

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

Product data sheet

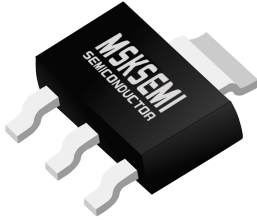
## 低压差线性稳压器

### 概述:

AMS1117 是一款低压差的线性稳压器。

### 特点:

- 包括三端可调输出和固定电压输出版本（固定电压包括 1.2V, 1.8V, 2.5V, 3.3V, 5V等, 其他电压规格可根据用户定制）
- 最大输出电流为 1A
- 输出电压精度高达±2%
- 稳定工作电压范围为高达 12V
- 电压线性度为 0.2%
- 负载线性度为 0.4%
- 环境温度:  $T_A$  的范围是  $-20^{\circ}\text{C} \sim 125^{\circ}\text{C}$

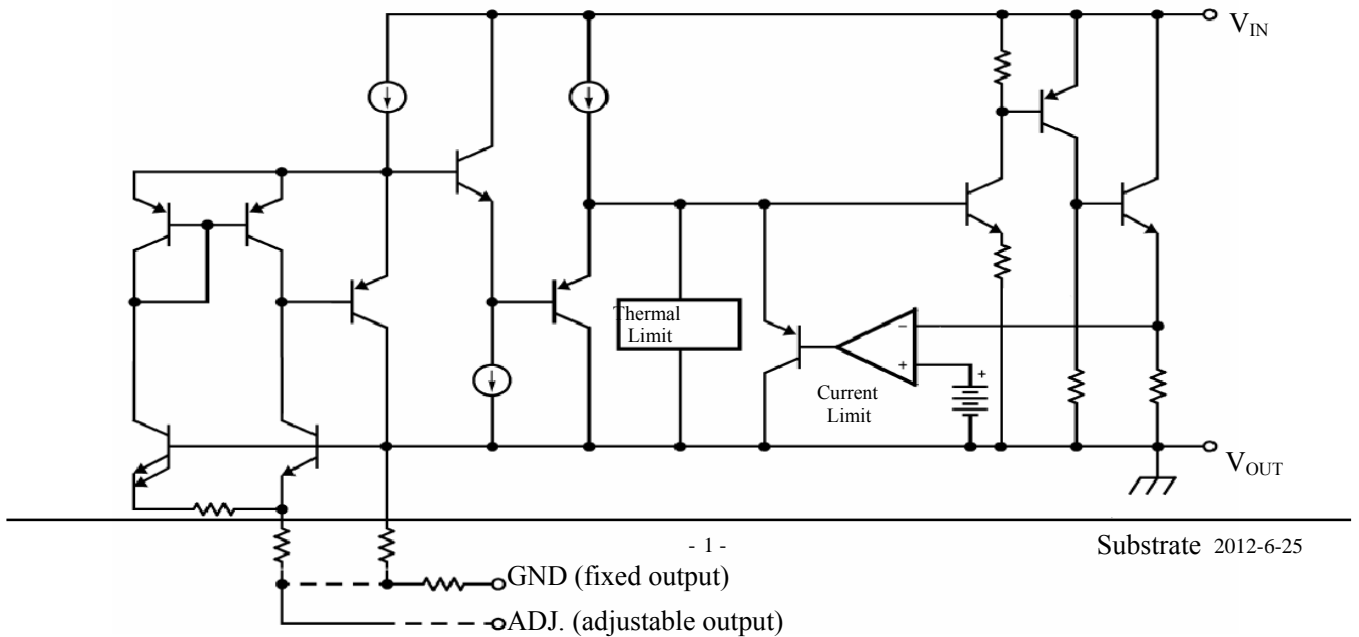


SOT-223

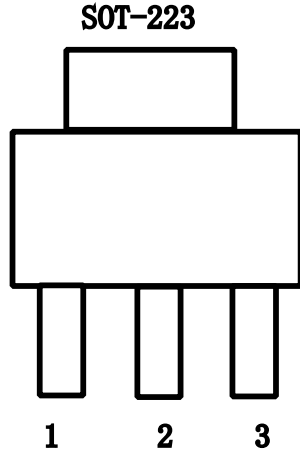
### 用途:

- 计算机主板、显卡
- LCD 监视器及 LCD TV
- DVD 解码板
- ADSL 等设备
- 开关电源的后级稳压

### 功能图:



引脚排列图:



引脚定义:

引脚号	符号	定义
1	GND	接地脚
2	Vout	输出端
3	Vin	输入端

固定电  
压型

引脚号	符号	定义
1	Adj.	可调端
2	Vout	输出端
3	Vin	输入端

可调电  
压型

极限值:

参数名称	符号	数值	单位
最大输入电压	Vin	18	V
最大节温	TJ	125	°C
最大环境温度	TA	125	°C
贮存温度	Ts	-65~ +150	°C
焊接温度和时间		300°C,10S	

推荐工作条件:

名称	最小	推荐	最大	单位
输入电压范围			15	V
工作环境温度	0		125	°C

主要参数和工作特性:

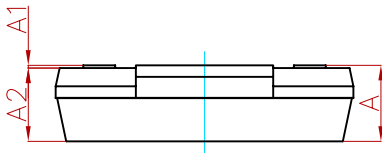
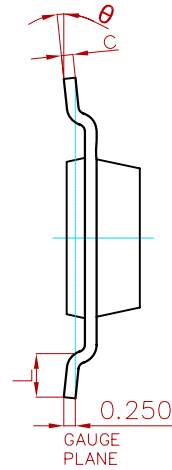
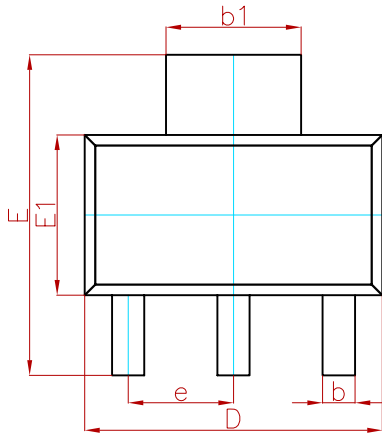
T<sub>j</sub>=25°C

参数	参数说明	条件	最小值	典型值	最大值	单位
Vref	参考电压	I <sub>out</sub> =10mA, V <sub>in</sub> -V <sub>out</sub> =2V 10mA ≤ I <sub>out</sub> ≤ 1A, 1.5V ≤ V <sub>in</sub> -V <sub>out</sub> ≤ 10V	1.225	1.25	1.275	V
Vout	输出电压	AMS1117-1.20V 10mA ≤ I <sub>out</sub> ≤ 1A, 2.7V ≤ V <sub>in</sub> ≤ 10V	1.176	1.2	1.224	V
		AMS1117-1.50V 10mA ≤ I <sub>out</sub> ≤ 1A, 3.0V ≤ V <sub>in</sub> ≤ 10V	1.47	1.5	1.53	V
		AMS1117-1.80V 10mA ≤ I <sub>out</sub> ≤ 1A, 3.25V ≤ V <sub>in</sub> ≤ 10V	1.764	1.80	1.836	V
		AMS1117-2.50V 10mA ≤ I <sub>out</sub> ≤ 1A, 3.9V ≤ V <sub>in</sub> ≤ 10V	2.45	2.50	2.55	V
		AMS1117-3.3V 10mA ≤ I <sub>out</sub> ≤ 1A, 5.3V ≤ V <sub>in</sub> ≤ 12V	3.235	3.3	3.365	V
		AMS1117-5V 10mA ≤ I <sub>out</sub> ≤ 1A, 6.5V ≤ V <sub>in</sub> ≤ 12V	4.9	5	5.1	V
ΔVout	电压线性度	AMS1117-ADJ I <sub>out</sub> =10mA, V ≤ V <sub>in</sub> -V <sub>out</sub> ≤ 10V		5	18	mV
		AMS1117-1.2V I <sub>out</sub> =10mA, 2.7V ≤ V <sub>in</sub> ≤ 10V		5	18	mV
		AMS1117-1.5V I <sub>out</sub> =10mA, 2.75V ≤ V <sub>in</sub> ≤ 10V		5	18	mV
		AMS1117-1.8V I <sub>out</sub> =10mA, 3.25V ≤ V <sub>in</sub> ≤ 10V		5	18	mV
		AMS1117-2.50V I <sub>out</sub> =10mA, 3.9V ≤ V <sub>in</sub> ≤ 10V		5	18	mV
		AMS1117-3.3V I <sub>out</sub> =10mA, 5.3V ≤ V <sub>in</sub> ≤ 12V		9	18	mV
		AMS1117-5V I <sub>out</sub> =10mA, 6.5V ≤ V <sub>in</sub> ≤ 12V		9	18	mV
ΔVout	负载线性度	AMS1117-ADJ V <sub>in</sub> = 3.25V, 10mA ≤ I <sub>out</sub> ≤ 1A		9	18	mV
		AMS1117-1.2V V <sub>in</sub> = 2.7V, 10mA ≤ I <sub>out</sub> ≤ 1A		9	18	mV
		AMS1117-1.5V V <sub>in</sub> = 3.25V, 10mA ≤ I <sub>out</sub> ≤ 1A		9	18	mV

主要参数和工作特性:

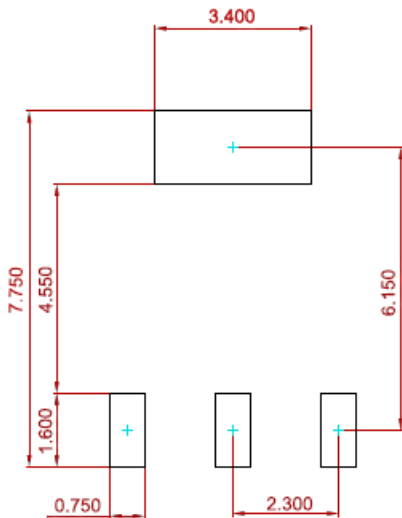
		AMS1117-1.8V $V_{in} = 3.25V, 10mA \leq I_{out} \leq 1A$		10	18	mV
		AMS1117-2.5V $V_{in} = 4.5V, 10mA \leq I_{out} \leq 1A$		10	18	mV
		AMS1117-3.3V $V_{in} = 5.3V, 0 \leq I_{out} \leq 1A$		12	20	mV
		AMS1117-5V $V_{in} = 6.5V, 0 \leq I_{out} \leq 1A$		12	20	mV
Vin-Vout	最小输入输出电压差	$\Delta V_{out}, \Delta V_{ref} = 1\%, I_{out} = 1A$			1.4	V
Ilimit	最小负载电流	AMS1117-ADJ			10	mA
Iq	静态电流	AMS1117-ADJ $V_{in} = 4.0V$			12	mA
		AMS1117-1.2V, $V_{in} = 4.8V$			12	mA
		AMS1117-1.5V, $V_{in} = 4.8V$			12	mA
		AMS1117-1.8V, $V_{in} = 4.8V$			12	mA
		AMS1117-2.5V, $V_{in} = 4.8V$			12	mA
		AMS1117-3.3V, $V_{in} = 4.8V$			12	mA
		AMS1117-5.0V, $V_{in} = 4.8V$			12	mA

**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
$b_1$	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
$\theta$	0°	10°	0°	10°

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.050$  mm.
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
AMS1117-XXX	SOT-223	2500

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