

### Features

- Input Voltage up to 36V
- output current up to 200mA
- output Voltage 5.0V
- 2 $\mu$ A Current at no Load
- $\pm 2\%$  Output Accuracy
- Compact package: SOT-223

### Applications

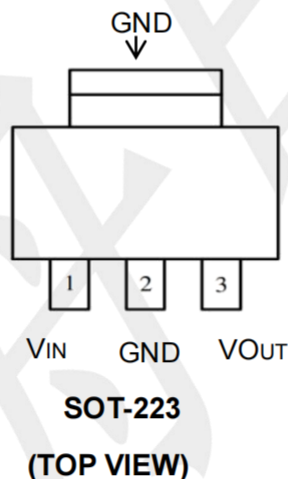
- Hand-Held Instruments
- Battery Powered Consumer Products
- Test and Measurement Equipment
- Industrial Power Supplies

### Description

The is micropower low dropout voltage regulators available in a wide variety of output voltages. These devices feature a very low quiescent current.and thermal limiting protection are provided by the presence of a short circuit at the output and an internal thermal shutdown circuit.

Due to the low input-to-output voltage differential and bias current specifications, these devices are ideally suited for battery powered computer, consumer, and industrial equipment where an extension of useful battery life is desirable.

### PIN CONFIGURATION



| Pin Number | Pin Name | Pin Function            |
|------------|----------|-------------------------|
| 1          | VIN      | Input of Supply Voltage |
| 2          | GND      | Ground                  |
| 3          | VOUT     | Output of the Regulator |

### Absolute Maximum Ratings

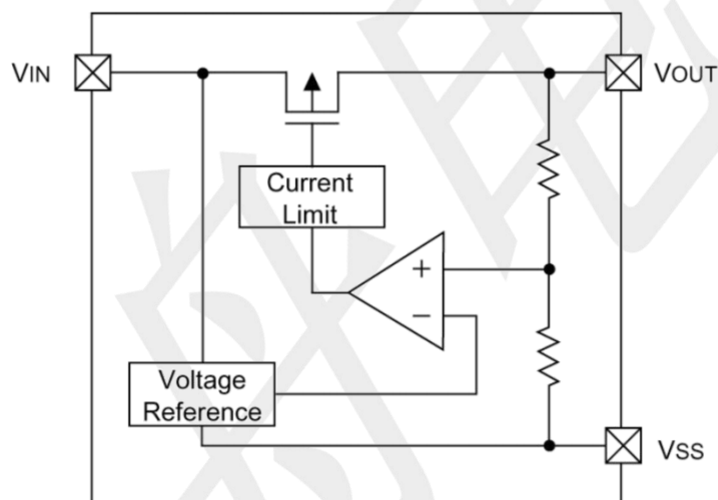
over operating free-air temperature range (unless otherwise noted)

| SYMBOL           | PARAMETER                            | RATINGS            | UNIT |
|------------------|--------------------------------------|--------------------|------|
| V <sub>IN</sub>  | Continuous input voltage range       | -0.3 ~ +40         | V    |
| Current          | Maximum output current               | Internally limited | mA   |
| T <sub>J</sub>   | Operating Junction Temperature Range | -40 ~ +85          | °C   |
| T <sub>stg</sub> | Storage temperature range            | -55 ~ 150          | °C   |

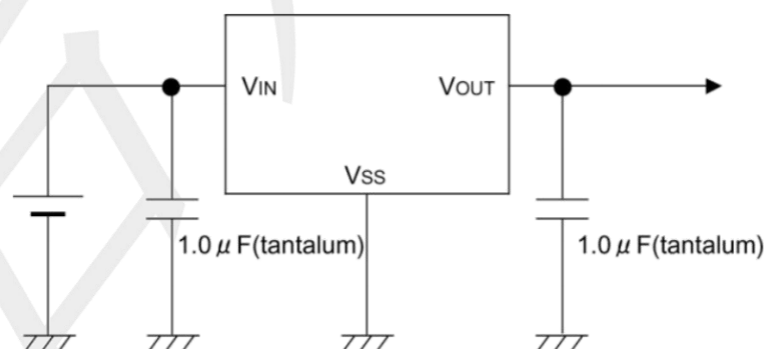
### THERMAL DATA

| PARAMETER           | SYMBOL        | RATINGS | UNIT |
|---------------------|---------------|---------|------|
| Junction to Ambient | $\theta_{JA}$ | 245     | °C/W |
| Junction to Case    | $\theta_{JC}$ | 15      | °C/W |

### BLOCK DIAGRAM



### Typical Application Circuit



### Electrical Characteristics

(TA=25°C, unless otherwise specified)

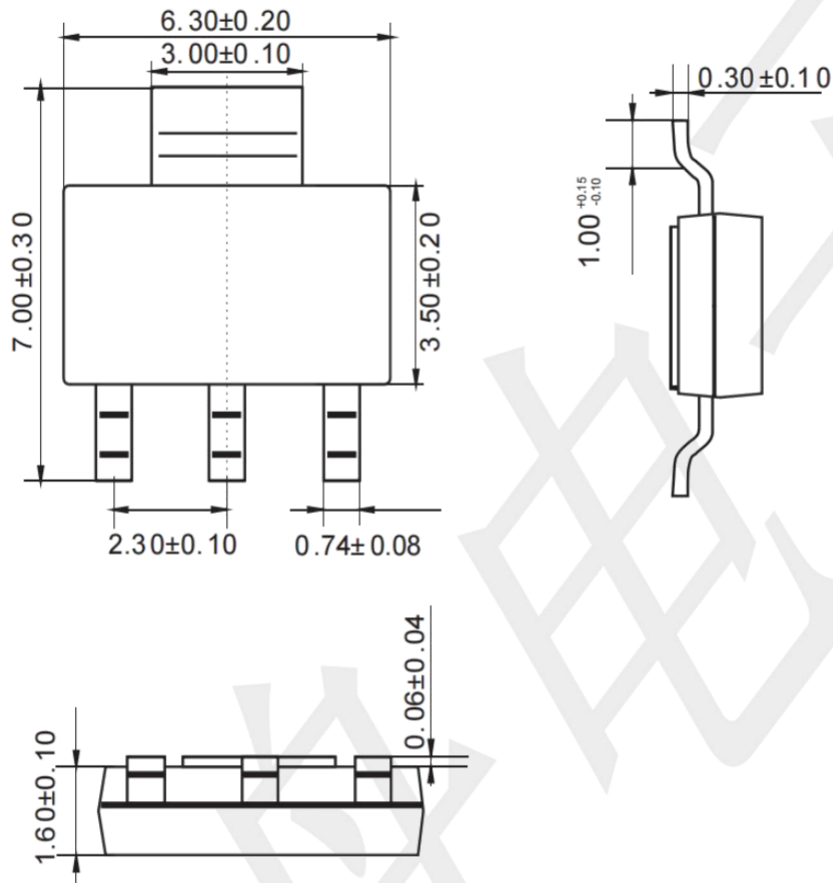
| PARAMETER                    | SYMBOL       | TEST Conditions                                      | MIN | TYP | MAX | UNIT |
|------------------------------|--------------|------------------------------------------------------|-----|-----|-----|------|
| Supply Voltage               | VIN          | IOUT = 100mA                                         | 3.0 | --  | 36  | V    |
| Output current               | IOUT         |                                                      | 0   | --  | 200 | mA   |
| DC Output Voltage Accuracy   |              | IOUT = 0.1mA                                         | -2  | --  | +2  | %    |
| Dropout Voltage (VIN-VOUT)   | IOUT = 100mA | VOUT = 5.0V                                          | --  | 600 | --  | mV   |
| Ground Current (IOUT = 0mA)  | Iq           |                                                      | --  | 1.5 | 2.0 | uA   |
| Line Regulation              | ΔLINE        | IOUT = 1mA,<br>10≤VIN≤18V                            | --  | 0.3 | --  | %    |
| Load Regulation              | ΔLOAD        | 10mA≤ IOUT ≤<br>100mA                                | --  | 0.3 | --  |      |
| Output Current Limit         | ILIM         | VOUT=0.9×<br>VOUT(NOM)                               | 300 | --  | --  | mA   |
| Power Supply Rejection Ratio | PSRR         | VOUT = 5V,<br>IOUT = 30mA,<br>VIN = 12V,<br>f = 1kHz | --  | 70  | --  | dB   |
| Thermal Shutdown Temperature | TSD          | IOUT = 10mA                                          | --  | 160 | --  | °C   |
| Thermal Shutdown Hysteresis  | ΔTSD         |                                                      | --  | 15  | --  |      |

Note:

1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.
2. Vdif : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of VOUT .

## Package Outline Dimensions (unit: mm)

SOT-223



## Mounting Pad Layout (unit: mm)

