

General Description

The TP5108E is a high-performance, 500mA LDO regulator, offering extremely high PSRR and ultra-low dropout. Ideal for portable RF and wireless applications with demanding performance and space requirements.

The TP5108E is available in 5pin SOT23-5 Package .the output standards of 1.2V 1.5V 1.8V 2.5V 2.8V 3.0V 3.3V

Features

- Quiescent Current: 80uA
- PSRR:72dB@1KHz
- < 1uA current at shutdown mode
- Output voltage accuracy: tolerance $\pm 2\%$
- Output current:500mA(Typ.)
- SOT23-5 package

Applications

- CDM/GSM mobile phone
- PDAs /MP3
- Audio/Video equipment

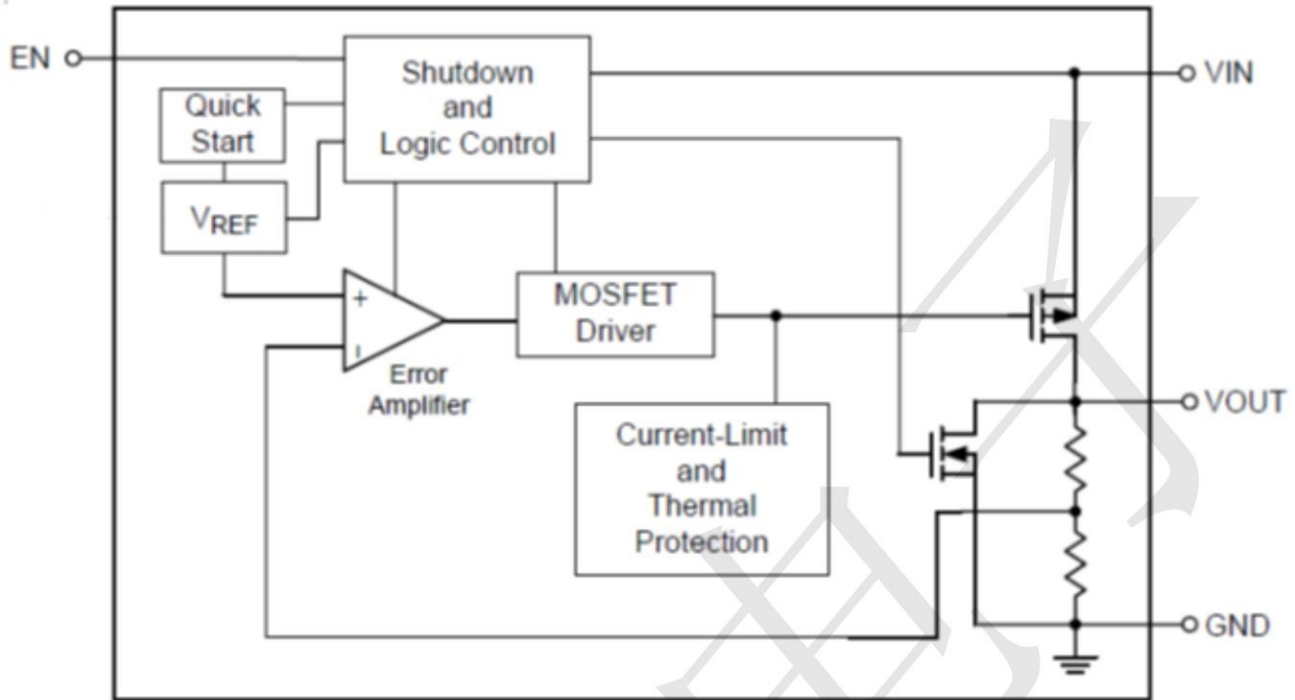
Ordering Information

TP5108E23E-33

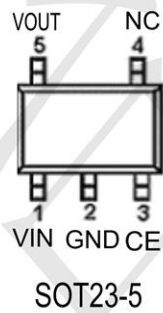
Output voltage: 33=3.3V
50=5.0V
28=2.8V
30=3.0V
XX=X.XV

23E:SOT23-5 Package

BLOCK DIAGRAM



PIN CONFIGURATION



| Pin Name | Function |
|----------|----------------|
| VIN | Supply power |
| GND | Ground |
| CE | Enable pin |
| NC | NC |
| VOUT | Voltage output |

Absolute Maximum Rating ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

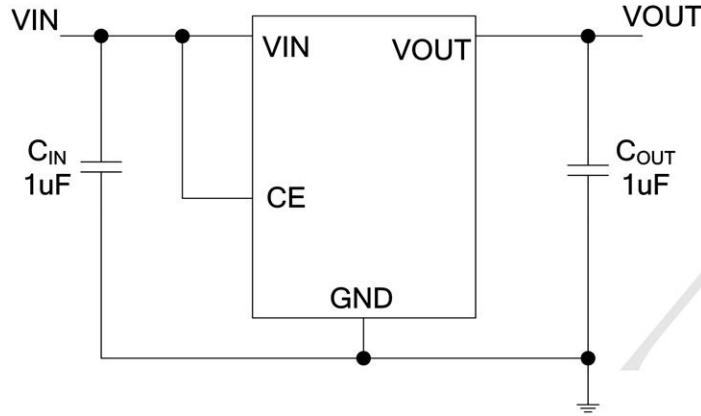
| Parameter | Symbol | Maximum Rating | | Unit |
|-------------------------------|-----------|------------------------------|-----|--------------------|
| Input Voltage | V_{IN} | 7 | | V |
| Output Voltage | V_{OUT} | $V_{SS}-0.3 \sim V_{IN}+0.3$ | | |
| Output Current | I_{out} | 600 | | mA |
| Power Dissipation | P_D | SOT-23-5 | 250 | mW |
| Operating Ambient Temperature | T_{opr} | -40~+85 | | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | -40~+125 | | |

Electrical Characteristics ($T = 25^{\circ}\text{C}$ unless otherwise noted)

($V_{in}=V_{out}+1V, C_{in}=C_{out}=1\mu F, T_a=25^{\circ}\text{C}$)

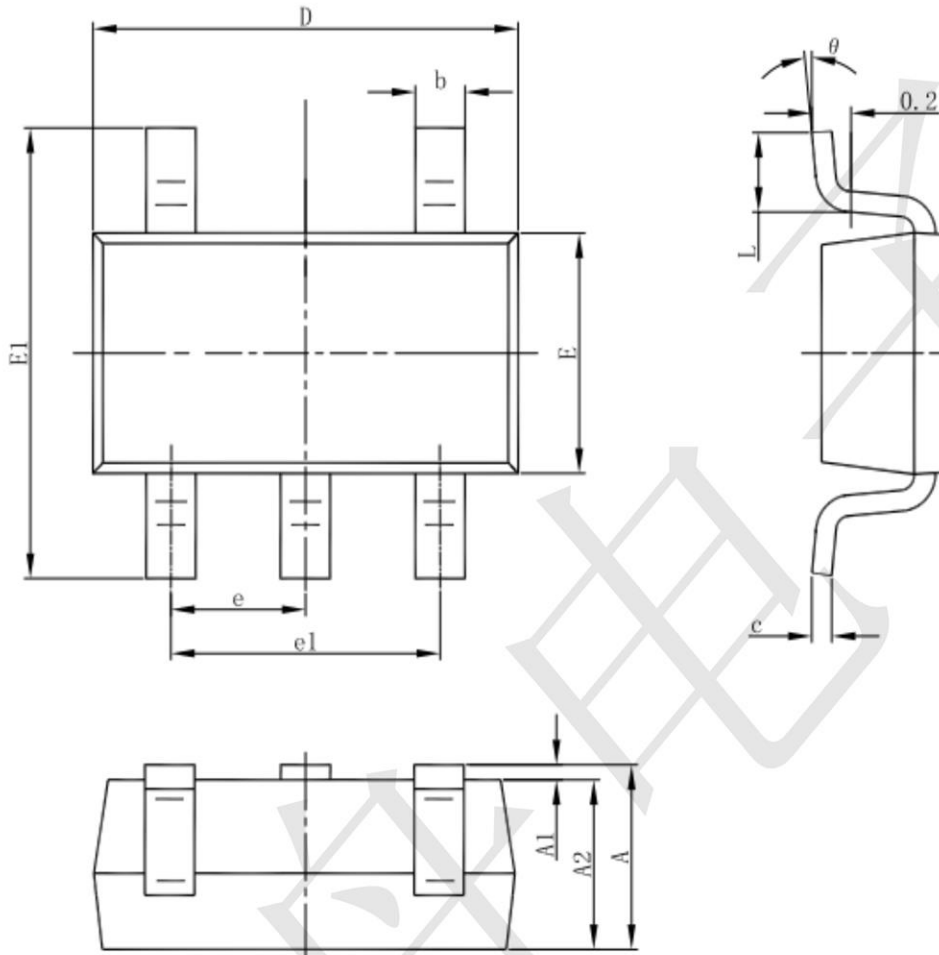
| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|-----------------------------|--|---|--------|--------------------------|--------|------------------|
| Output Voltage | $V_{OUT(E)}$ (Note 2) | $I_{OUT}=40\text{mA}$, $V_{IN}=V_{out}+1V$ | X 0.98 | $V_{OUT(T)}$ (Note 1) | X 1.02 | V |
| Input Voltage | V_{IN} | | | | 7.0 | V |
| Max. Output Current | I_{OUTmax} | $V_{IN}=V_{out}+1V$ | | 500 | | mA |
| CE Enable Voltage | V_{CE} | $V_{IN}=V_{out}+1V$ | | 1.1 | | V |
| Load Regulation | ΔV_{OUT} | $V_{IN}=V_{out}+1V$, $1\text{mA} \leq I_{OUT} \leq 100\text{mA}$ | | 50 | | mV |
| Dropout Voltage (Note 3) | V_{dif1} | $I_{OUT} = 100\text{mA}$ | | 100 | | mV |
| | V_{dif2} | $I_{OUT} = 200\text{mA}$ | | 300 | | mV |
| Supply Current | I_{SS} | $V_{IN}=V_{out}+1V$ | | 80 | | μA |
| Standby Current | I_{CEL} | $V_{ce}=0V$ | | 1 | | μA |
| Line Regulation | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT} = 40\text{mA}$ $V_{out}+1V \leq V_{IN} \leq 8V$ | | 0.03 | | %/V |
| Output Noise | e_n | $I_{OUT} = 40\text{mA}$, 300Hz~50kHz | | 50 | | μVrms |
| Ripple Rejection Rate | PSRR | $V_{in} = [V_{out}+1]V$ +1Vp-pAC $I_{OUT} = 40\text{mA}, f=1\text{kHz}$ | | 70 | | dB |

TYPICAL APPLICATION



Package informantion

SOT23-5



| 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 |
| θ | 0° | 8° | 0° | 8° |