

General Description

The LTP3558 is a high voltage, low power consumption and high performance LDO. The family uses an advanced CMOS process and a P-MOSFET pass device to achieve fast start-up, with high output voltage accuracy. The LTP3558 is stable with a 1.0 μ F~10 μ F ceramic output capacitor, and uses a precision voltage reference and feedback loop to achieve a worst-case accuracy of 2% over all load, line, process, and temperature variations.

Features

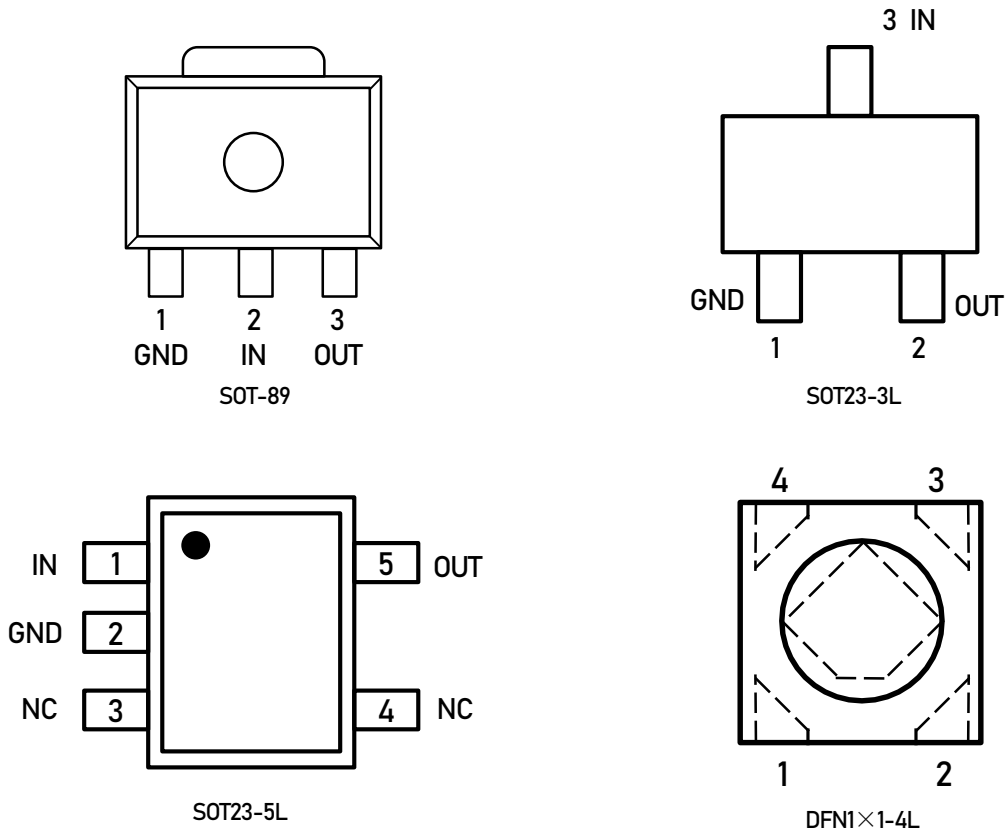
- Wide Input Voltage Range: up to 36V
- Output Current: 200mA
- Standard Fixed Output Voltage Options: 1.8V, 2.5V, 3.0V, 3.3V, 3.6V, and 5.0V
- Other Output Voltage Options Available on Request
- Low I_Q : 1.5 μ A
- Low Dropout Voltage
- Short current protection: 100mA
- Excellent Load and Line Transient Response
- Line Regulation: 0.01%/V Typically
- Available Packages:

Order Information

| Model | Package | Ordering Number ^{Note1} | Packing Option |
|---------|-----------|----------------------------------|----------------------|
| LTP3558 | SOT23-3L | LTP3558-xxXT3 | Tape and Reel, 3000 |
| | SOT23-5L | LTP3558-xxXT5 | Tape and Reel, 3000 |
| | DFN1x1-4L | LTP3558-xxXF4 | Tape and Reel, 10000 |
| | SOT-89 | LTP3558-xxXT4 | Tape and Reel, 1000 |

Note1: xx stands for output voltage, e.g. if xx = 18, the output voltage is 1.8V; if xx = 30, the output voltage is 3.0V.

Pin Configuration



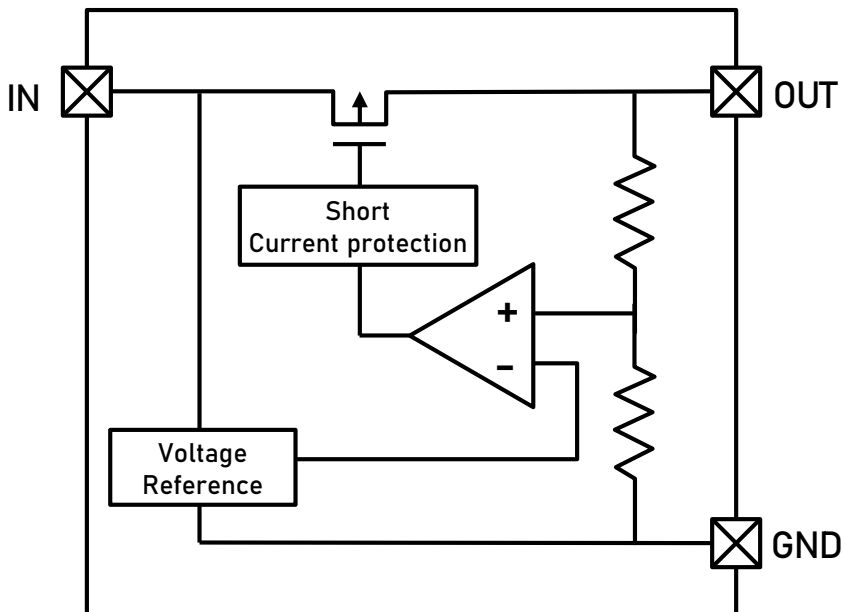
TOP VIEW

Pin Function

| Pin No. | | Pin Name | Pin Function |
|---------|----------|----------|---|
| SOT-89 | SOT23-3L | | |
| 1 | 1 | GND | Ground. |
| 2 | 3 | IN | Supply input pin. Must be closely decoupled to GND with a 1μF or greater ceramic capacitor. |
| 3 | 2 | OUT | Output pin. Bypass a 1μF or greater ceramic capacitor from this pin to ground. |

| Pin No. | | Pin Name | Pin Function |
|----------|-----------|----------|---|
| SOT23-5L | DFN1x1-4L | | |
| 1 | 3 | IN | Supply input pin. Must be closely decoupled to GND with a 1 μ F or greater ceramic capacitor. |
| 2 | 2 | GND | Ground. |
| 3 | 4 | NC | No connection. |
| 4 | | NC | No connection. |
| 5 | 1 | OUT | Output pin. Bypass a 1 μ F or greater ceramic capacitor from this pin to ground. |

Block Diagram



Functional Description

Input Capacitor

A 1 μ F-10 μ F ceramic capacitor is recommended to connect between V_{in} and GND pins to decouple input power supply glitch and noise. The amount of the capacitance may be increased without limit. This input capacitor must be located as close as possible to the device to assure input stability and less noise. For PCB layout, a wide copper trace is required for both V_{in} and GND.

Output Capacitor

An output capacitor is required for the stability of the LDO. The recommended output capacitance is from 1 μ F to 10 μ F, Equivalent Series Resistance (ESR) is from 5m Ω to 100m Ω , and temperature characteristics are X7R or X5R. Higher capacitance values help to improve load/line transient response. The output capacitance may be increased to keep low undershoot/overshoot. Place output capacitor as close as possible to OUT and GND pins.

Low Quiescent Current

The LTP3558, consuming only around 1.5 μ A for all input range and output loading, provides great power saving in portable and low power applications.

Short Current Limit Protection

When output current at the OUT pin is higher than current limit threshold or the OUT pin is short-circuit to GND, the short current limit protection will be triggered and clamp the output current to approximately 100mA to prevent over-current and to protect the regulator from damage due to overheating.

Absolute Maximum Ratings

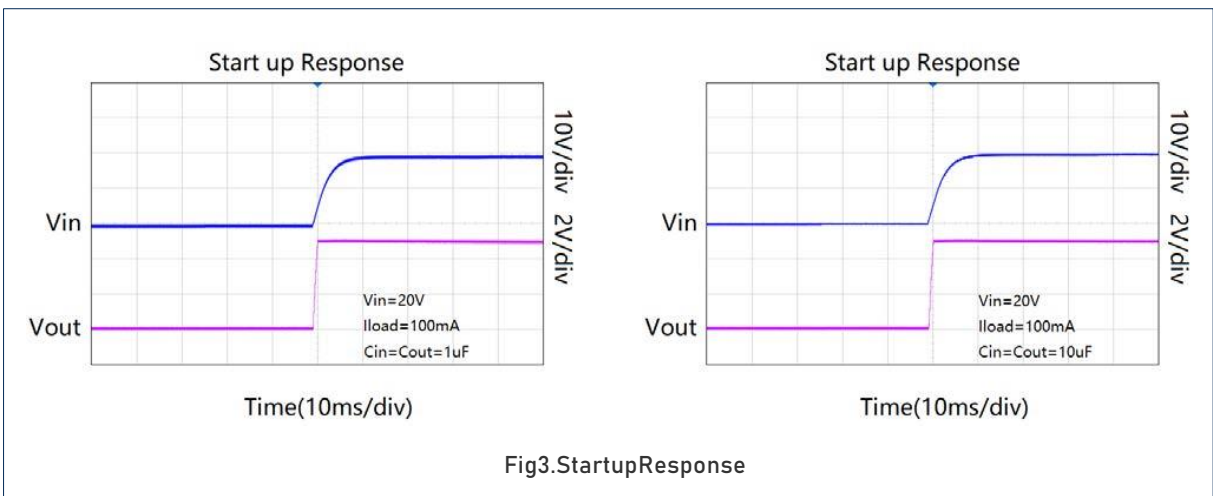
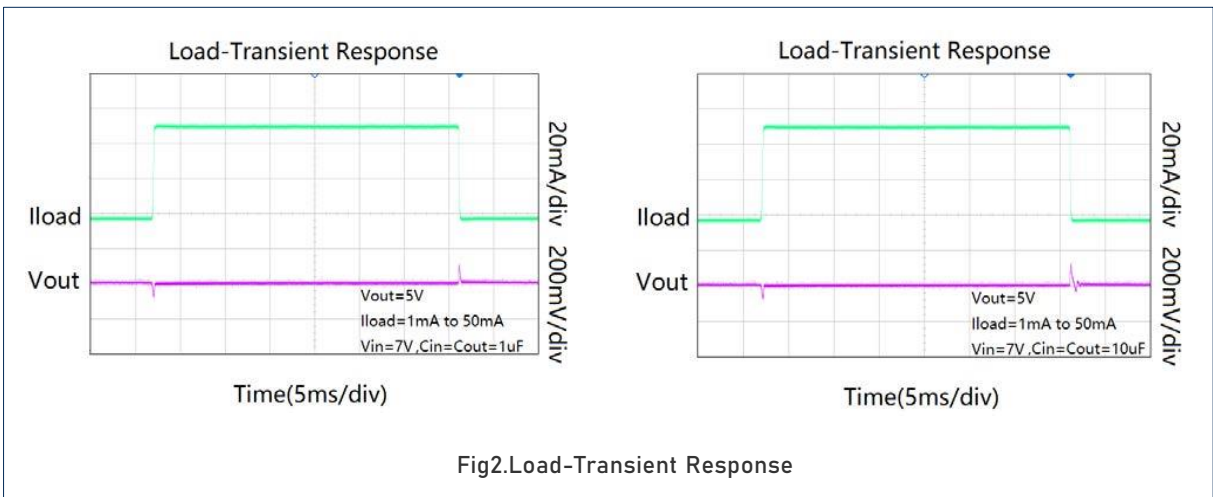
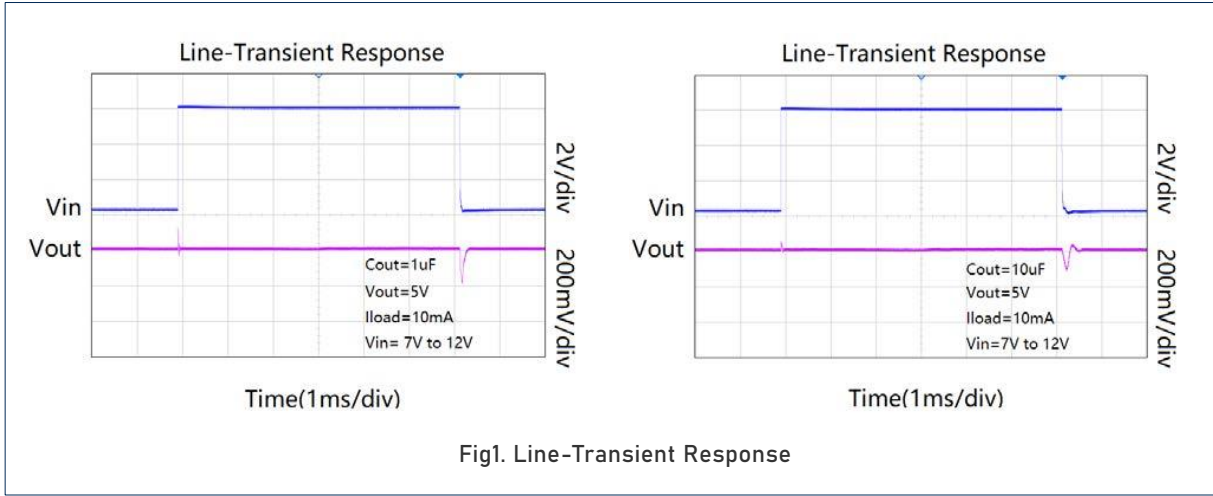
| Parameter | Rating | Unit |
|--|---------------------------|--------------|
| IN pin to GND pin | -0.3 to 40 | V |
| OUT pin to GND pin | -0.3 to 6 | V |
| Thermal Resistance (Junction to Ambient) | SOT23-3L | 360 |
| | SOT23-5L | 250 |
| | DFN1X1-4L | 180 |
| | SOT-89 | 135 |
| Operating Junction Temperature | -40 to 125 | $^{\circ}$ C |
| Storage Temperature | -65 to 150 | $^{\circ}$ C |
| Lead Temperature (Soldering, 10 sec) | 300 | $^{\circ}$ C |
| ESD (HBM mode) | ESDA/JEDEC JS-001-2017 | \pm 2000V |

Electrical Characteristics

($V_{IN} = V_{OUT} + 2V$, $T_a = 25^\circ C$, $C_{IN} = 10\mu F$, $C_{OUT} = 10\mu F$ unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------|--------------|---|-----------------------|------|-----------------------|---------------|
| Input Voltage Operation Range | V_{IN} | | | | 36 | V |
| Dropout Voltage | V_{DROPO} | $V_{OUT} = 5V$, $I_{OUT} = 150mA$ | | 720 | | mV |
| | | $V_{OUT} = 5V$, $I_{OUT} = 100mA$ | | 420 | | |
| | | $V_{OUT} = 3.3V$, $I_{OUT} = 150mA$ | | 820 | | |
| | | $V_{OUT} = 3.3V$, $I_{OUT} = 100mA$ | | 520 | | |
| DC Supply Quiescent Current | I_Q | | | 1.5 | 3 | μA |
| Regulated Output Voltage | V_{OUT} | $I_{OUT} = 1mA$ | $V_{OUT} \times 0.98$ | | $V_{OUT} \times 1.02$ | V |
| Output Voltage Line Regulation | Reg_{LINE} | $V_{IN} = V_{OUT} + 1V$ to 30V, $I_{OUT} = 10mA$ ($\Delta V_{OUT} / \Delta V_{IN} / V_{OUT}$) | | 0.01 | 0.04 | %/V |
| Output Voltage Load Regulation | Reg_{LOAD} | I_{OUT} from 1mA to 150mA $V_{IN} = V_{OUT} + 2V$ | | 5 | 20 | mV |
| | | I_{OUT} from 1mA to 150mA $V_{IN} = 10V$ | | 25 | 60 | mV |
| Maximum Output Current | I_{OUT} | $V_{IN} = V_{OUT} + 1V$ | 200 | | | mA |
| Short Current Protection | I_{SHORT} | OUT short to GND | | 100 | | mA |
| Output Noise | e_N | 10Hz to 100kHz, $I_{OUT} = 30mA$, | | 90 | | μV_{RMS} |

TYPICAL PERFORMANCE CHARACTERISTICS



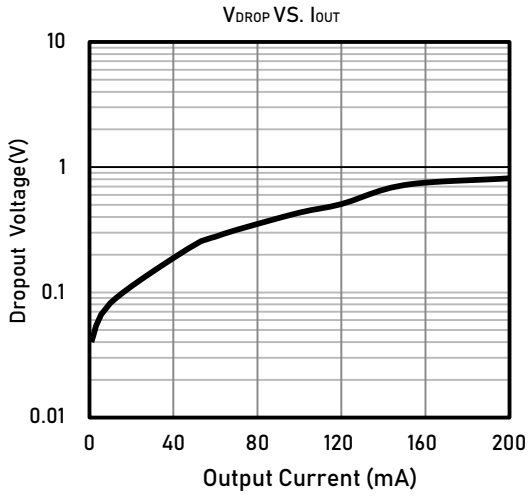


Fig4. Dropout Voltage VS Output Current

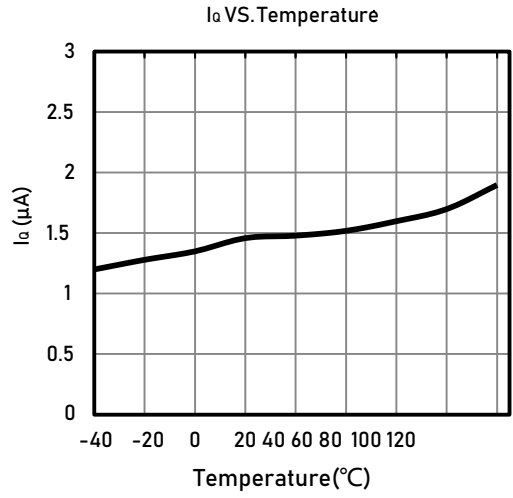
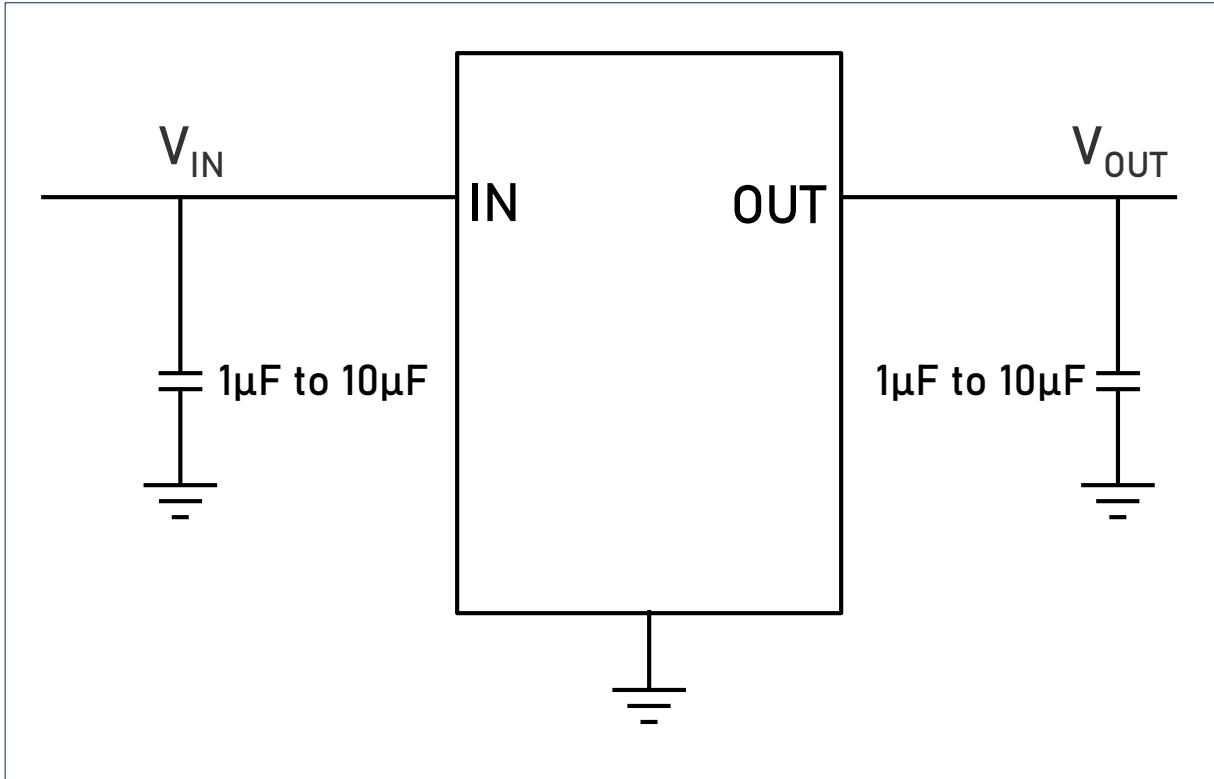


Fig5. DC Supply Quiescent Current VS Temperature

Application Circuits



CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.

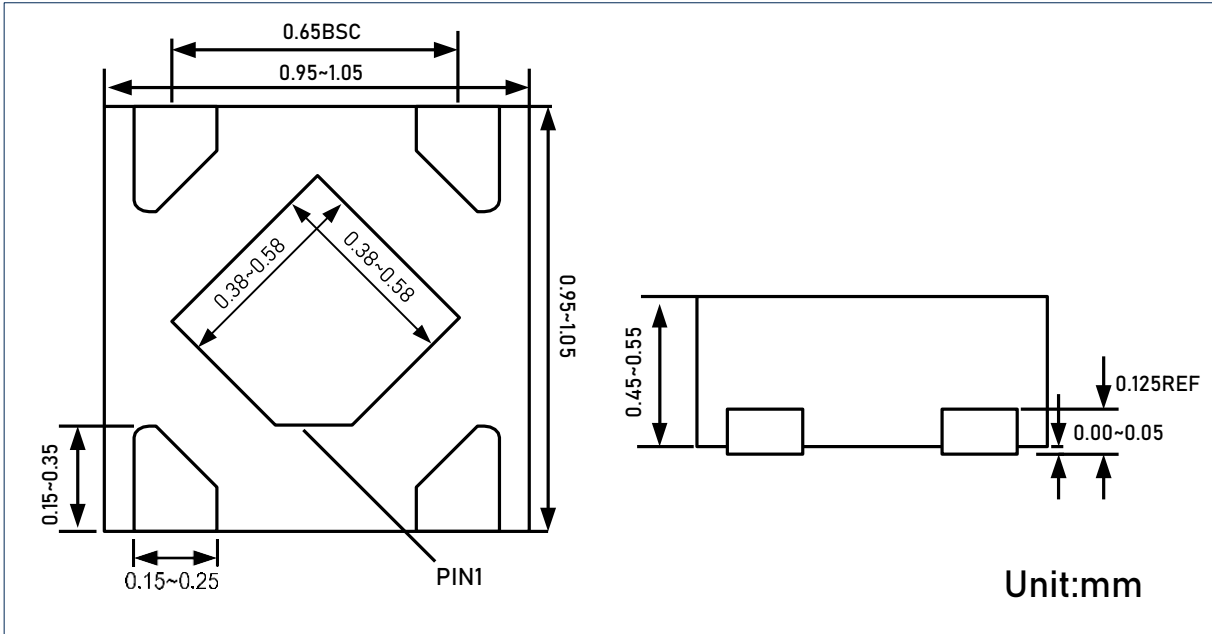
Linearin and designs are registered trademarks of Linearin Technology Corporation.

© Copyright Linearin Technology Corporation. All Rights Reserved.

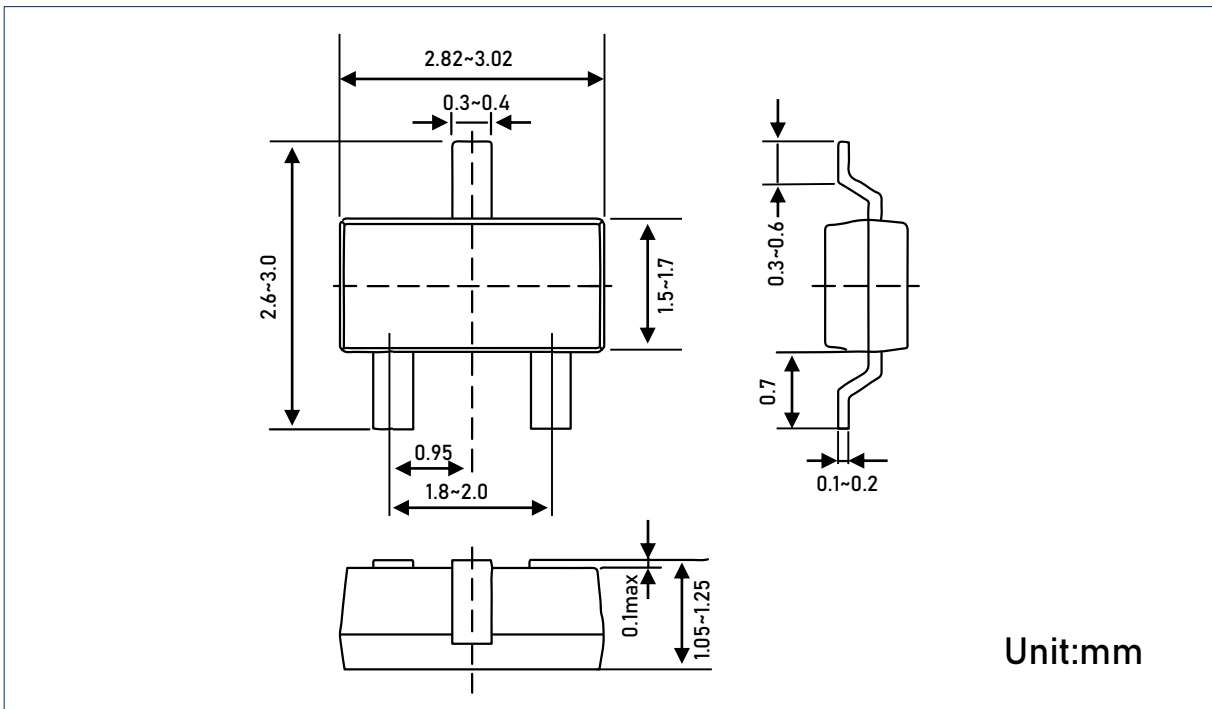
All other trademarks mentioned are the property of their respective owners. Downloaded From Oneyac.com

Package Dimension

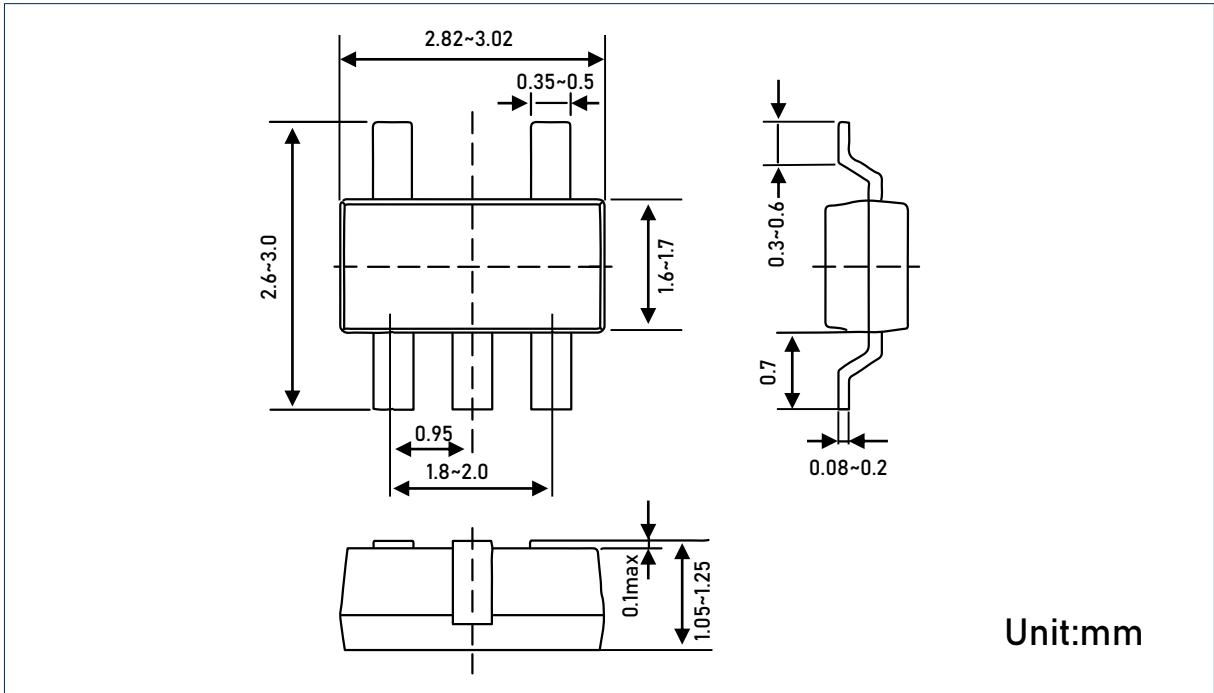
DFN1x1-4L



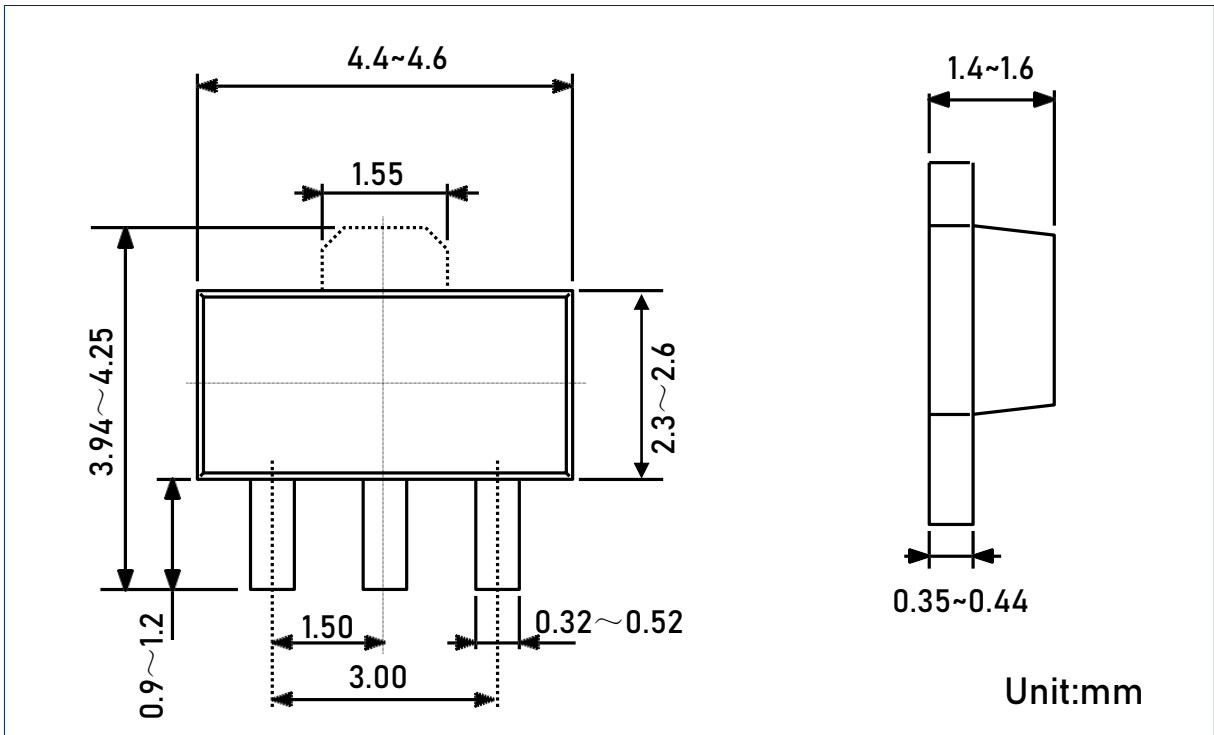
SOT23-3L



SOT23-5L



SOT-89



CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.

Linearin and designs are registered trademarks of Linearin Technology Corporation.

© Copyright Linearin Technology Corporation. All Rights Reserved.

All other trademarks mentioned are the property of their respe. Downloaded From Oneyac.com

单击下面可查看定价，库存，交付和生命周期等信息

[>>Linearin\(先积\)](#)