

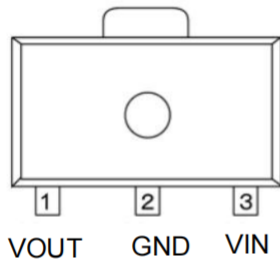
## Features

- 2 $\mu$ A Current at no Load
- $\pm 2\%$  Output Accuracy
- 150mA Output Current
- Current Limit Protection

## Applications

- Industrial Controls
- Home Automation
- Low Power Microcontrollers
- Portable, Battery Powered Equipment

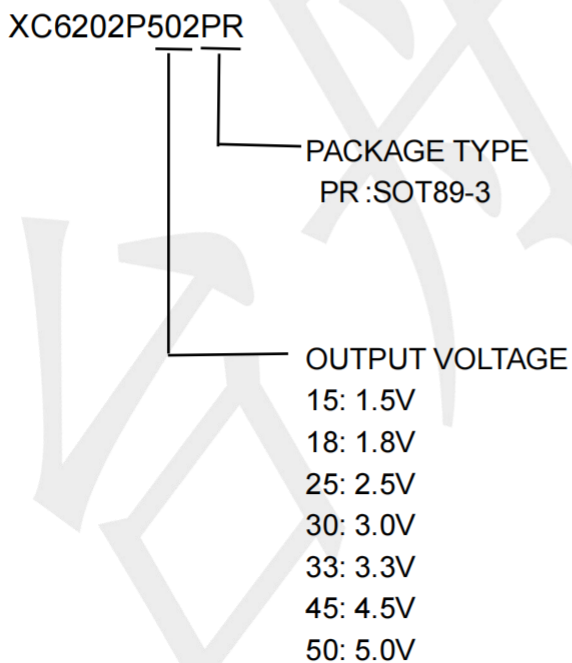
## PIN CONFIGURATION



SOT89-3

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

## Ordering Information

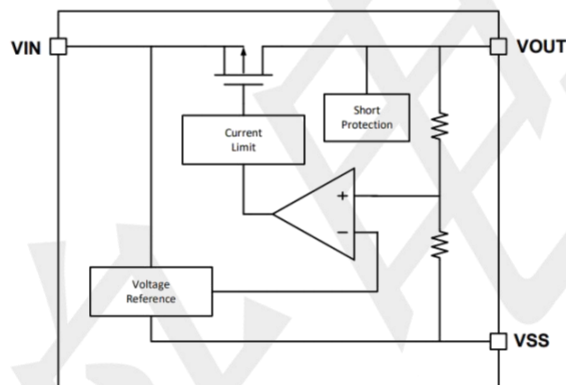


## Absolute Maximum Ratings

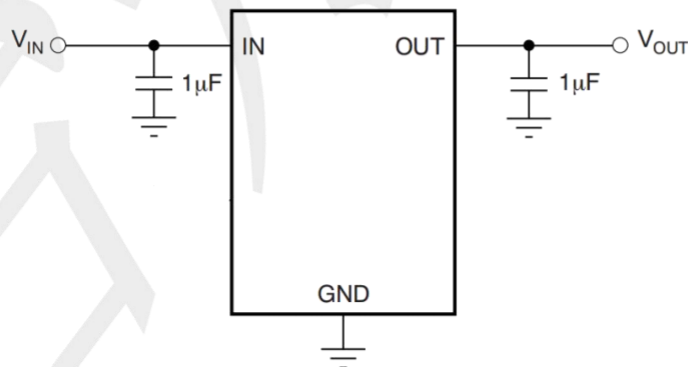
over operating free-air temperature range (unless otherwise noted)

|             |                                | MIN                | MAX      | UNIT |
|-------------|--------------------------------|--------------------|----------|------|
| VIN         | Continuous input voltage range | -0.3               | 22       | V    |
| VOUT        | Output voltage range           | -0.3               | VOUT+0.3 |      |
| IOUT        | Output pin current             | Internally limited |          | mA   |
| Temperature | Operating junction, TJ         | -25                | 80       | °C   |
|             | Storage, Tstg                  | -40                | 125      |      |

## BLOCK DIAGRAM



## Typical Application Circuit



## Electrical Characteristics

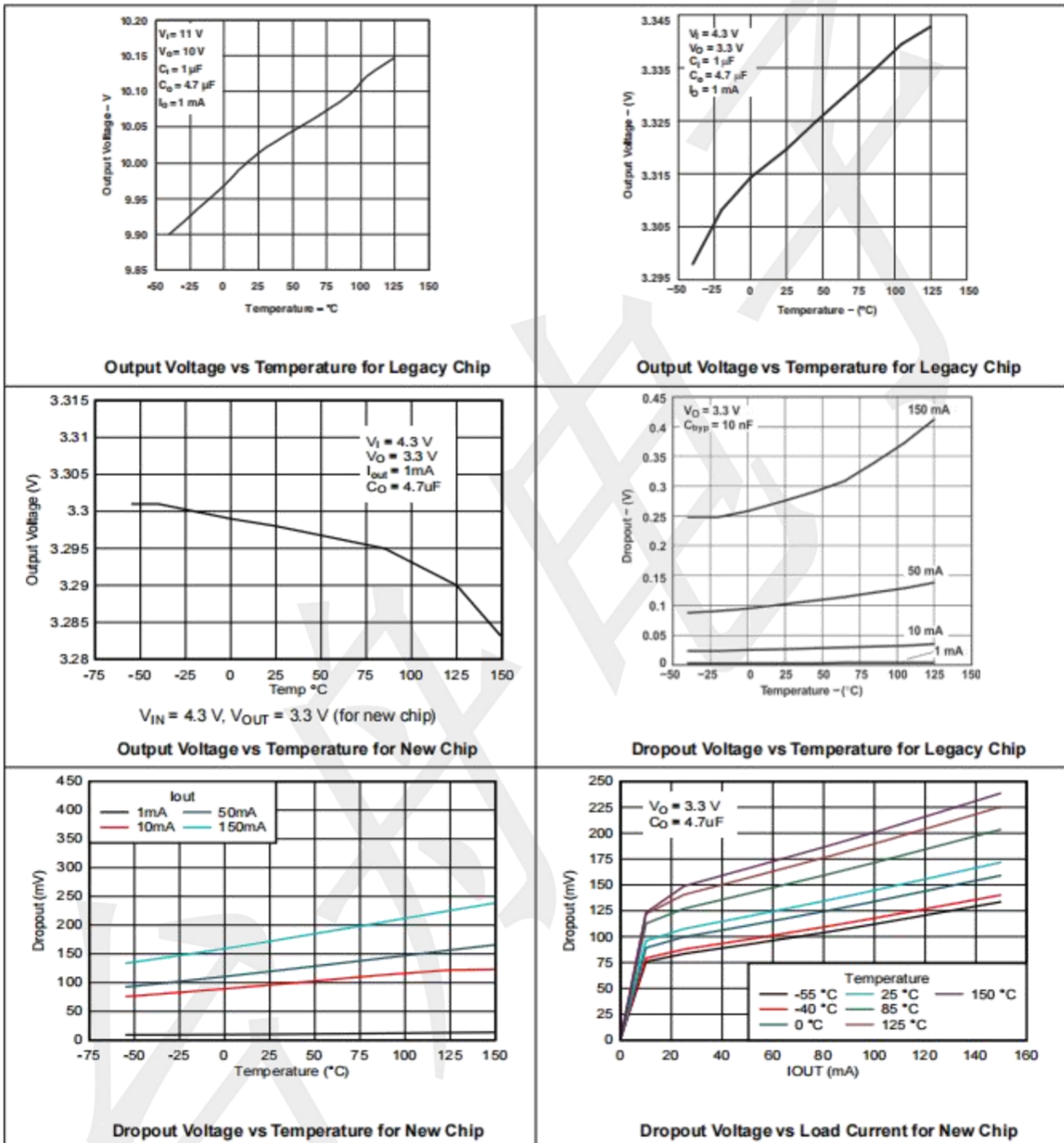
(VIN=7V, TA=25°C, unless otherwise specified)

| PARAMETER                              | SYMBOL            | TEST Conditions                                      | MIN | TYP  | MAX | UNIT |
|--|-------------------|--|-----|------|-----|------|
| Supply Voltage                         | VIN               |  | 2   | --   | 20  | V    |
| Output current                         | IOUT              |  | 0   | --   | 150 | mA   |
| DC Output Voltage Accuracy             |                   | IOUT = 0.1mA   | -2  | --   | 2   | %    |
| Dropout Voltage (VIN-VOUT)             | IOUT = 100mA      | VOUT = 1.5V  | --  | 420  | --  | mV   |
|  |                   | VOUT = 1.8V  | --  | 310  | --  |      |
|  |                   | VOUT = 2.8V  | --  | 220  | --  |      |
|  |                   | VOUT = 3.0V  | --  | 183  | --  |      |
|  |                   | VOUT = 3.3V  | --  | 161  | --  |      |
|  |                   | VOUT = 4.5V  | --  | 135  | --  |      |
|  |                   | VOUT = 5.0V  | --  | 122  | --  |      |
| Maximum output current                 | Iout max          | VIN=<br>VOUT+1V                                      | 100 | --   | --  | mA   |
| Ground Current (IOUT = 0mA)            | IQ                | VOUT = 3.3V  | --  | 2    | --  | uA   |
| Shutdown Ground Current                | ISD               | VOUT = 0V  | --  | 0.01 | 0.5 |      |
| VOUT Shutdown Leakage Current          | ILEAK             |  | --  | 0.01 | 0.5 |      |
| Line Regulation                        | ΔLINE             | IOUT = 1mA,<br>2≤VIN≤20V                             | --  | 0.3  | --  | %    |
| Load Regulation                        | ΔLOAD             | 10mA≤ IOUT ≤<br>100mA                                | --  | 0.3  | --  |      |
| Output Current Limit                   | ILIM              | VOUT=0.9×<br>VOUT(NOM)                               | 150 | 200  | 250 | mA   |
| Power Supply Rejection Ratio           | PSRR              | VOUT = 5V,<br>IOUT = 30mA,<br>VIN = 20V,<br>f = 1kHz | --  | 70   | --  | dB   |
| Thermal Shutdown Temperature           | TSD               | IOUT = 10mA  | --  | 160  | --  | °C   |
| Thermal Shutdown Hysteresis            | ΔTSD              |  | --  | 15   | --  |      |
| Package Thermal Resistance<br>(Note 1) | θJA               | Thermal<br>Resistance<br>Junction-toAmbient          | --  | 100  | --  | °C/W |
| Total Power Dissipation                | P <sub>DTOT</sub> | T <sub>C</sub> =25°C                                 | --  | 1.25 | --  | W    |

Note: 1. SOT89-3 devices are mounted on 1"x1" FR-4 substrate PC board, with minimum recommended pad layout.

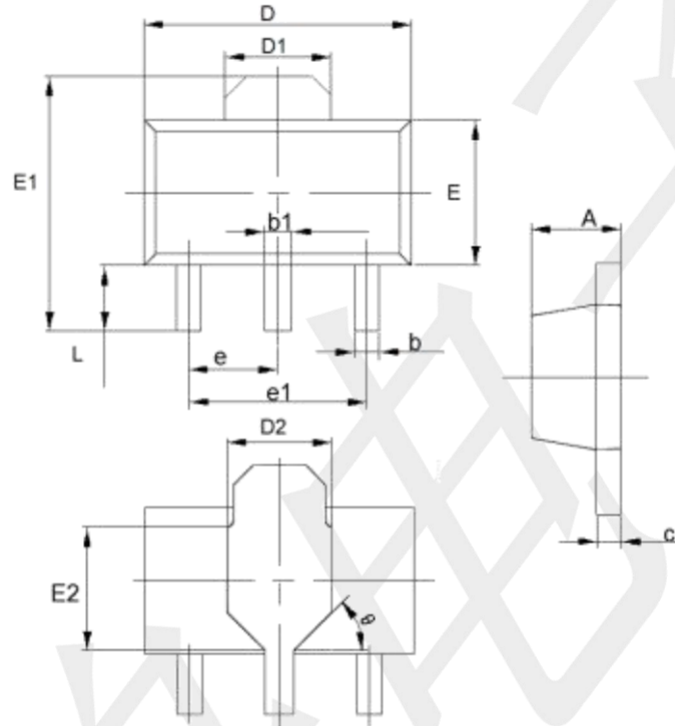
## Typical Operating Characteristics (25 °C, unless otherwise noted)

Unless otherwise specified:  $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V_{O(NOM)} + 1\text{ V}$ ,  $C_{OUT} = 4.7\mu\text{F}$ ,  $C_{IN} = 1\mu\text{F}$  all voltage options.



## Package information

SOT89-3



| 参数 | 尺寸 (mm)   |      | 尺寸 (Inch)   |        |
|----|-----------|------|-------------|--------|
|    | 最小值       | 最大值  | 最小值         | 最大值    |
| A  | 1.4       | 1.6  | 0.0551      | 0.0630 |
| b  | 0.32      | 0.52 | 0.0126      | 0.0205 |
| b1 | 0.4       | 0.58 | 0.0157      | 0.0228 |
| c  | 0.35      | 0.45 | 0.0138      | 0.0177 |
| D  | 4.4       | 4.6  | 0.1732      | 0.1811 |
| D1 | 1.55(TYP) |      | 0.061(TYP)  |        |
| D2 | 1.75(TYP) |      | 0.0689(TYP) |        |
| e1 | 3.0(TYP)  |      | 0.1181(TYP) |        |
| E  | 2.3       | 2.6  | 0.0906      | 0.1023 |
| E1 | 3.94      | 4.4  | 0.1551      | 0.1732 |
| E2 | 1.9(TYP)  |      | 0.0748(TYP) |        |
| e  | 1.5(TYP)  |      | 0.0591(TYP) |        |
| L  | 0.8       | 1.2  | 0.0315      | 0.0472 |
| θ  | 45°       |      | 45°         |        |

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