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662K-MS

Product specification

产品简介

662K 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（ $6.0 \mu A$ 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。

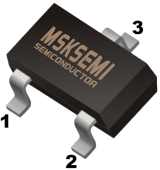
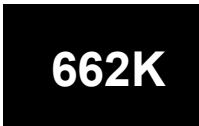
产品特点

- 高精度输出电压： $\pm 2.5\%$
- 输出电压：3.3V(步长 0.1V)
- 极低的静态偏置电流(Typ.= $6.0 \mu A$)
- 低的温度调整系数
- 封装形式：SOT-23
- 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

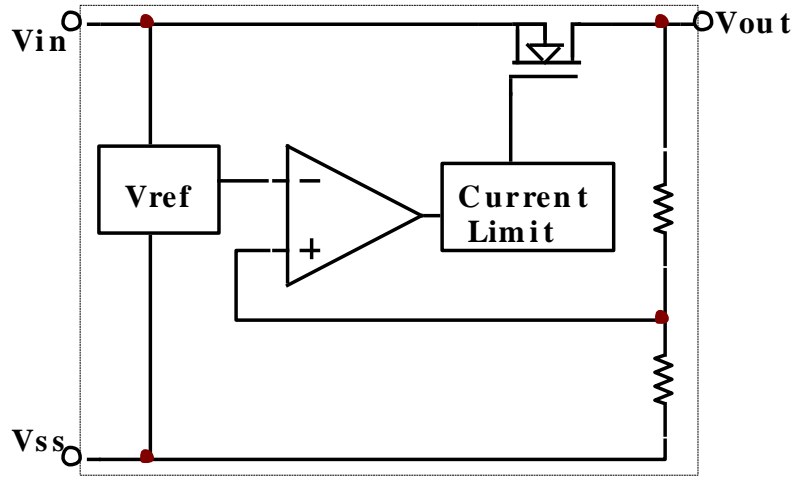
- 电池供电系统
- 无绳电话设备
- 无线控制系统
- 便携/手掌式计算机
- 便携式消费类设备
- 便携式仪器
- 汽车电子设备
- 电压基准源

封装形式和管脚定义功能

封装形式	管体标记
	
SOT-23	

管脚序号	管脚定义	功能说明
1	VSS	芯片接地端
2	VOUT	芯片输出端
3	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	$V_{ss}-0.3 \sim V_{out}+0.3$	V
电流	Iout	输出电流	500	mA
功耗	PD	最大允许功耗	300	mW
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, T_a=250C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	Vdrop	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		μ A
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} / (ΔT _a •V _{OUT})	V _{IN} = V _{OUT} (T)+1V, I _{OUT} =10mA -40°C ≤ T _a ≤ 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	Ishort	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、Vdrop= 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

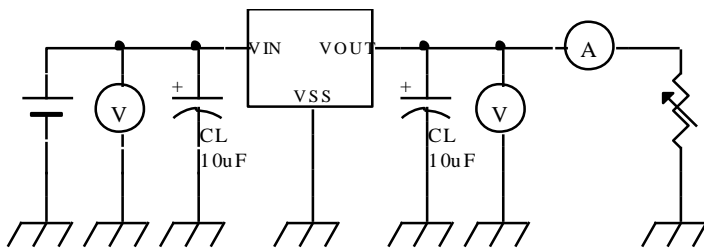


图 1

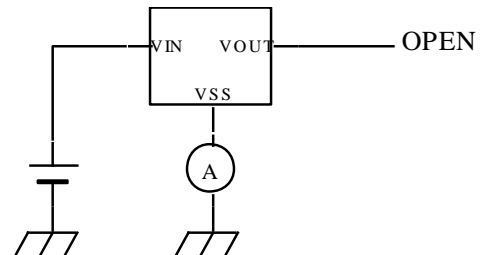
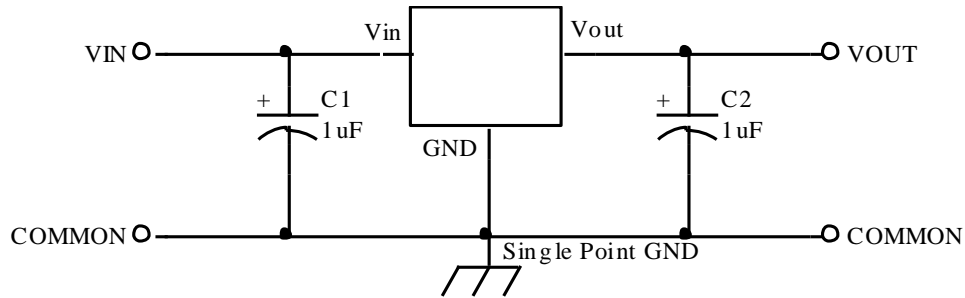


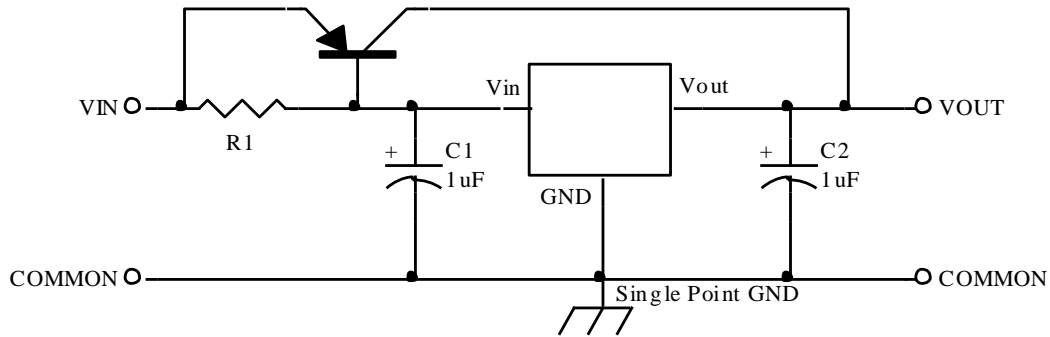
图 2

应用电路

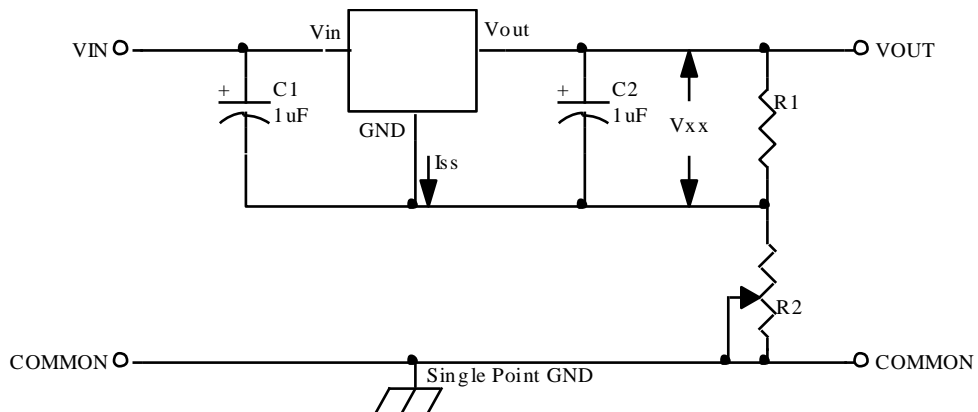
1、基本电路



2、大输出电流正电压型电压调整器

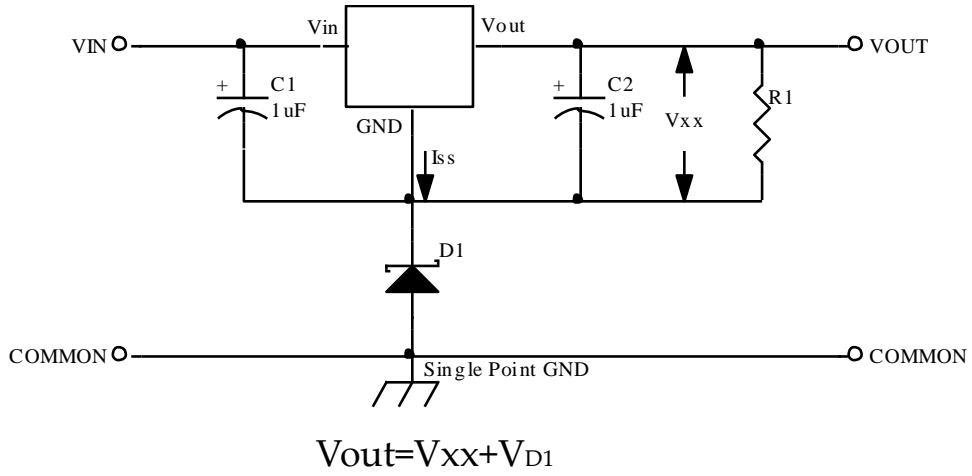


3、提高输出电压值电路（1）

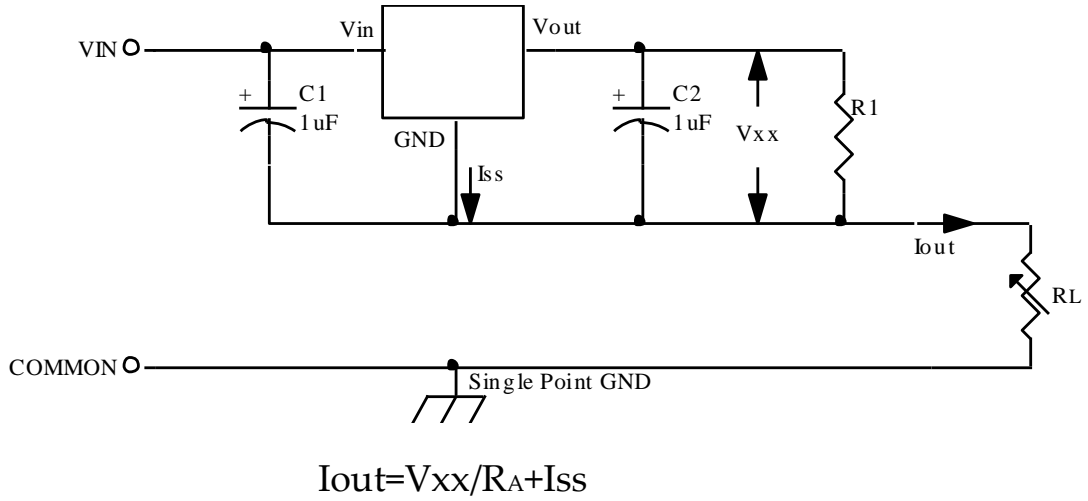


$$V_{out} = V_{xx}(1 + R_2/R_1) + I_{ss}R_2$$

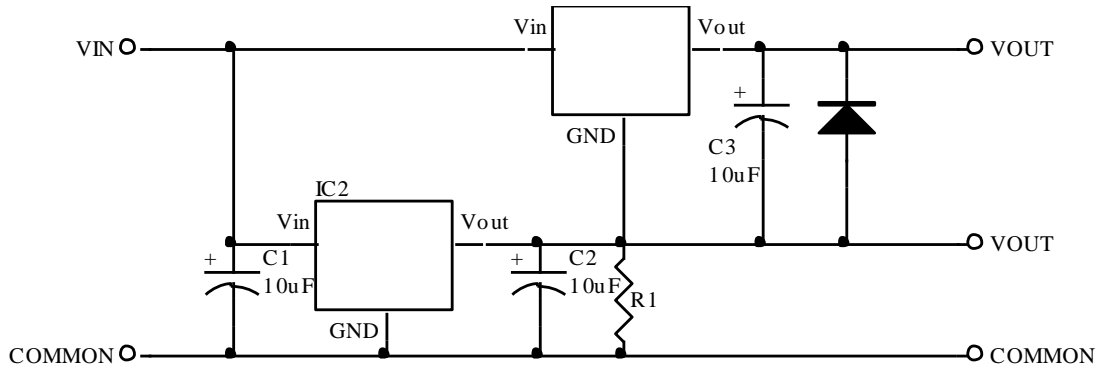
4、提高输出电压电路（2）



5、恒流调整器

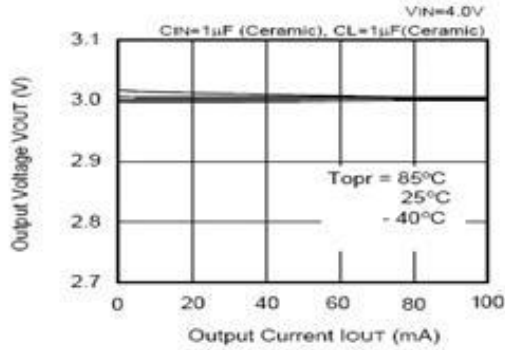


6、双输出

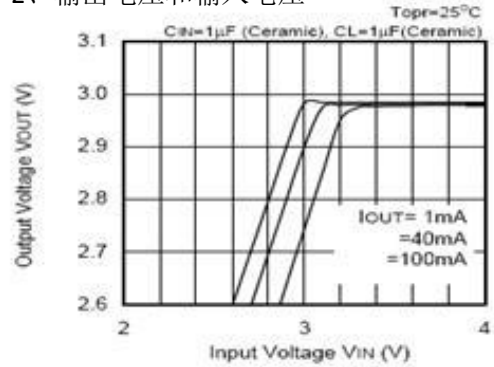


特性曲线图

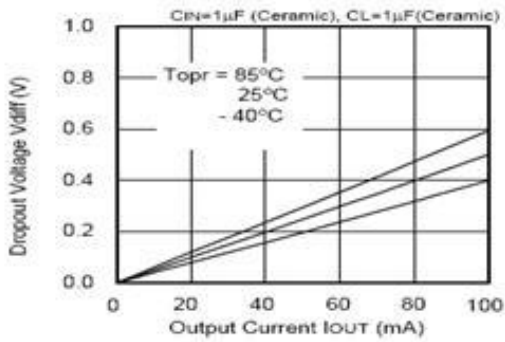
1、输出电压--输出电流（负载电流增加时）



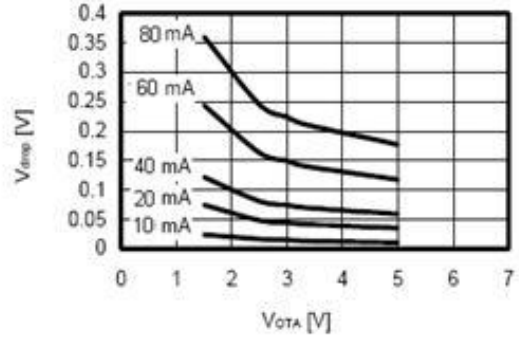
2、输出电压和输入电压



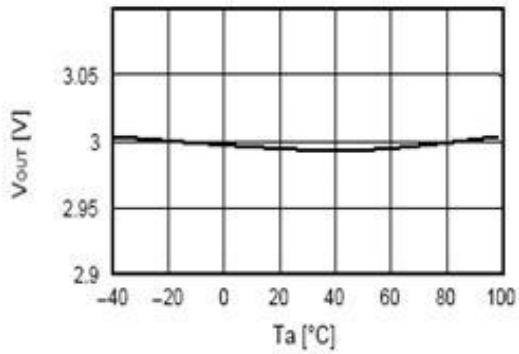
3、Dropout 电压和输出电流



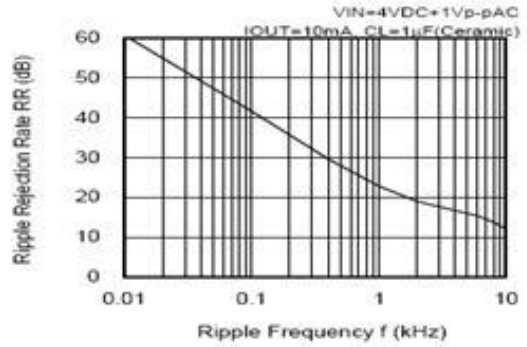
4、Dropout 电压和输出电压



5、输出电压和温度

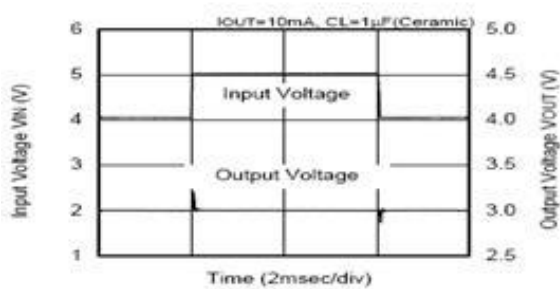


6、纹波抑制

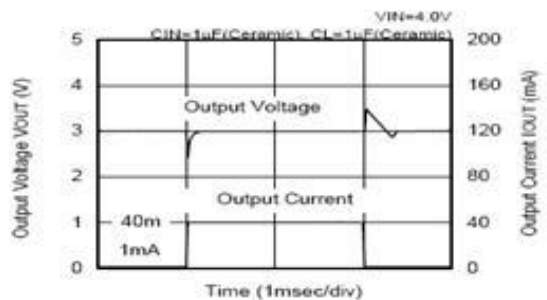


7、瞬态响应

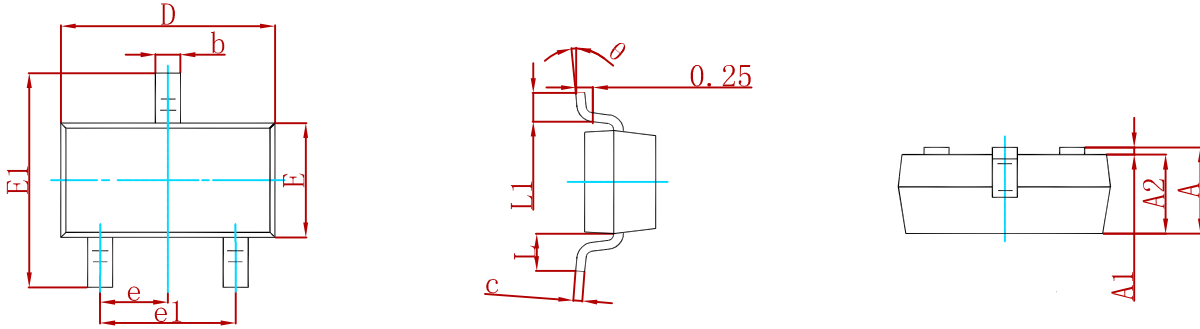
输入过渡响应特性



负载过渡输入响应特性

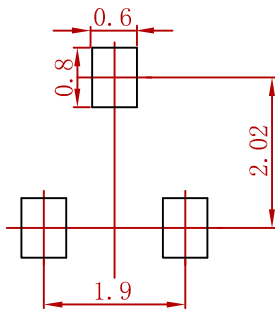


SOT-23封装数据



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°

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.

订购信息

P/N	PKG	QTY
662K-MS	SOT-23	3000

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