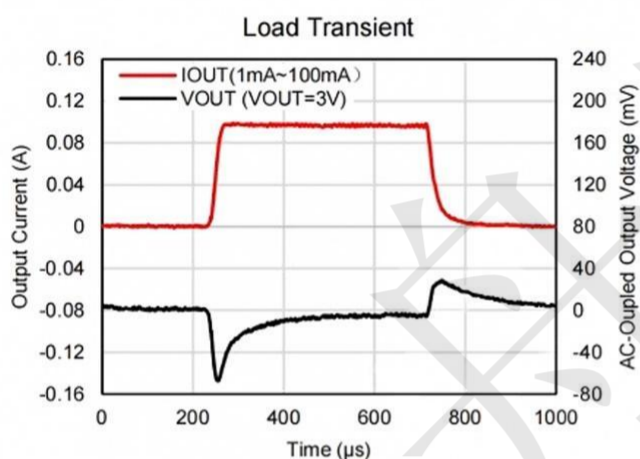
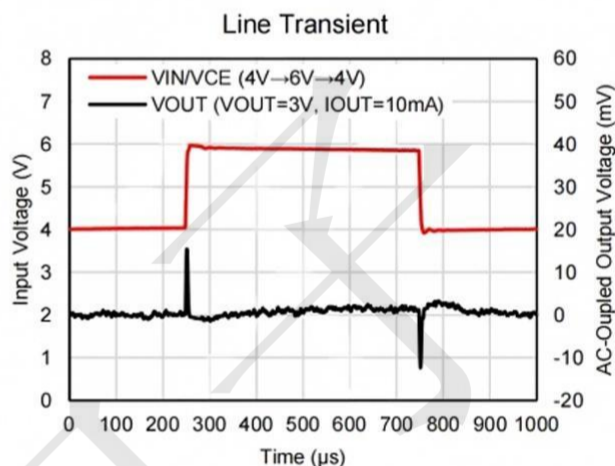
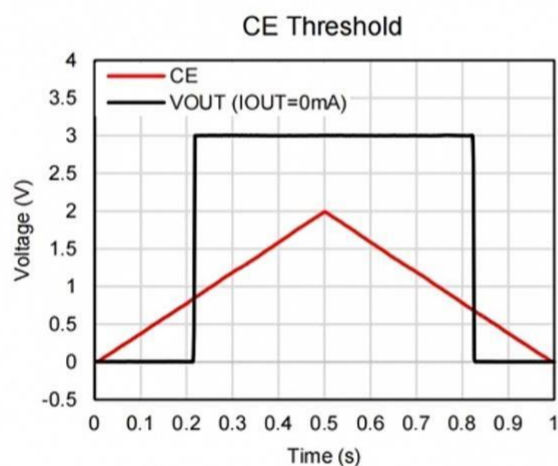
1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

2.  $V_{dif}$ : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of  $V_{OUT}$ .

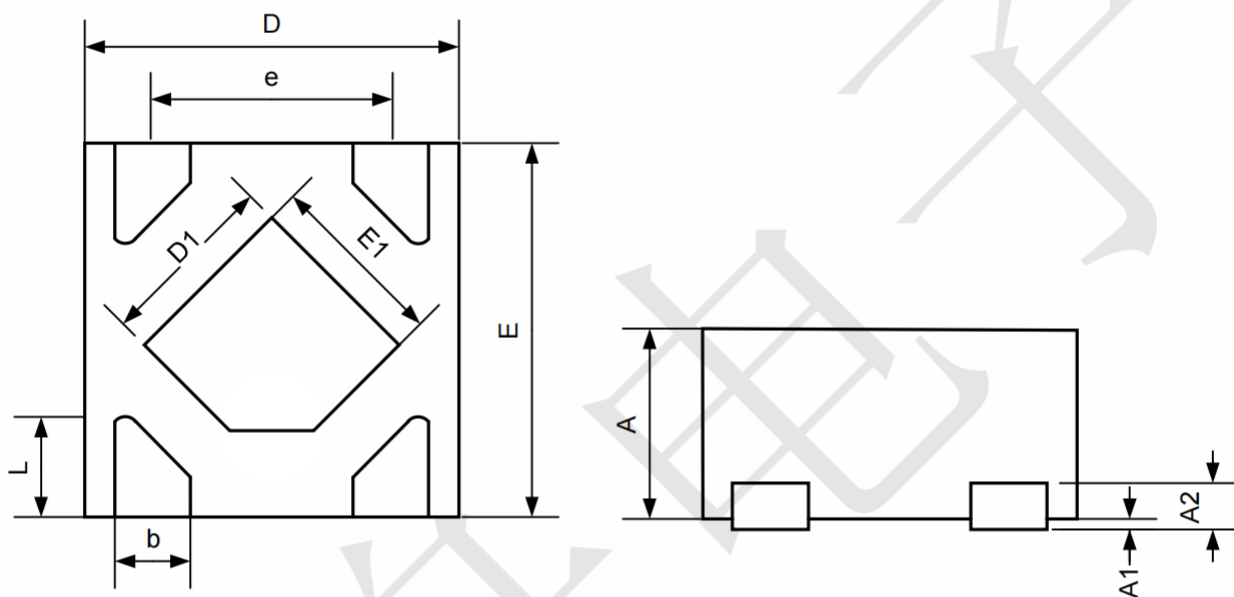
**Typical Operating Characteristics (25 °C, unless otherwise noted)**



### Typical Operating Characteristics (25 °C, unless otherwise noted)



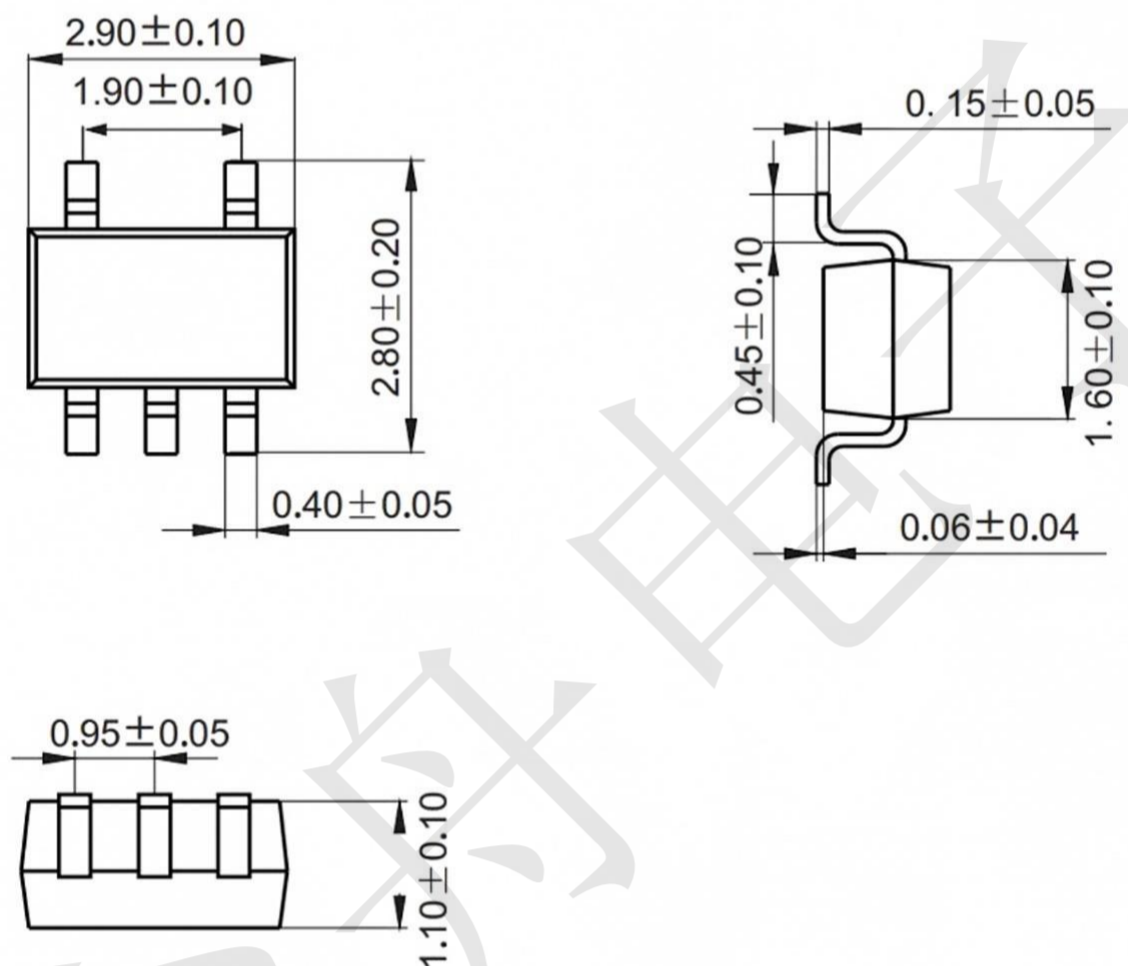
**Package Dimensions**  
**DFN1×1-4**



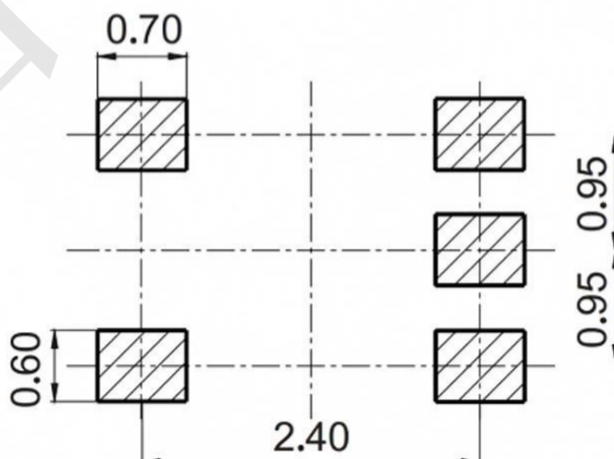
| Symbol | Dimensions In Millimeters |       |
|--------|---------------------------|-------|
|        | Min                       | Max   |
| A      | 0.450                     | 0.550 |
| A1     | 0.000                     | 0.050 |
| A2     | 0.125REF                  |       |
| b      | 0.150                     | 0.250 |
| D      | 0.950                     | 1.050 |
| D1     | 0.380                     | 0.580 |
| E      | 0.950                     | 1.050 |
| E1     | 0.380                     | 0.580 |
| e      | 0.650BSC                  |       |
| L      | 0.150                     | 0.350 |

**Package Outline Dimensions (unit: mm)**

SOT23-5

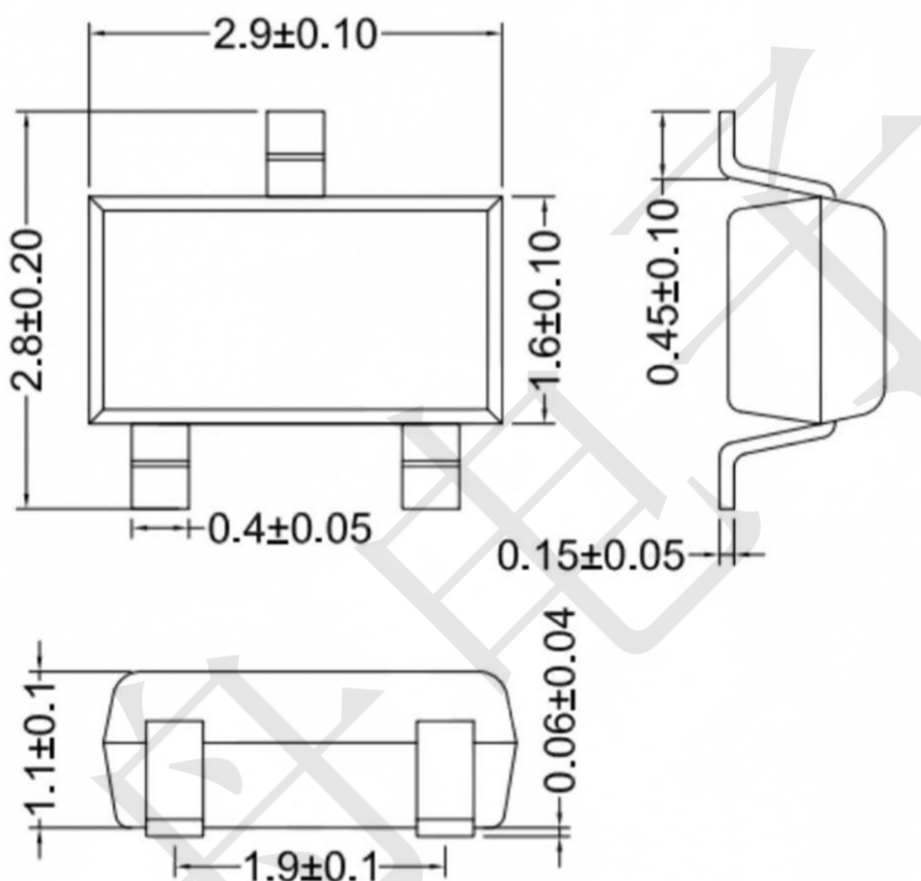


**Mounting Pad Layout (unit: mm)**

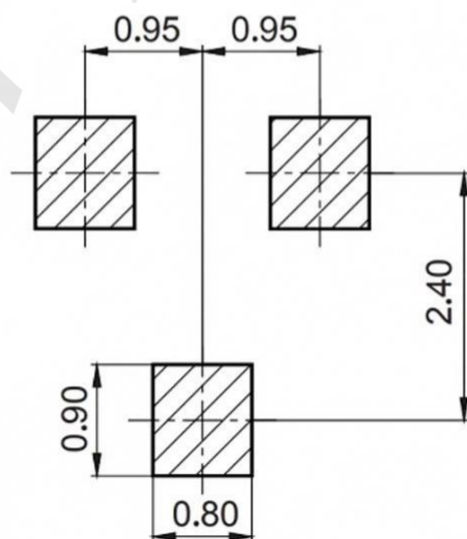


**Package Outline Dimensions (unit: mm)**

SOT23-3L

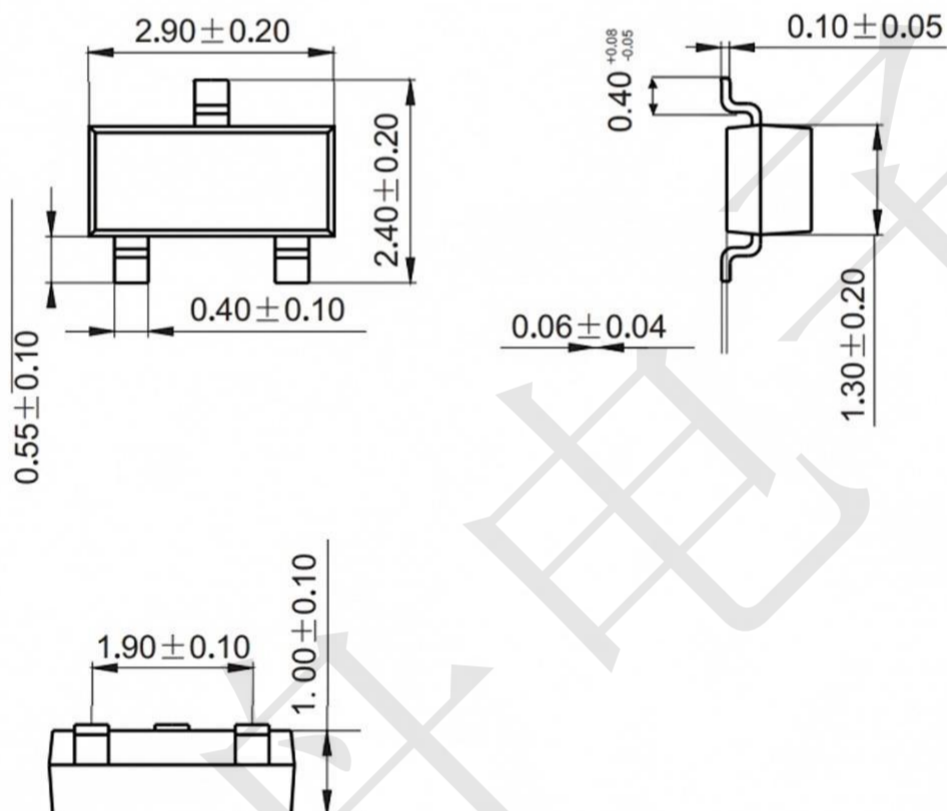


**Mounting Pad Layout (unit: mm)**



**Package Outline Dimensions (unit: mm)**

SOT23



**Mounting Pad Layout (unit: mm)**

