

产品特点

最大输出电流: 300mA
压差电压: 160mV@50mA
最大工作电压: 8V
输出电压范围: 1.8V
高精度: 2%
极低的静态工作电流: 3 μ A (典型值)
内置过流和短路保护电路
工作温度范围: -40 $^{\circ}$ C ~ 85 $^{\circ}$ C

应用领域

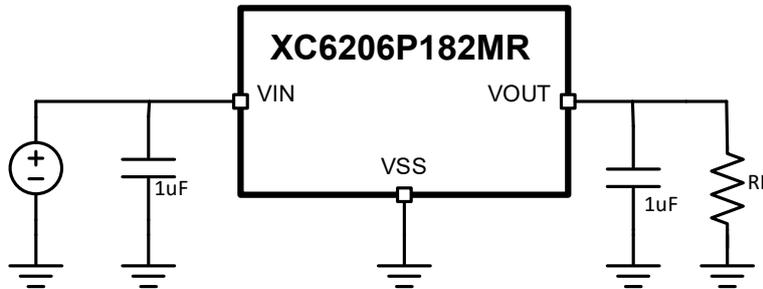
电池供电系统
无绳电话设备
无线控制系统
便携/手掌式计算机
便携式消费类设备
便携式仪器
汽车电子设备
电压基准源



产品描述

XC6206P182MR 是具有高纹波抑制率、低功耗、低压差，具有过流和短路保护的 CMOS 降压型电压稳压器。这些器件具有很低的静态偏置电流 (6.5 μ A Typ.)，它们能在输入、输出电压差极小的情况下提供 200mA 的输出电流，并且仍能保持良好的调整率。由于输入输出间的电压差很小和静态偏置电流很小，这些器件特别适用于希望延长电池寿命的电池供电类产品，如计算机、消费类产品和工业设备等。

典型应用

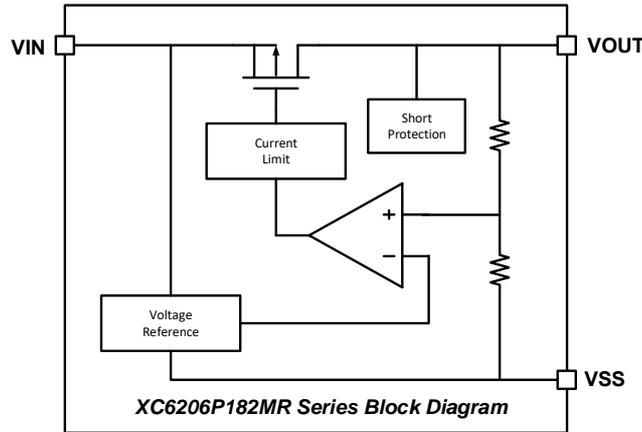


极限参数

(注意: 超过这些限制可能会损坏器件。长期暴露在绝对最大额定条件下会影响器件的可靠性。)

| 项目 | 符号 | 极限值 | 单位 |
|------|-----------|------------------------------|--------------|
| 输入电压 | V_{IN} | 8 | V |
| 输出电流 | I_{OUT} | 300 | mA |
| 输出电压 | V_{OUT} | $V_{SS}-0.3 \sim V_{IN}+0.3$ | V |
| 功耗 | P_d | 0.20 | W |
| 工作温度 | T_{opr} | -40~+85 | $^{\circ}$ C |
| 存储温度 | T_{stg} | -55~+125 | $^{\circ}$ C |

功能框图



电学参数

($V_{IN}=5V, T_A=25^{\circ}C$, 除特别指定)

| 项目 | 符号 | 条件 | 最小值 | 典型值 | 最大值 | 单位 |
|----------|---|---|--------------------------|--------------|--------------------------|---------------------|
| 输出电压 | $V_{OUT(E)}$ | $V_{IN} = V_{OUT(S)} + 1.0V$, $I_{OUT} = 1mA, \pm 2\%$ | $V_{OUT(S)} \times 0.98$ | $V_{OUT(S)}$ | $V_{OUT(S)} \times 1.02$ | V |
| 最大输出电流 | I_{OUT} | $V_{IN} \geq V_{OUT(S)} + 1.0V$ | 300 | — | — | mA |
| 负载稳定度 | ΔV_{OUT} | $V_{IN} = V_{OUT} + 1V$ $1mA \leq I_{OUT} \leq 100mA$ | — | 25 | — | mV |
| 跌落电压 | V_{drop} | $1.5V \leq V_{OUT(S)} \leq 2.5V$ $I_{OUT} = 50mA$ | — | 0.20 | 0.28 | V |
| | | $2.6V \leq V_{OUT(S)} \leq 3.3V$ $I_{OUT} = 50mA$ | — | 0.16 | 0.24 | |
| | | $3.4V \leq V_{OUT(S)} \leq 6.0V$ $I_{OUT} = 50mA$ | — | 0.12 | 0.20 | |
| 输入稳定度 | $\frac{\Delta V_{OUT1}}{\Delta V_{IN} \cdot V_{OUT}}$ | $V_{OUT(S)} + 0.5V \leq V_{IN} \leq 5.5V$ $I_{OUT} = 1mA$ | — | 0.05 | 0.2 | %/V |
| 静态电流 | I_{SS} | $V_{IN} = V_{OUT(S)} + 1.0V$ | — | 3 | — | μA |
| 输入电压 | V_{IN} | | 1.8 | — | 6 | V |
| 输出电压温度系数 | $\frac{\Delta V_{OUT}}{\Delta T_{OPR} \cdot V_{OUT}}$ | $I_{OUT} = 40mA$ $-40^{\circ}C \leq T_{opr} \leq 85^{\circ}C$ | — | 100 | — | ppm/ $^{\circ}C$ |
| 纹波抑制比 | PSRR | $V_{IN} = [V_{OUT} + 1]V$ $+1Vp-pAC$ $I_{OUT} = 10mA, f = 1kHz$ | — | 40 | — | dB |
| 短路电流 | I_{SHORT} | $V_{IN} = V_{OUT} + 1.5V$, $V_{OUT} = V_{SS}$ | — | 50 | — | mA |
| 过流保护电流 | I_{LIMIT} | | — | 300 | 350 | mA |

注:

- $V_{OUT(S)}$ = 规定输出电压
- $V_{OUT(E)}$ = 有效输出电压 (即当 I_{OUT} 保持一定数值, $V_{IN} = V_{OUT} + 1V$ 时的输出电压)
- $V_{drop} = \{V_{IN1} (\text{注 } 5) - V_{OUT1} (\text{注 } 4)\}$
- $V_{OUT1} = V_{OUT(E)} \times 98\%$
- V_{IN1} = 逐渐减小输入电压, 当输出电压降为 $V_{OUT(E)1}$ 的98%时的输入电压。
- Unless otherwise stated, $V_{IN} = V_{OUT(S)} + 1.0V$

RATING AND CHARACTERISTIC CURVES

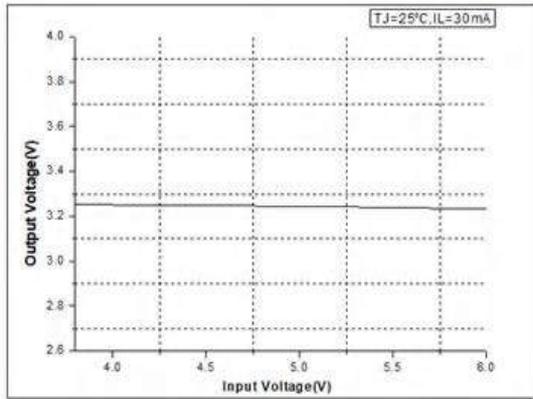


图1 输出电压和输入电压关系

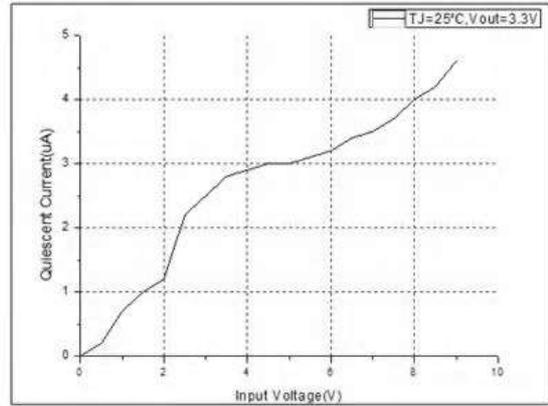


图2 静态功耗和输入电压关系

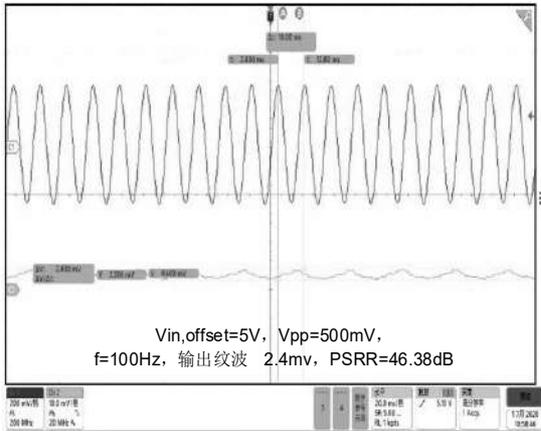


图3 纹波抑制比 (f=100Hz)

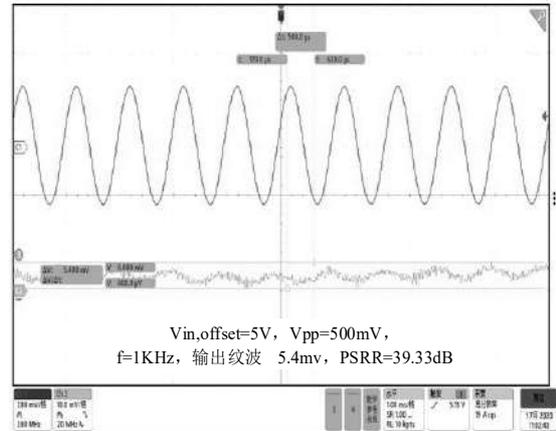


图4 纹波抑制比 (f=1KHz)

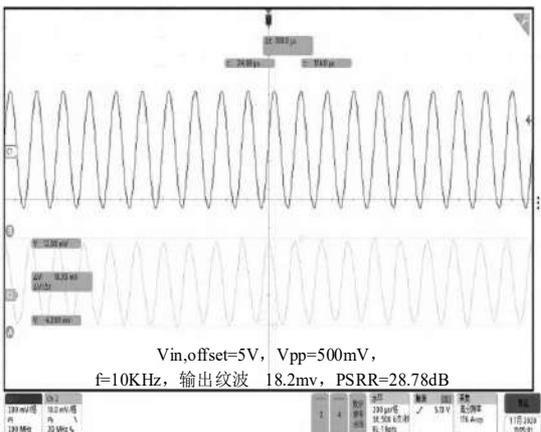


图5 纹波抑制比 (f=10Hz)

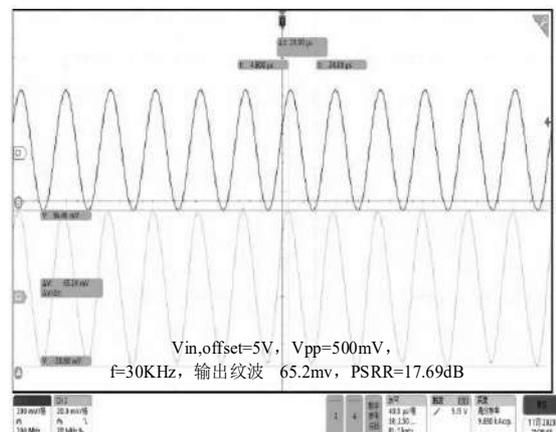
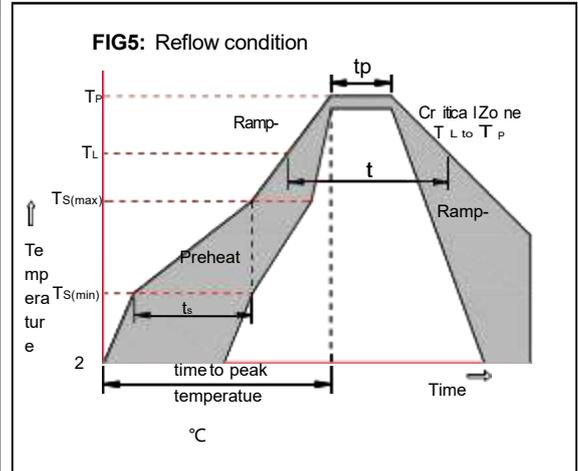


图6 纹波抑制比 (f=30Hz)

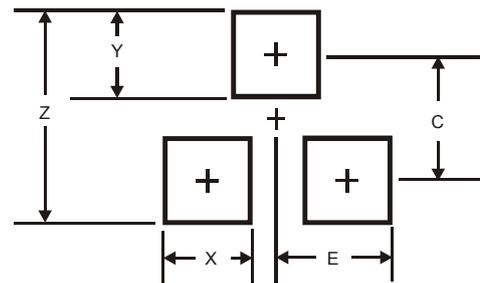
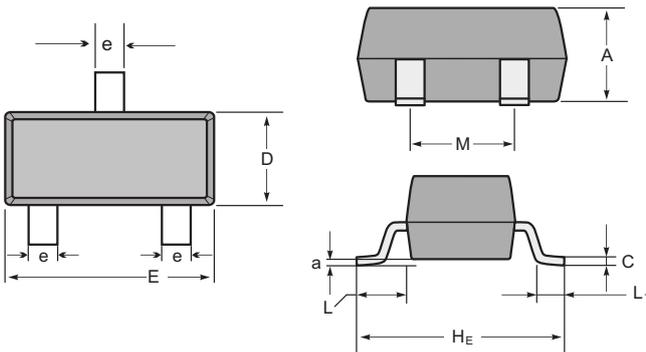
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |



Package Dimensions & Suggested Pad Layout

SOT23



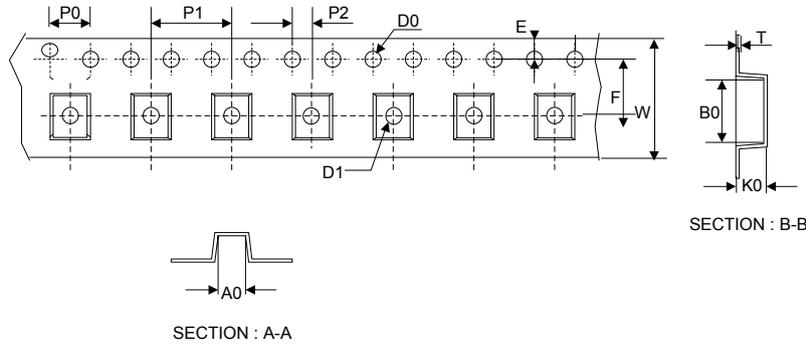
SOT-23 mechanical data

| UNIT | A | C | D | E | He | e | M | L | L1 | a | |
|------|-----|-----|------|-----|-----|-----|-----|------|------------|------------|------|
| mm | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6 | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref) | 0.0 |
| | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2 | 0.3 | 1.7 | | | 0.15 |
| mil | max | 43 | 6 | 55 | 118 | 102 | 20 | 77 | 22 (ref) | 14 (ref) | 0.0 |
| | min | 35 | 3 | 47 | 110 | 87 | 12 | 67 | | | 6 |

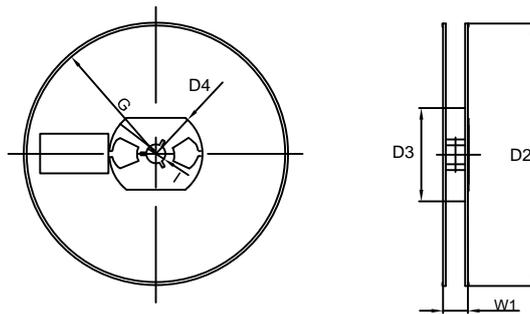
| Dimensions | SOT23 |
|------------|-------|
| Z | 2.9 |
| X | 0.8 |
| Y | 0.9 |
| C | 2.0 |
| E | 1.35 |

Tape & reel specification

Tape



7" Reel



| Symbol | Dimension (mm) |
|-------------------|----------------|
| P0 | 4.00±0.10 |
| P1 | 4.00±0.10 |
| P2 | 2.00±0.10 |
| D0 | 1.55±0.10 |
| D1 | 1.05±0.10 |
| E | 1.55±0.10 |
| F | 3.60±0.10 |
| W | 8.00±0.10 |
| A0 | 3.80±0.20 |
| B0 | 3.25±0.20 |
| K0 | 1.45±0.10 |
| T | 0.25±0.05 |
| D2 | 178.0±3.0 |
| D3 | 55Min. |
| D4 | R24.0±3.0 |
| G | R82.0±3.0 |
| I | 13.0±2.0 |
| W1 | 11.0±3.0 |
| Quantity: 3000PCS | |