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SEMICONDUCTOR



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XC6206P502MR-MS

Product specification

描述

XC6206P502MR-MS 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 ($8.0 \mu A_{Typ.}$)，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。

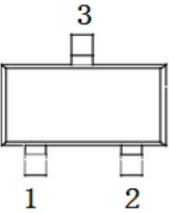
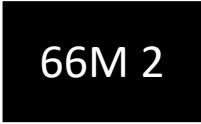
特性

- 高精度输出电压： $\pm 2.5\%$
- 输出电压：1.5V~5.0V(步长 0.1V)
- 极低的静态偏置电流 ($Typ. = 8.0 \mu A$)
- 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

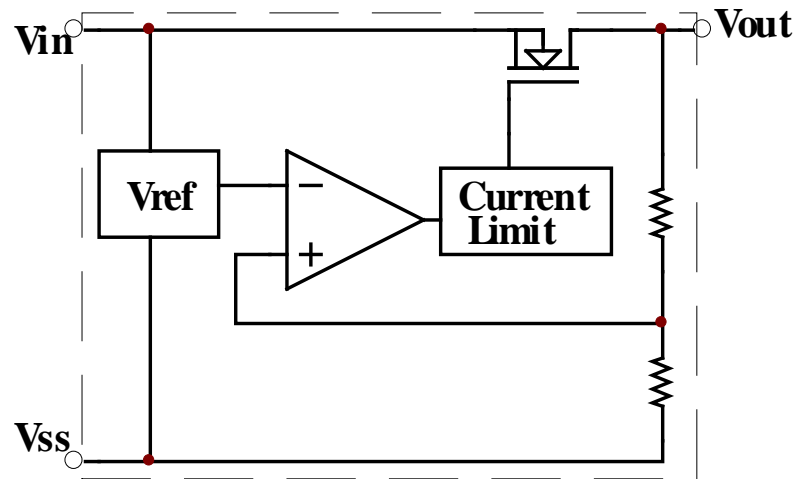
- 电池供电系统
- 无绳电话设备
- 无线控制系统
- 便携/手掌式计算机
- 便携式消费类设备
- 便携式仪器
- 汽车电子设备
- 电压基准源

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)
XC6206P502MR-MS	SOT-23			3000

管脚序号	管脚定义	功能说明
封装形式		
SOT-23		
1	VSS	芯片接地端
3	VOUT	芯片输出端
2	VIN	启动输入端

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	最大允许功耗	300
		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 (Cin=Cout=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}	$I_{OUT}=50mA$	$1.5V \leq V_{OUT}(T) \leq 2.5V$	200	280	mV
			$2.6V \leq V_{OUT}(T) \leq 3.3V$	160	240	
			$3.4V \leq V_{OUT}(T) \leq 5.5V$	120	200	
静态电流	I_{SS}	$V_{IN}=V_{OUT}(T)+1V$		7		μA
负载稳定度	ΔV_{OUT}	$V_{IN}=V_{OUT}(T)+1V, 1mA \leq I_{OUT} \leq 80mA$		20		mV
输入稳定度	$\Delta V_{OUT}/(\Delta V_{IN} \cdot V_{OUT})$	$I_{OUT}=1mA,$ $V_{OUT}(T)+0.5V \leq V_{IN} \leq 5.5V$		0.1	0.2	%/V
输出电压温度系数	$\Delta V_{OUT}/(\Delta Ta \cdot V_{OUT})$	$V_{IN}=V_{OUT}(T)+1V, I_{OUT}=10mA$ $-40^\circ C \leq Ta \leq 85^\circ C$		± 100		ppm/ $^\circ C$
输入电压	V_{IN}		1.8	--	8.0	V
纹波抑制比	PSRR	$V_{IN}=[V_{OUT}(T)+1]V +1V_{p-pAC}$ $I_{OUT}=10mA, f=1kHz$		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 $\leq V_{OUT}(E)*95\%$ 时的电流值。
- 4、 $V_{drop}=V_{IN1}-V_{OUT}(E)$ ； 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。
 $V_{OUT}(E)_{98\%}=V_{OUT}(E)*98\%$
 $V_{OUT}(E)$ ：当 $V_{IN}=V_{OUT}(T)+1V$ ， I_{out} =某一数值时的输出电压值。

测试电路

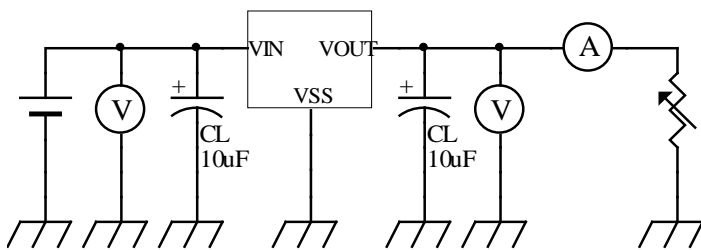


图 1

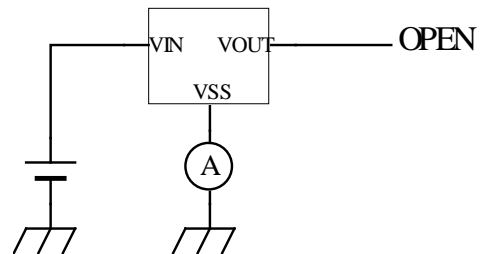
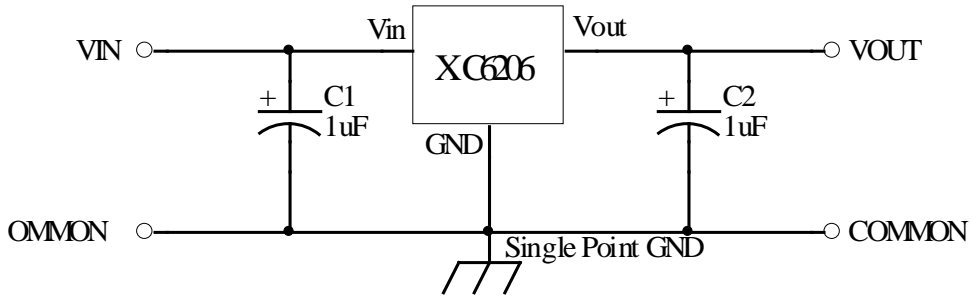


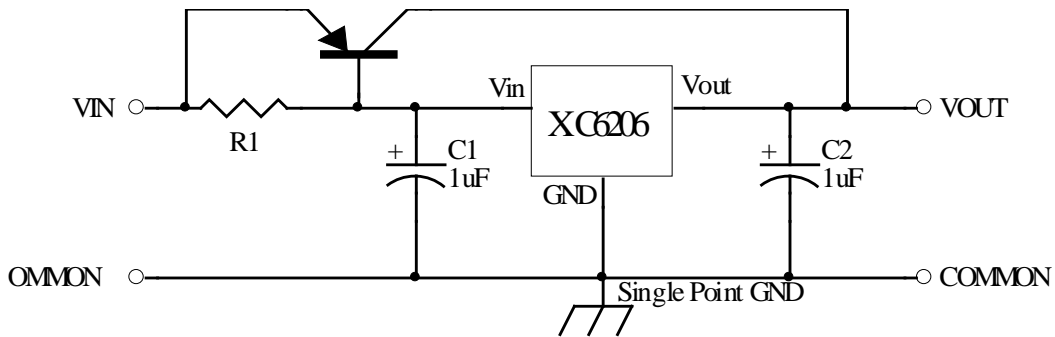
图 2

应用电路

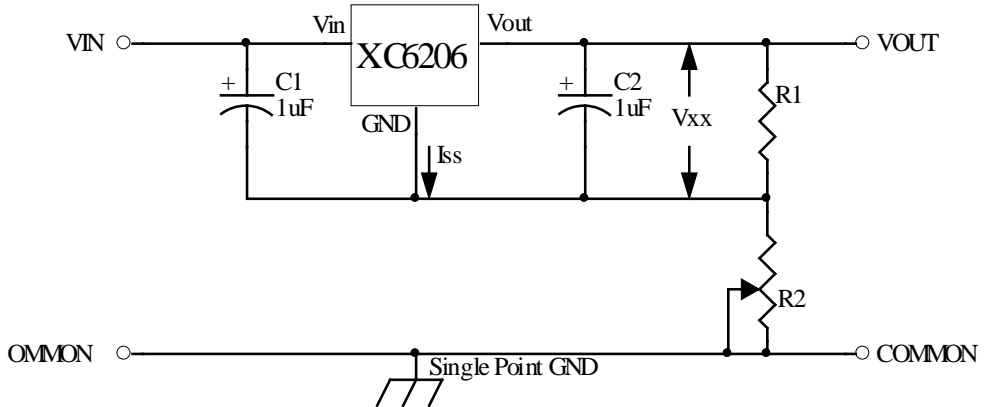
1、基本电路



2、大输出电流正电压型电压调整器

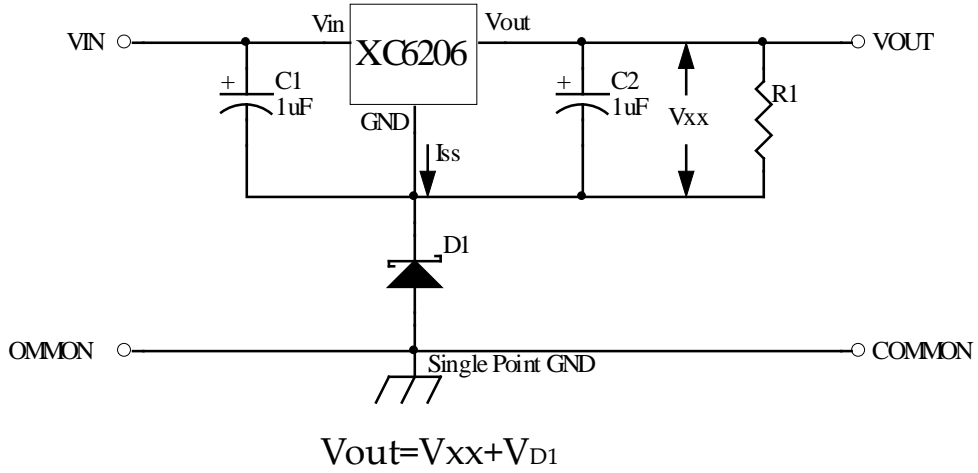


3、提高输出电压值电路（1）

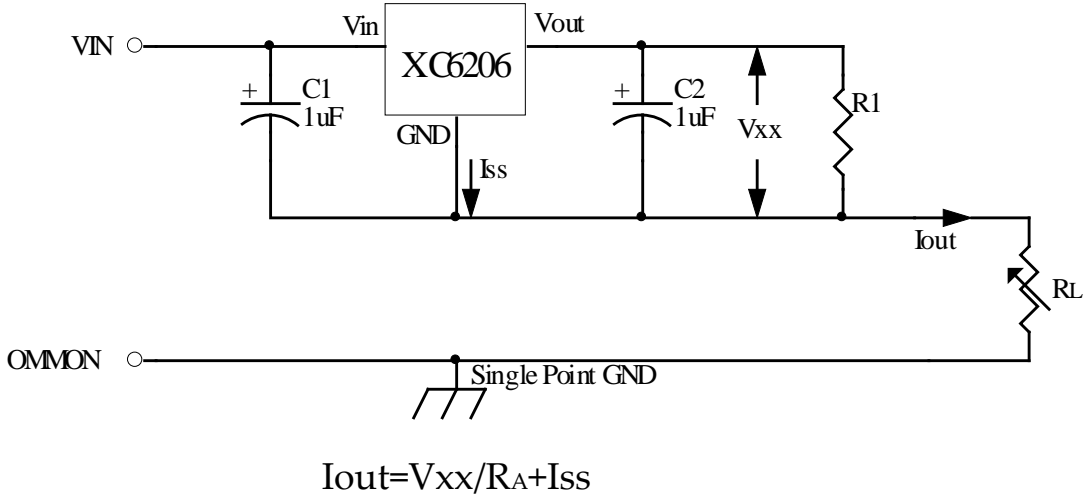


$$V_{out} = V_{XX}(1 + R2/R1) + I_{ss}R2$$

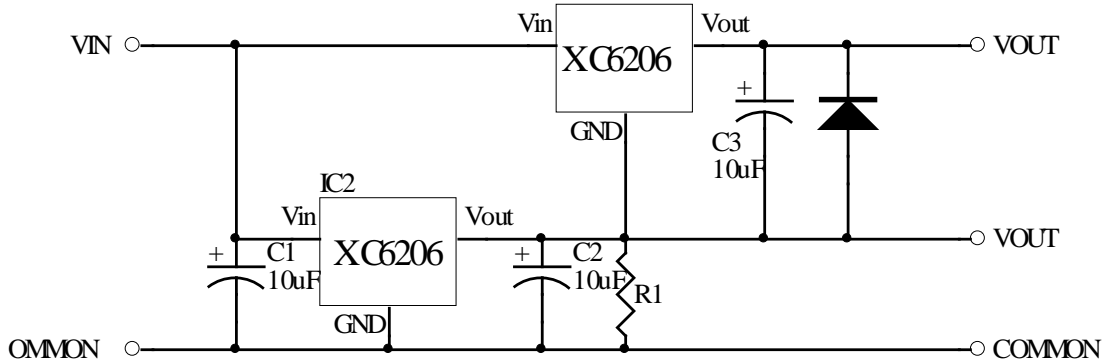
4、提高输出电压电路 (2)



5、恒流调整器

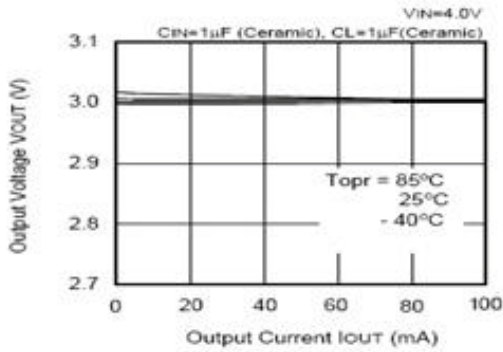


6、双输出

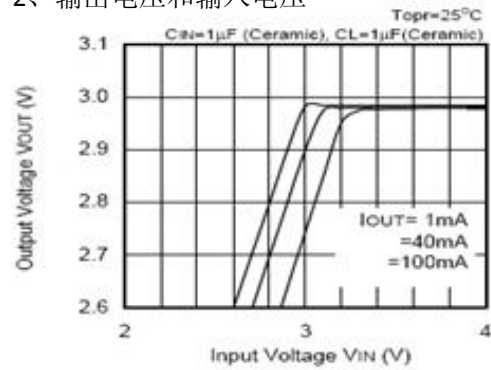


特性曲线图

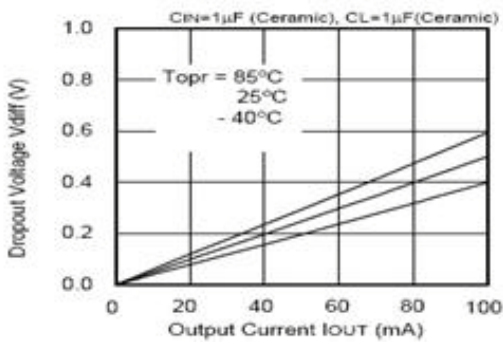
1、输出电压--输出电流（负载电流增加时）



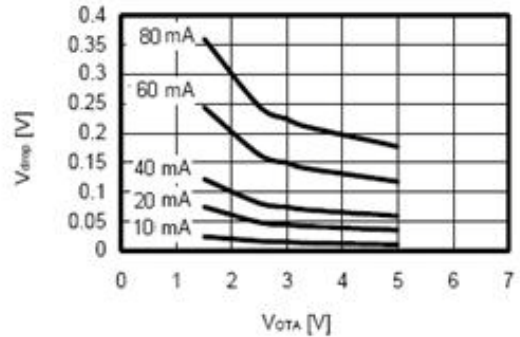
2、输出电压和输入电压



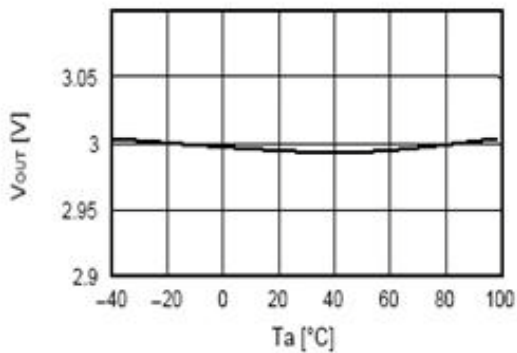
3、Dropout 电压和输出电流



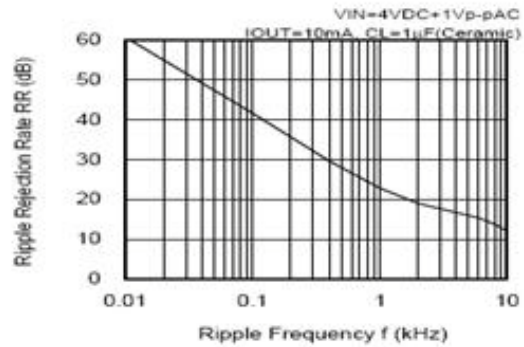
4、Dropout 电压和输出电压



5、输出电压和温度

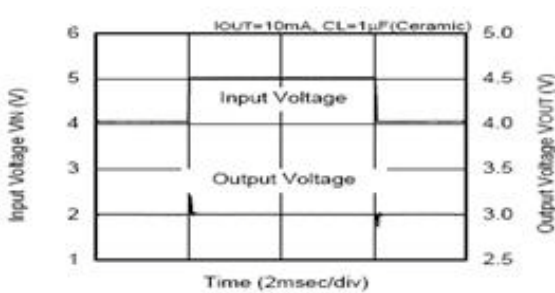


6、纹波抑制

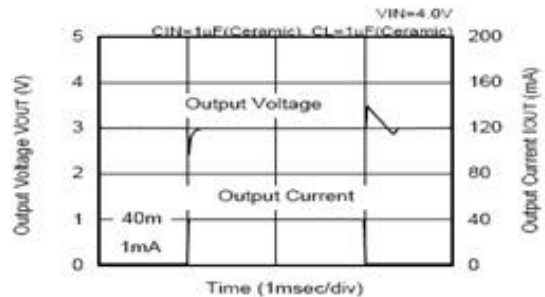


7、瞬态响应

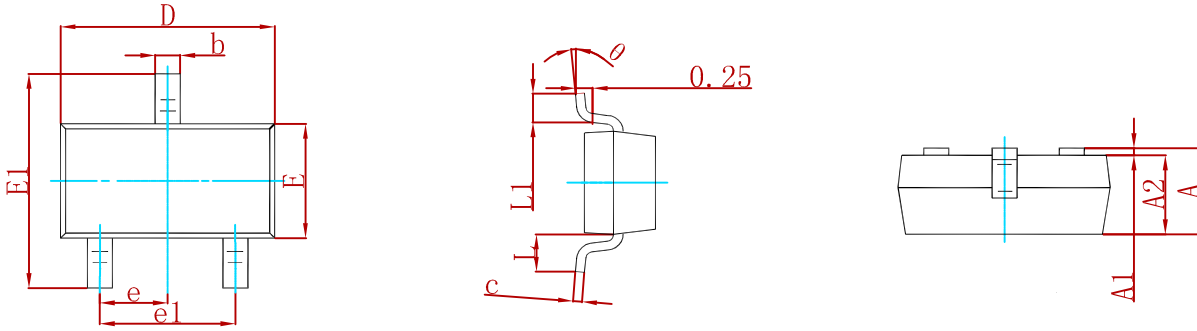
输入过渡响应特性



负载过渡输入响应特性

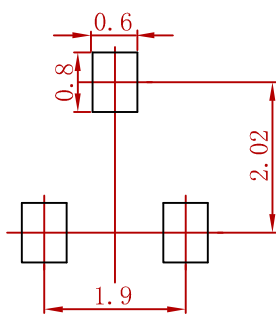


封装信息



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

建议焊盘布局



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

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