

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

AMS1117-XXX

产品规格手册

概述

AMS1117 是一款低压差的线性稳压器。

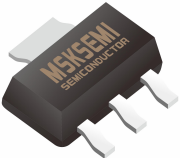
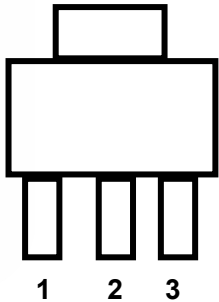
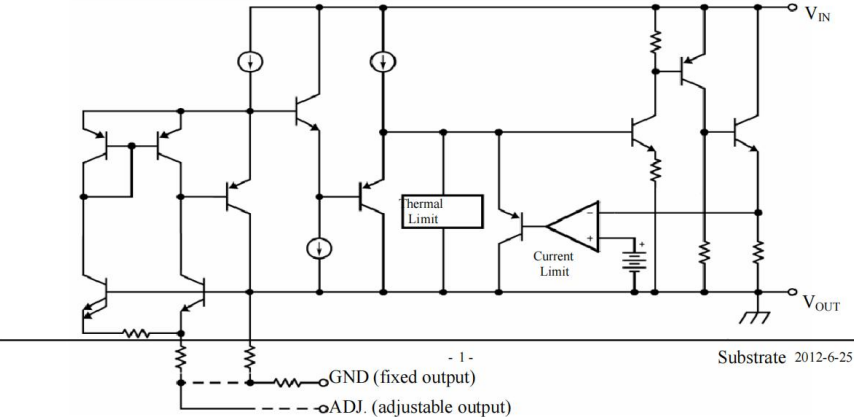
用途:

- 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

主要特点

- 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 $\pm 2\%$
- 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 $-20^{\circ}\text{C} \sim 125^{\circ}\text{C}$

参考信息

| 封装图 | 引脚排列 | 功能图 |
|---|---|---|
|  |  |  |
| SOT-223 | | Substrate 2012-6-25 |

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:

| 参数 | 参数说明 | 条件 | 最小值 | 典型值 | 最大值 | 单位 |
|------|------|--|-------|------|-------|----|
| Vref | 参考电压 | Iout= 10 mA, Vin- Vout=2V 10mA≤Iout≤1A , 1.5V≤Vin- Vout≤10V | 1.225 | 1.25 | 1.275 | V |
| Vout | 输出电压 | AMS1117- 1.20V 10mA≤Iout≤1A , 2.7V≤Vin≤10V | 1.176 | 1.2 | 1.224 | V |
| | | AMS1117- 1.50V 10mA≤Iout≤1A , 3.0V≤Vin≤10V | 1.47 | 1.5 | 1.53 | V |
| | | AMS1117- 1.80V 10mA≤Iout≤1A , 3.25 V≤Vin≤10V | 1.764 | 1.80 | 1.836 | V |
| | | AMS1117-2.50V 10mA≤Iout≤1A , 3.9 V≤Vin≤10V | 2.45 | 2.50 | 2.55 | V |
| | | AMS1117-3.3V 10mA≤Iout≤1A , 5.3 V≤Vin≤12V | 3.235 | 3.3 | 3.365 | V |
| | | AMS1117-5V 10mA≤Iout≤1A , 6.5V≤Vin≤12V | 4.9 | 5 | 5.1 | V |

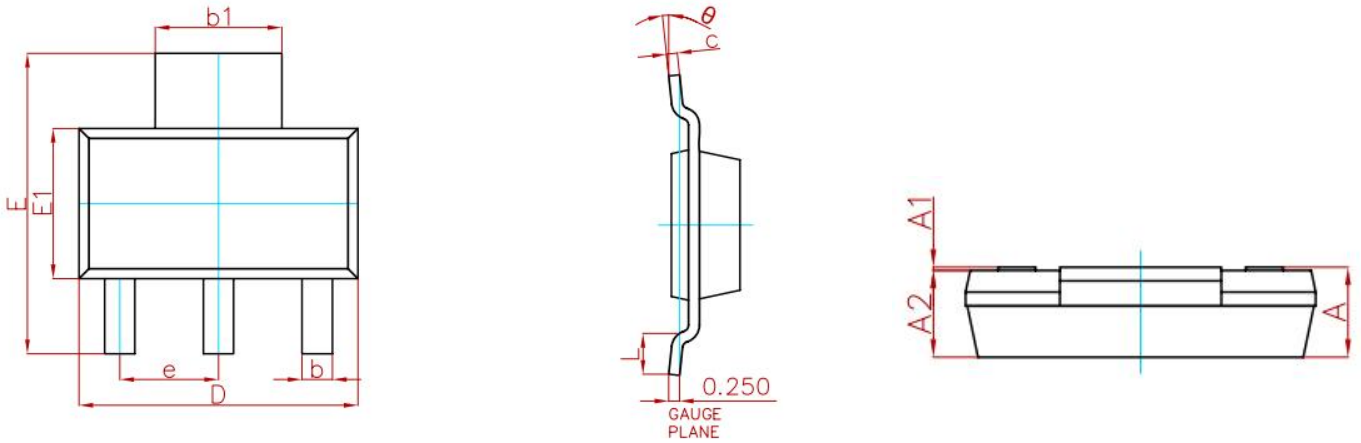
主要参数和工作特性:

| | | | | | | |
|--------|-------|---|--|---|----|----|
| Δ Vout | 电压线性度 | AMS1117-ADJ Iout=10mA, V≤Vin-Vout≤10V | | 5 | 18 | V |
| | | AMS1117-1.2V Iout=10mA, 2.7V≤Vin≤10V | | 5 | 18 | V |
| | | AMS1117-1.5V Iout=10mA, 2.75V≤Vin≤10V | | 5 | 18 | V |
| | | AMS1117-1.8V Iout=10mA, 3.25 V≤Vin≤10V | | 5 | 18 | V |
| | | AMS1117-2.50V Iout=10mA, 3.9 V≤Vin≤10V | | 5 | 18 | V |
| | | AMS1117-3.3V Iout=10mA, 5.3 V≤Vin≤12V | | 9 | 18 | V |
| | | AMS1117-5V Iout=10mA, 6.5V≤Vin≤12V | | 9 | 18 | V |
| Δ Vout | 负载线性度 | AMS1117-ADJ Vin = 3.25V, 10mA≤Iout≤1A | | 9 | 18 | V |
| | | AMS1117-1.2V Vin = 2.7 V, 10mA≤Iout≤1A | | 9 | 18 | mV |
| | | AMS1117-1.5V Vin = 3.25V, 10mA≤Iout≤1A | | 9 | 18 | mV |

主要参数和工作特性:

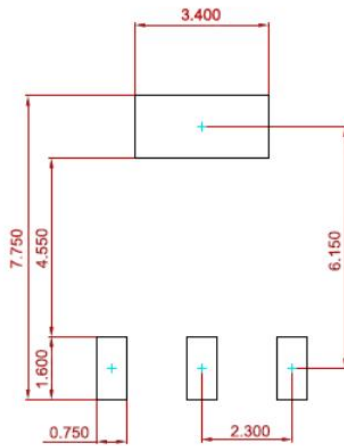
| | | | | | | |
|----------|-----------|---|--|----|-----|----|
| | | AMS1117-1.8V Vin = 3.25V, 10mA ≤ Iout ≤ 1A | | 10 | 18 | mV |
| | | AMS1117-2.5V Vin = 4.5 V, 10mA ≤ Iout ≤ 1A | | 10 | 18 | mV |
| | | AMS1117-3.3V Vin=5.3V, 0 ≤ Iout ≤ 1A | | 12 | 20 | mV |
| | | AMS1117-5V Vin=6.5V, 0 ≤ Iout ≤ 1A | | 12 | 20 | mV |
| Vin-Vout | 最小输入输出电压差 | ΔVout, ΔVref,=1%, Iout=1A | | | 1.4 | V |
| Ilimit | 最小负载电流 | AMS1117-ADJ | | | 10 | mA |
| Iq | 静态电流 | AMS1117-ADJ Vin = 4.0V | | | 12 | mA |
| | | AMS1117-1.2V, Vin = 4.8V | | | 12 | mA |
| | | AMS1117-1.5V, Vin = 4.8V | | | 12 | mA |
| | | AMS1117-1.8V, Vin = 4.8V | | | 12 | mA |
| | | AMS1117-2.5V, Vin = 4.8V | | | 12 | mA |
| | | AMS1117-3.3V, Vin = 4.8V | | | 12 | mA |
| | | AMS1117-5.0V, Vin = 4.8V | | | 12 | mA |

包装数据



| 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 |
| b1 | 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 | — |
| θ | 0° | 10° | 0° | 10° |

参考焊盘布局



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

卷轴规格

| P/N | PKG | QTY |
|------------|---------|------|
| AMS1117-XX | SOT-223 | 2500 |

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