

Features

- Low voltage drop: 0.26V@100mA
- High input voltage: 15V
- Low temperature coefficient
- Large Output Current: >0.5A
- Low Quiescent Current: 2.0uA
- Output voltage accuracy: tolerance $\pm 2\%$
- Built-in current limiter
- SOT23-3L Package Available

Applications

- Battery-powered equipment
- Hand-Hold Equipment
- GRS Receivers
- Wireless LAN

General Description

The XC6202P series is a group of positive voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The XC6202P consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Transient response to load variations have improved in comparison to the existing series. SOT23-3 packages is available.

Marking

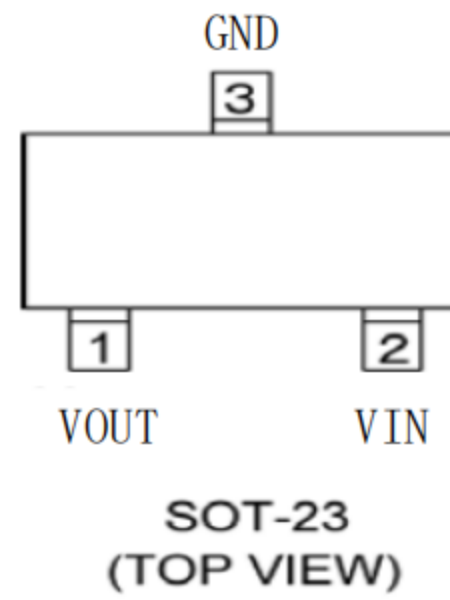
XC6202P332MR: 252X
XC6202P502MR: 25MX
XC6202P302MR: 24ZX

XC6202P302MR

MR:SOT23-3L Package

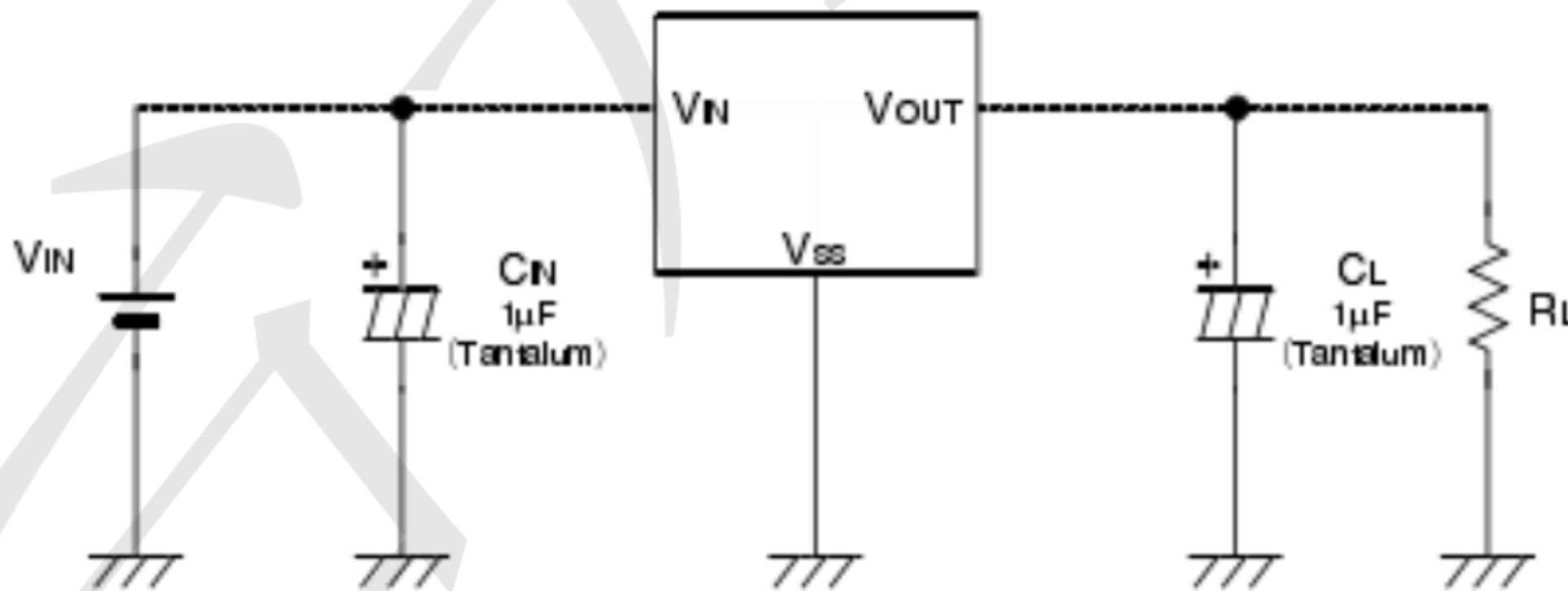
Output voltage: 332=3.3V
502=5.0V
302=3.0V

PIN CONFIGURATION



| Pin No | Pin Name | Pin Function |
|--------|----------|--------------------------|
| 1 | VOUT | Output of the Regulator |
| 2 | VIN | Input of Supply Voltage. |
| 3 | GND | Ground |

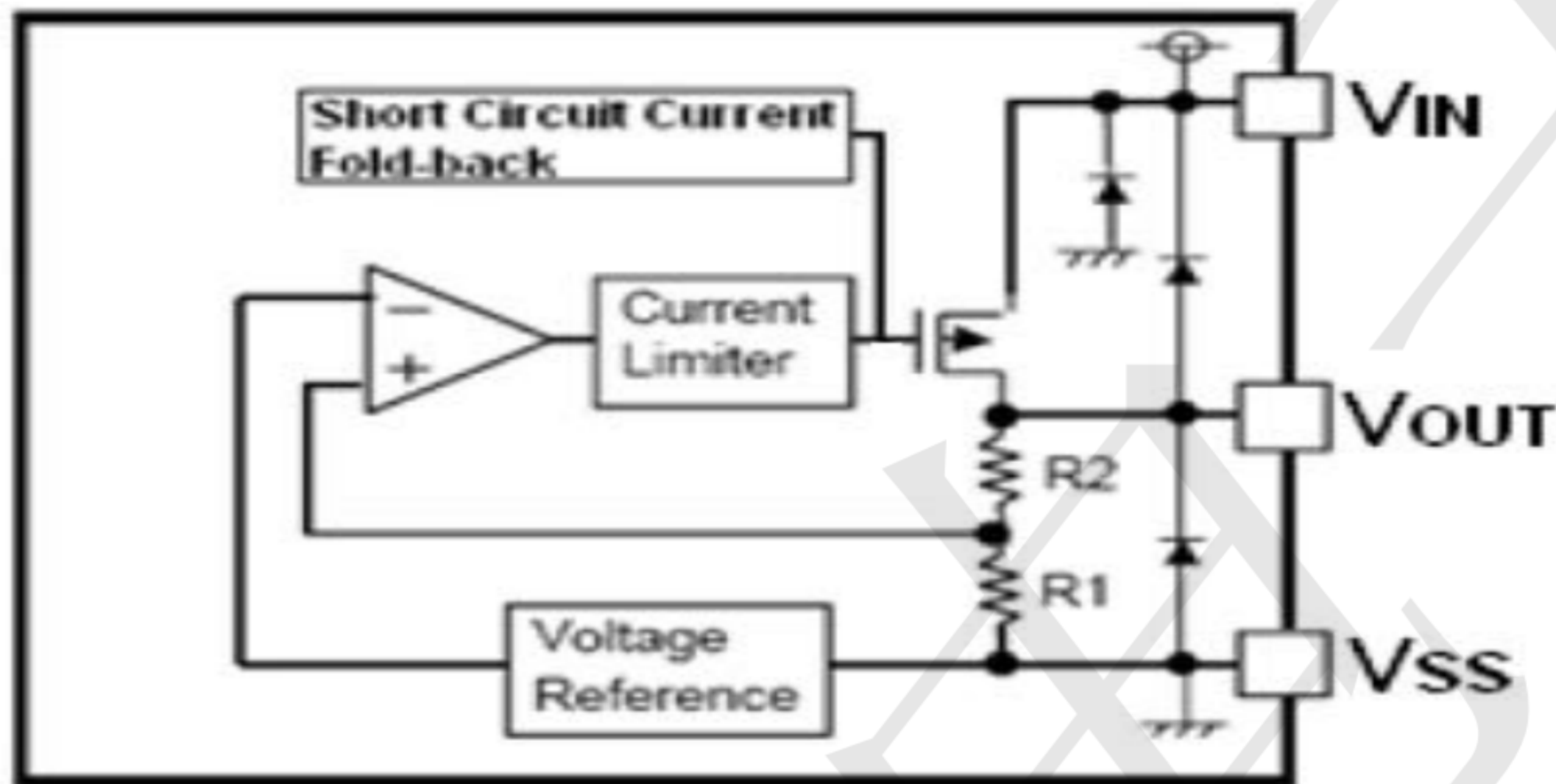
Typical Application Circuit



Note1: Input capacitor $C_{IN}=1\mu F$.

Note2: Output capacitor $C_{OUT}=1\mu F/6.8\mu F$ (1µF Tantalum capacitor or 6.8µF ceramic capacitor is recommended).

BLOCK DIAGRAM



Absolute Maximum Ratings

Supply Voltage-0.3V to 18V

Storage Temperature-40°C to 125°C

Operating Temperature-40°C to 85°C

Note: These are stress ratings only. Stresses exceeding the range specified under “Absolute Maximum Ratings” may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

Electrical Characteristics

TP6202P for any output voltage

(Ta=25°C)

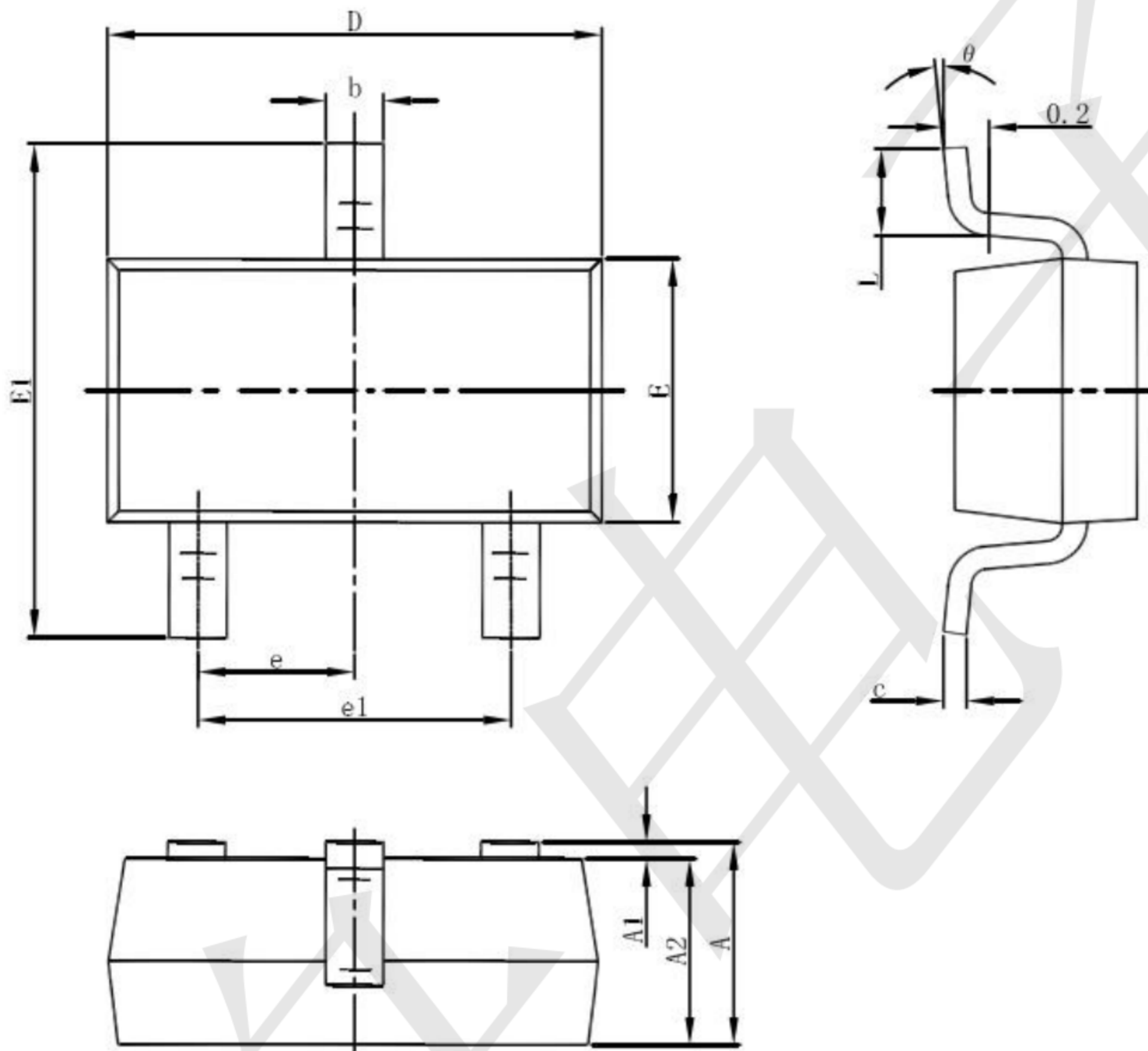
| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|----------------------------------|-----------|------|-----------|--------|
| Output Voltage | Vout | Vin=Vout+1V 1.0mA≤Iout≤30mA | Vout×0.98 | -- | Vout×1.02 | V |
| Output Current*1 | Iout | Vin-Vout=1V | -- | 150 | -- | mA |
| Low dropout*2 | Vdrop | Refer to the next table | | | | |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$ | 1.6V≤Vin≤8V Iout=100mA | -- | 0.05 | 0.2 | %/V |
| Load Regulation | ΔVout | Vin= Vout+1V 1.0mA≤Iout≤100mA | -- | 12 | 30 | mV |
| Output voltage Temperature Coefficiency | $\frac{\Delta V_{OUT}}{\Delta Ta}$ | Iout=30mA 0°C≤Ta≤70°C | -- | ±100 | -- | Ppm/°C |
| PSRR | PSRR | F=1KHz Vin=Vout+1V | -- | 40 | -- | dB |
| Supply Current | Iss1 | -- | -- | 2 | -- | uA |
| Input Voltage | Vin | -- | -- | -- | 15 | V |

Electrical Characteristics by Output Voltage

| Output Voltage Vout(V) | Dropout Voltage Vdif (V) | | |
|------------------------|--------------------------|------|------|
| | Conditions | Typ. | Max. |
| Vout ≤ 2.0V | Iout=60 mA | 0.1 | 0.12 |
| 2.0 < Vout ≤ 3.0 | Iout=80 mA | 0.12 | 0.14 |
| 3.0 < Vout ≤ 4.0 | Iout=100 mA | 0.16 | 0.18 |
| 4.0 < Vout ≤ 5.0 | | 0.17 | 0.18 |

Package information

3-pin SOT23-3L 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 | 0.500 | 0.012 | 0.020 |
| 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 | 0.950(BSC) | | 0.037(BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| theta | 0° | 8° | 0° | 8° |