

# MSKSEMI 美森科

SEMICONDUCTOR



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## MS5108E23E-XX

产品手册

## 概述

MS5108E23E-XX 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 (80  $\mu$ A Typ.)，它们能在输入、输出电压差极小的情况下提 500mA 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有用 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。

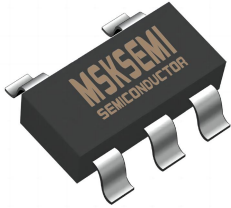
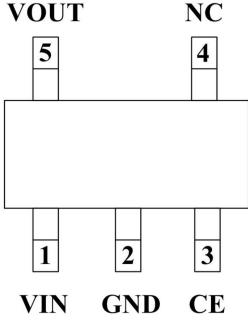
## 特点

- 输出范围：1.2V-3.3V
- 500mA 输出电流
- 高电源抑制比：75 分贝 1 千赫
- 极低的静态偏置电流：80uA（典型）
- 在关机模式下小于 1  $\mu$ A
- 交界处的温度运作为-40°C至+85°C

## 应用范围

- CDMA/GSM 移动电话
- PDAS/MP3
- WLAN 和蓝牙设备
- 无绳电话
- 电池供电系统

## 引脚描述和丝印

封装	引脚分布
	
SOT-23-5	

MS5108E23E-12	MS5108E23E-15	MS5108E23E-18	MS5108E23E-25
<b>WE=***</b>	<b>WG=***</b>	<b>XB=***</b>	<b>WH=***</b>
MS5108E23E-28	MS5108E23E-30	MS5108E23E-33	
<b>XD=***</b>	<b>WW=***</b>	<b>WJ=***</b>	

引脚描述

管脚号	管脚名	描述
1	VIN	电源端
2	GND	接地端
3	CE	即EN, 使能端
4	NC	悬空
5	VOUT	输出端

订购信息

型号	封装	最小包装
MS5108E23E-12	SOT-23-5	3000
MS5108E23E-15	SOT-23-5	3000
MS5108E23E-18	SOT-23-5	3000
MS5108E23E-25	SOT-23-5	3000
MS5108E23E-28	SOT-23-5	3000
MS5108E23E-30	SOT-23-5	3000
MS5108E23E-33	SOT-23-5	3000

封装耗散等级

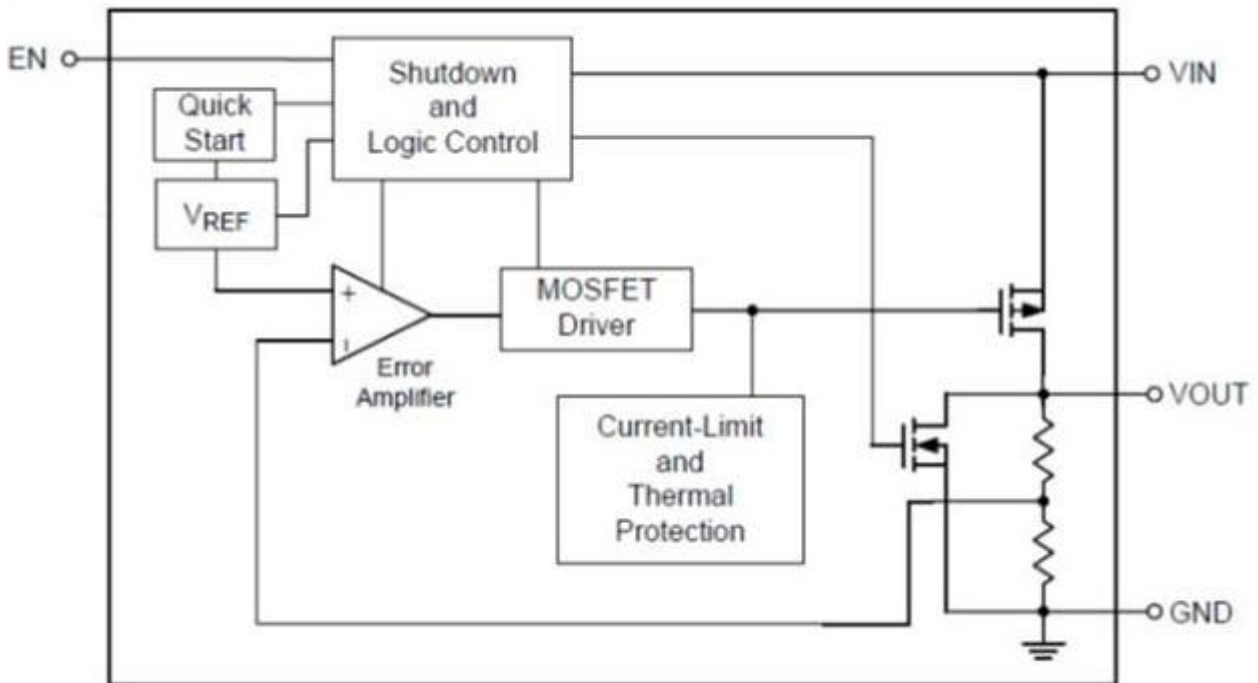
封装	Pd (mW)
SOT-23-5	300

极限参数

参数	符号	极限值	单位
Vin脚电压	ViN	7	V
Vout脚电流	Iout	600	mA
Vout脚电压	Vout	$V_{SS}-0.3 \sim V_{out}+0.3$	V
工作温度	Topr	-40~+85	°C
存贮温度	Tstg	-55~+125	°C
焊接温度和时间	Tsolder	260°C, 10s	°C

**注释：**超出“绝对极限参数”可能损毁器件。推荐工作范围内器件可以工作，但不保证其特性。长时间运行在绝对极限参数条件下可能会影响器件的可靠性。

结构框图



## 主要参数及工作特性

( $V_{in}=V_{out}+1V$ ,  $C_{in}=C_{out}=1\mu$ ,  $T_a=25^\circ C$  。 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	$V_{out}(E)$ (Note 2)	$I_{out}=40mA$ , $V_{in}=V_{out}+1V$	X0.98	$V_{our}(T)$ (Note 1)	X1.02	V
输入电压	$V_{in}$				7.0	V
最大输出电流	$I_{outmax}$	$V_{in}=V_{out}+1V$		500		mA
CE使能电压	$V_{ce}$ (Note3)	$V_{in}=V_{out}+1V$		1.1		V
负载特性	$\Delta V_{out}$	$V_{in}=V_{out}+1V$ , $1mA \leq I_{out} \leq 100mA$		50		mV
压差 (Note 3)	$V_{dif1}$	$I_{out}=100mA$		100		mV
	$V_{dif2}$	$I_{out}=200mA$		300		mV
静态电流	$I_{ss}$	$V_{in}=V_{out}+1V$		80		$\mu A$
关断电流	$I_{CEL}$	$V_{ce}=0V$		1		$\mu A$
电源电压调整率	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{out}=40mA$ $V_{out}+1V \leq V_{in} \leq 8V$		0.03		%/V
输出噪声	$e_n$	$I_{out}=40mA$ , 300Hz~50kHz		50		$\mu V_{rms}$
纹波抑制比	PSRR	$V_{in}=[V_{out}+1]V$ +1Vp-pAC $I_{out}=40mA$ , $f=1kHz$		75		dB

注释: 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。

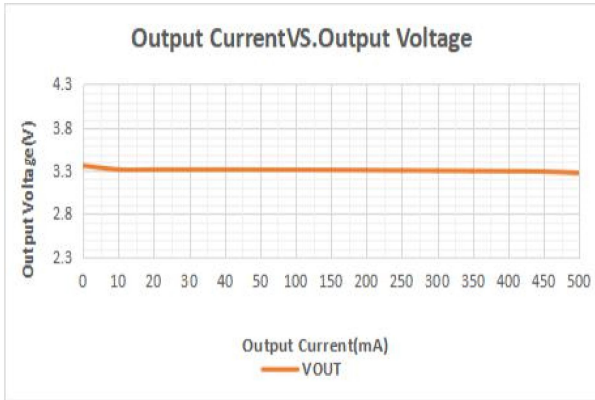
3、  $V_{CE}$  : 考虑到高低温和工艺偏差, 建议客户将 CE PIN 的使能电压设置为 1.1V, 保留有余量。  
芯片内部 CE PIN 对 GND PIN 之间有内置 1M $\Omega$ 电阻。

3、  $V_{dif}$  :  $V_{IN1} - V_{OUT}(E)'$

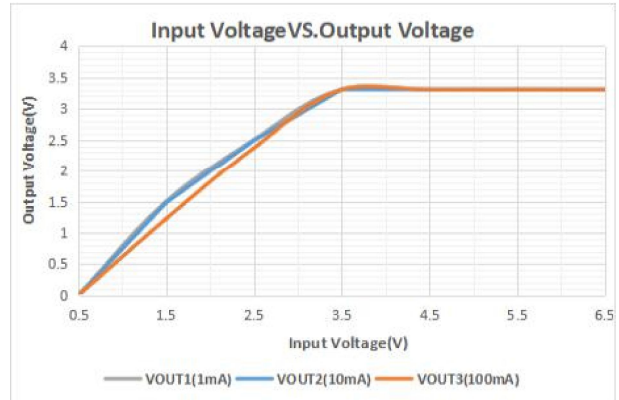
$V_{IN1}$ : 逐渐减小输入电压, 当输出电压降为  $V_{OUT}(E)$ 98% 时的输入电压。

$V_{OUT}(E)' = V_{OUT}(E) \times 98\%$ 。

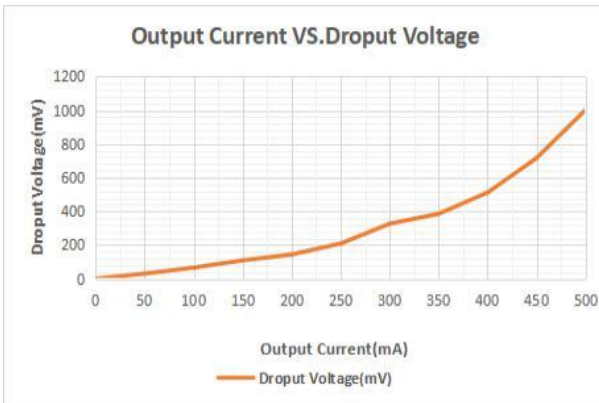
特性曲线



输出电流与输出电压关系

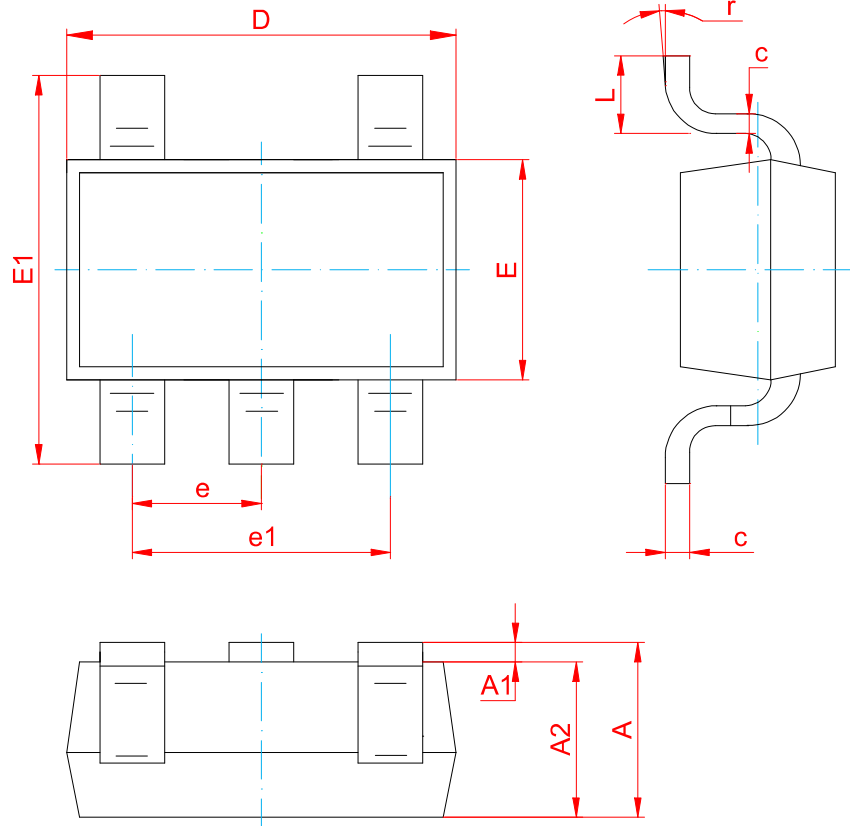


输入电压与输出电压关系



输出电流与压差的关系

封装说明



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
r	0°	8°	0°	8°

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