

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

XC6206PXXXPR-MS

Product specification

描述

XC6206PXXXPR-MS 系列是高纹波抑制率、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 (8.0 μ A Typ.)，它们能在输入、输出电压差极小的情况下提供 250mA 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。


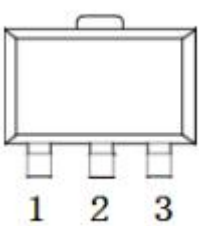
特性

- 高精度输出电压：±2.5%
- 输出电压：1.5V~5.0V (步长 0.1V)
- 极低的静态偏置电流 (Typ. =8.0 μ A)
- 低的温度调整系数
- 最高输入电压可达 8V
- 带载能力强：当 $V_{in}=4.3V$ 且 $V_{out}=3.3V$ 时， $I_{out}=250mA$
- 可以作为调整器和参考电压来使用
- 输入稳定性好：Typ. 0.03%/V

产品用途

- 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

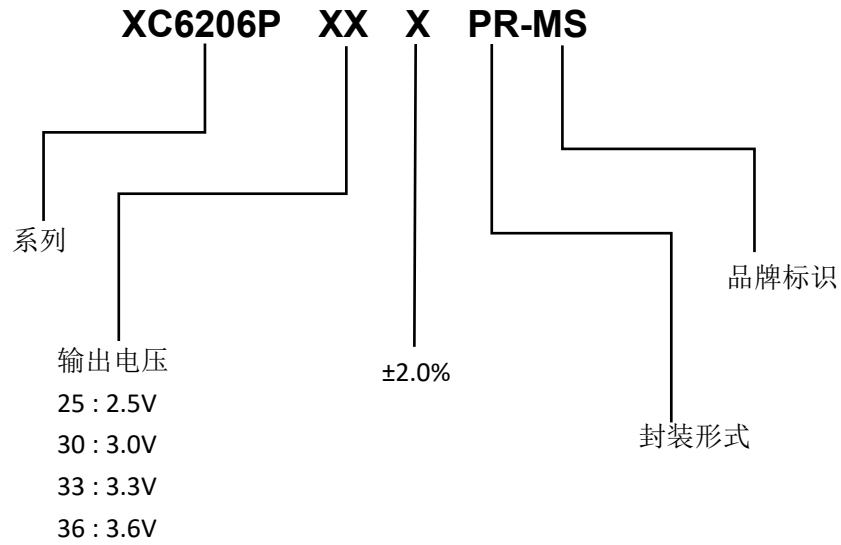
包装和订单信息

| 产品编号 | 封装 | | 管脚定义功能 | 管体标记 | 最小包装 (PCS) |
|-----------------|--------|---|---|-----------------|------------|
| XC6206P252PR-MS | SOT-89 |  |  | 6206A *** 25 | 1000 |
| XC6206P302PR-MS | | | | 6206A *** 30 | 1000 |
| XC6206P332PR-MS | | | | 6206A *** 33 | 1000 |
| XC6206P362PR-MS | | | | 6206A *** 36 | 1000 |

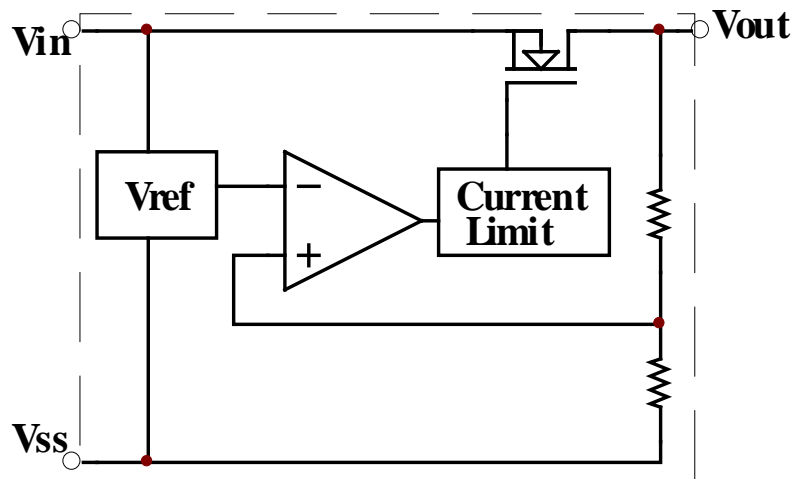
Notes:***Representing internal production number.

| 管脚序号 | 管脚定义 | 功能说明 |
|-------|------|-------|
| 封装形式 | | |
| SOT89 | | |
| 1 | VSS | 芯片接地端 |
| 3 | VOU | 芯片输出端 |
| 2 | VIN | 启动输入端 |

产品命名



功能框图



极限参数

| 项目 | 符号 | 参数 | 极限值 | 单位 |
|----|------|---------|--------------------|---------|
| 电压 | Vin | 输入电压 | 9 | V |
| | Vout | 输出电压 | Vss-0.3 ~ Vout+0.3 | V |
| 电流 | Iout | 输出电流 | 500 | mA |
| 功耗 | PD | SOT23 | 300 | mW |
| | | SOT89-3 | 500 | |
| 温度 | Tw | 工作温度 | -25~+80 | °C |
| | Tc | 存储温度 | -40~+125 | °C |
| | Th | 焊接温度 | 260 | °C, 10s |

电学特性 (C_{in}=C_{out}=10uF, Ta=25°C除特别指定)

| 特性 | 符号 | 条件 | 最小值 | 典型值 | 最大值 | 单位 |
|----------|--|---|------------------------------------|----------------------|-------------------------------|--------|
| 输出电压 | V _{OUT} (E) | I _{OUT} =1mA, V _{IN} = V _{OUT} (T)+1V | V _{OUT} (T) *0.98 | V _{OUT} (T) | V _{OUT} (T)* 1.02 | V |
| 最大输出电流 | I _{OUT} (max) | V _{IN} =V _{OUT} (T)+1V | 100 | | | mA |
| 跌落压差 | V _{drop} | I _{OUT} =50mA | 1.5V ≤ V _{OUT} (T) ≤ 2.5V | 200 | 280 | mV |
| | | | 2.6V ≤ V _{OUT} (T) ≤ 3.3V | 160 | 240 | |
| | | | 3.4V ≤ V _{OUT} (T) ≤ 5.5V | 120 | 200 | |
| 静态电流 | I _{SS} | V _{IN} = V _{OUT} (T)+1V | | 7 | | μA |
| 负载稳定度 | ΔV _{OUT} | V _{IN} = V _{OUT} (T)+1V, 1mA ≤ I _{OUT} ≤ 80mA | | 20 | | mV |
| 输入稳定度 | ΔV _{OUT} / (ΔV _{IN} • V _{OUT}) | I _{OUT} =1mA, V _{OUT} (T)+0.5V ≤ V _{IN} ≤ 5.5V | | 0.1 | 0.2 | %/V |
| 输出电压温度系数 | ΔV _{OUT} / (ΔTa • V _{OUT}) | V _{IN} = V _{OUT} (T)+1V, I _{OUT} =10mA -40°C ≤ Ta ≤ 85°C | | ±100 | | ppm/°C |
| 输入电压 | V _{IN} | | 1.8 | -- | 8.0 | V |
| 纹波抑制比 | PSRR | V _{IN} = [V _{OUT} (T)+1]V +1V _{p-p} AC I _{OUT} =10mA, f=1kHz | | 40 | | dB |
| 短路电流 | I _{short} | V _{IN} = V _{OUT} (T)+1.5V, V _{OUT} =V _{SS} | | 30 | | mA |
| 过流保护电流 | I _{limit} | V _{IN} = V _{OUT} (T)+1.5V | | 380 | | mA |

注：

- 1、V_{OUT}(T)：规定的输出电压。
- 2、V_{OUT}(E)：有效输出电压（即当 I_{OUT} 保持一定数值，V_{IN} = (V_{OUT}(T)+1.0V)时的输出电压）。
- 3、I_{OUT}(max)：V_{IN}=V_{OUT}(T)+1V，缓慢增加输出电流，当输出电压 ≤ V_{OUT}(E)*95%时的电流值。
- 4、V_{drop}= V_{IN1} - V_{OUT}(E) s：V_{IN1}=逐渐减小输入电压，当输出电压降为 V_{OUT}(E) 的 98%时的输入电压。

$$V_{OUT}(E) s = V_{OUT}(E) * 98\%$$

$$V_{OUT}(E) 1 = \text{当 } V_{IN} = V_{OUT}(T) + 1V, I_{out} = \text{某一数值时的输出电压值。}$$

测试电路

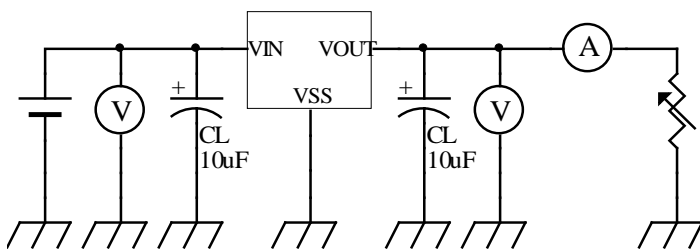


图 1

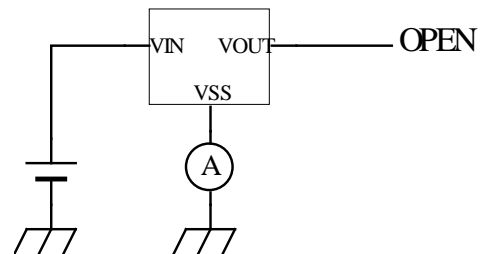
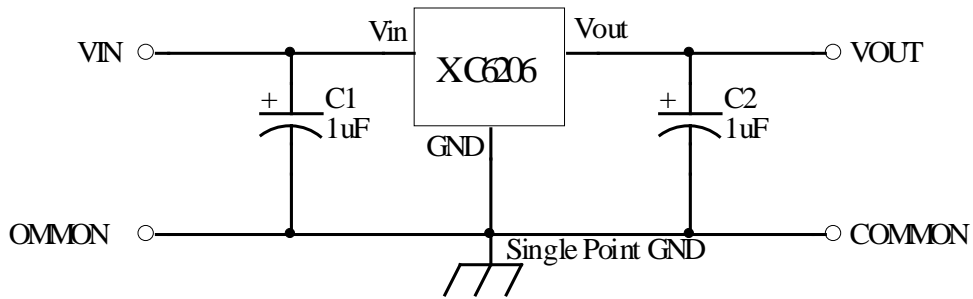


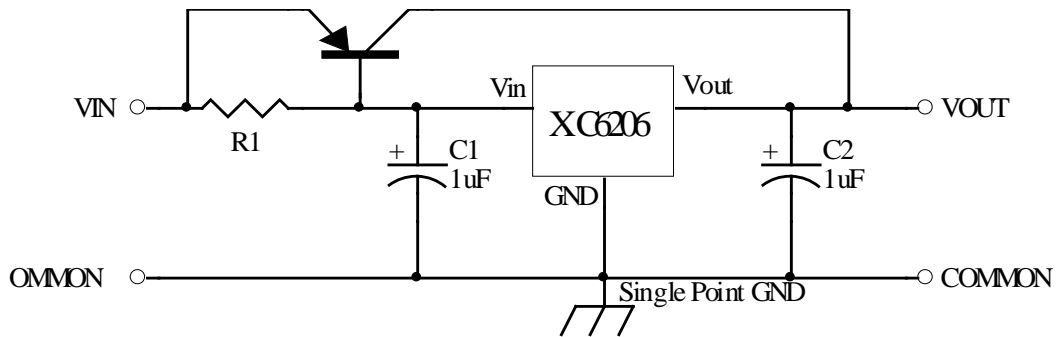
图 2

应用电路

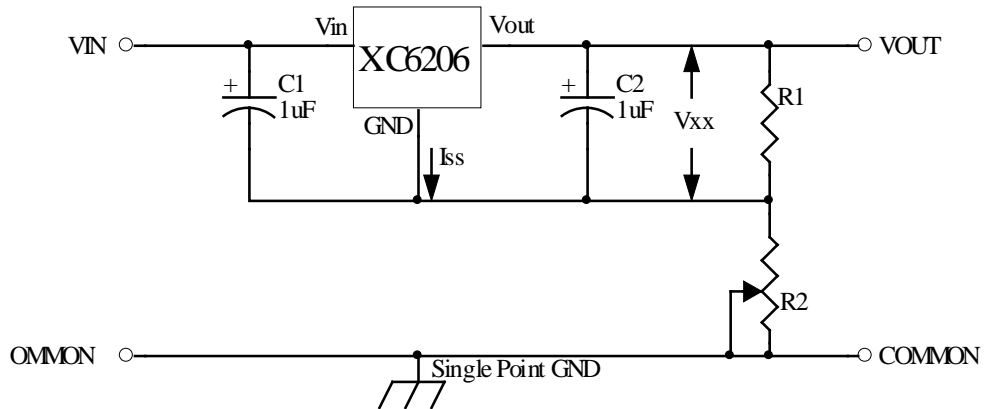
1、基本电路



2、大输出电流正电压型电压调整器

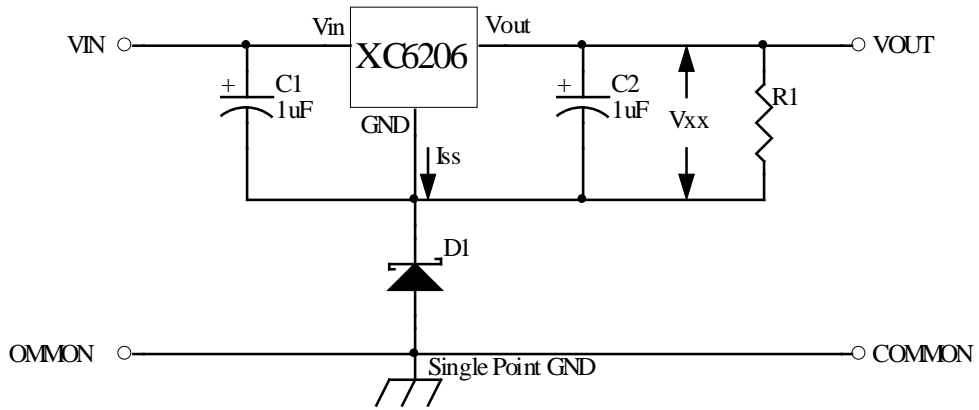


3、提高输出电压值电路 (1)



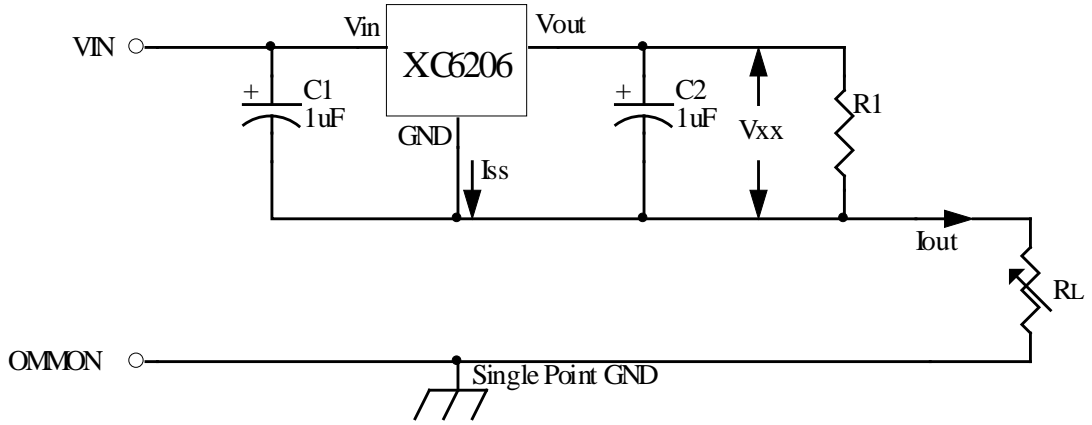
$$V_{out} = V_{xx}(1 + R_2/R_1) + I_{ss}R_2$$

4、提高输出电压电路（2）



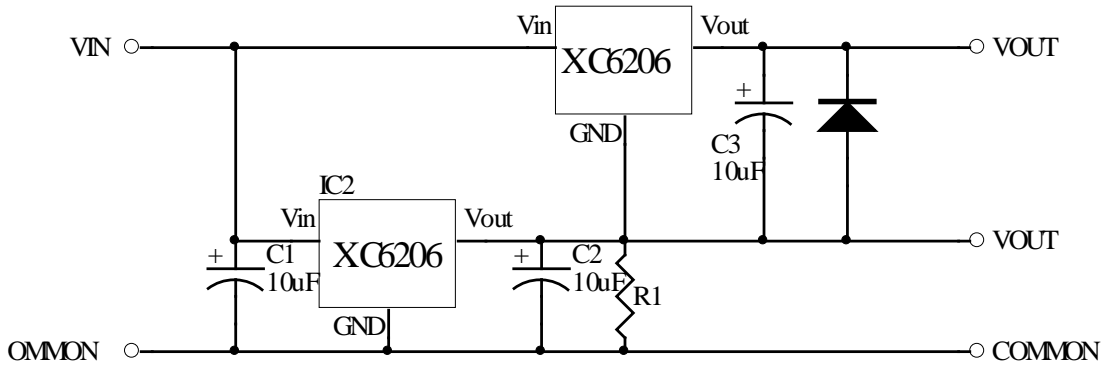
$$V_{out} = V_{xx} + V_{D1}$$

5、恒流调整器



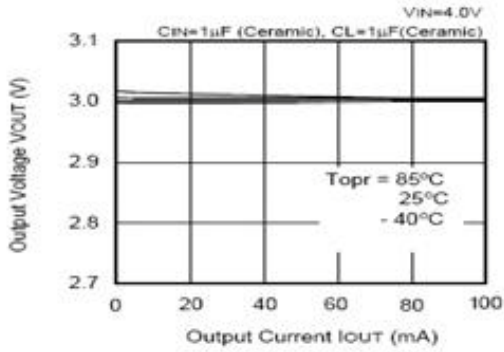
$$I_{out} = V_{xx}/R_A + I_{ss}$$

6、双输出

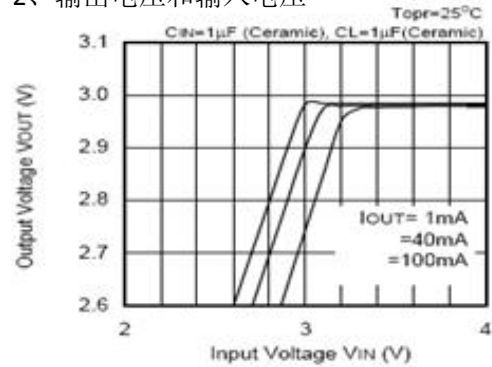


特性曲线图

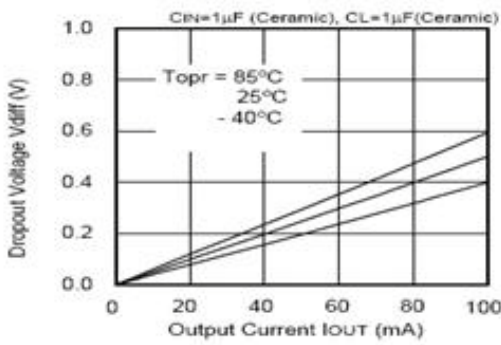
1、输出电压--输出电流（负载电流增加时）



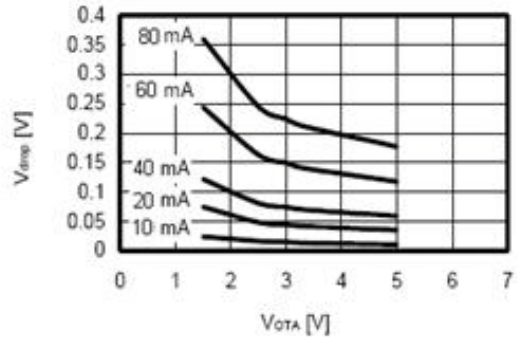
2、输出电压和输入电压



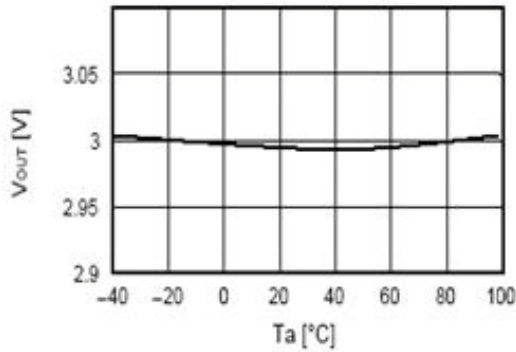
3、Dropout 电压和输出电流



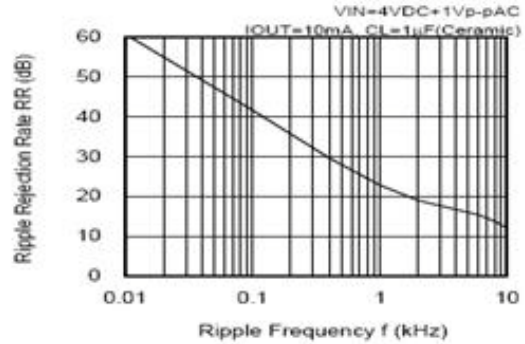
4、Dropout 电压和输出电压



5、输出电压和温度

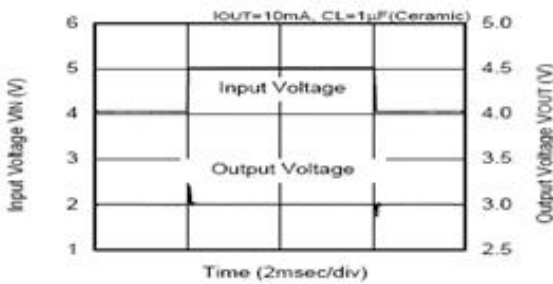


6、纹波抑制

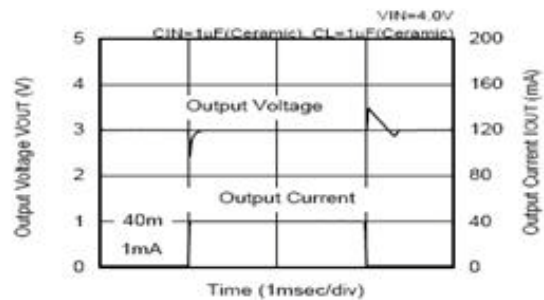


7、瞬态响应

输入过渡响应特性

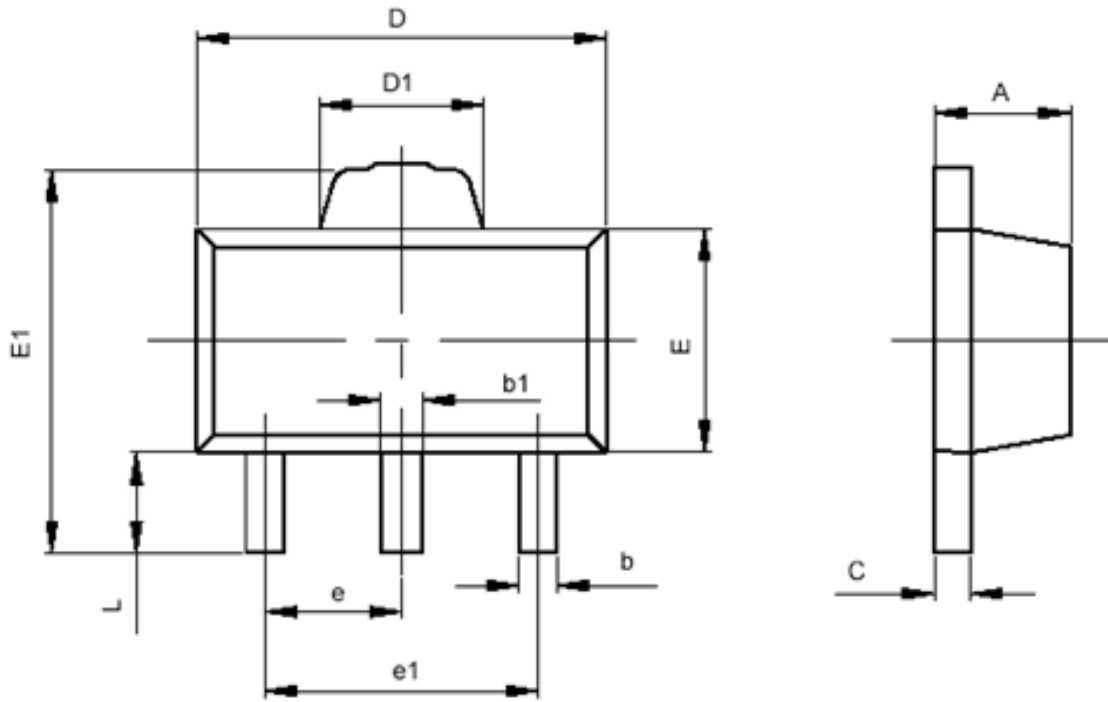


负载过渡输入响应特性



封装信息

SOT-89-3



| 符号 | 最小值 (mm) | 最大值 (mm) |
|----|------------|------------|
| A | 1.400 | 1.600 |
| b | 0.320 | 0.520 |
| b1 | 0.360 | 0.560 |
| c | 0.350 | 0.440 |
| D | 4.400 | 4.600 |
| D1 | 1.400 | 1.800 |
| E | 2.300 | 2.600 |
| E1 | 3.940 | 4.250 |
| e | 1.500TYP | |
| e1 | 2.900 | 3.100 |
| L | 0.900 | 1.100 |

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