

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

AMS1117-XXX

Product specification

概述

AMS1117 是一款低压差的线性稳压器。

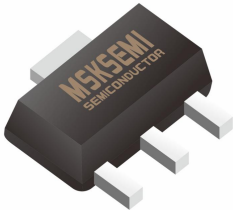
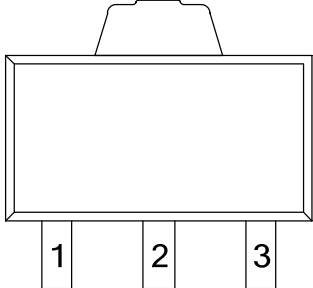

特点

- 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：TA 的范围是 0°C~125°C

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

封装形式和管脚定义功能

封装	引脚排列图	管体标记
 SOT-89		 备注：****代表内部生产订单编号

引脚定义

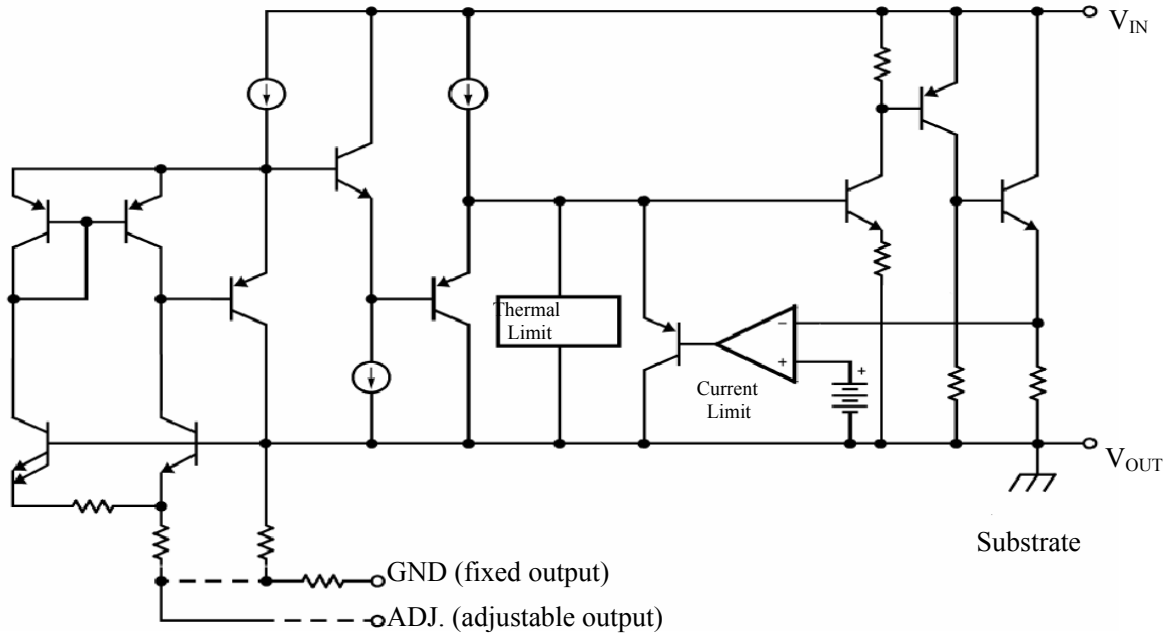
引脚号	符号	定义
1	GND	接地脚
2	Vout	输出端
3	Vin	输入端

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

功能图



极限值

参数名称	符号	数值	单位
最大输入电压	V_{in}	18	V
最大结温	T_J	125	$^{\circ}\text{C}$
最大环境温度	T_A	125	$^{\circ}\text{C}$
贮存温度	T_s	-65~+150	$^{\circ}\text{C}$
焊接温度和时间		300 $^{\circ}\text{C}$,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	$^{\circ}\text{C}$

主要参数和工作特性

 $T_j=25^{\circ}\text{C}$

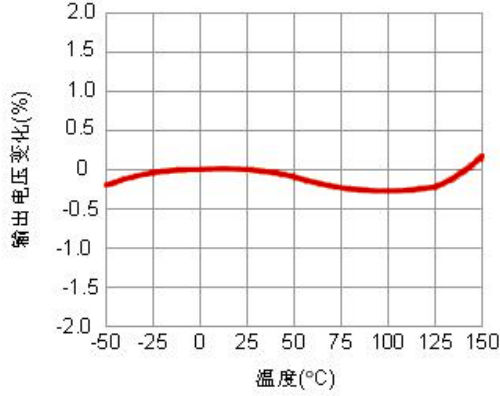
参数	参数说明	条件	最小值	典型值	最大值	单位
Vref	参考电压	$I_{out}=10\text{mA}$, $V_{in}-V_{out}=2\text{V}$ $10\text{mA}\leq I_{out}\leq 1\text{A}$, $1.5\text{V}\leq V_{in}-V_{out}\leq 10\text{V}$	1.225	1.25	1.275	V
Vout	输出电压	AMS1117-1.50V $10\text{mA}\leq I_{out}\leq 1\text{A}$, $3.0\text{V}\leq V_{in}\leq 10\text{V}$	1.470	1.5	1.530	V
		AMS1117-1.80V $10\text{mA}\leq I_{out}\leq 1\text{A}$, $3.25\text{V}\leq V_{in}\leq 10\text{V}$	1.764	1.80	1.836	V
		AMS1117-2.50V $10\text{mA}\leq I_{out}\leq 1\text{A}$, $3.9\text{V}\leq V_{in}\leq 10\text{V}$	2.45	2.50	2.55	V
		AMS1117-3.3V $10\text{mA}\leq I_{out}\leq 1\text{A}$, $5.3\text{V}\leq V_{in}\leq 12\text{V}$	3.235	3.3	3.365	V
		AMS1117-5V $10\text{mA}\leq I_{out}\leq 1\text{A}$, $6.5\text{V}\leq V_{in}\leq 12\text{V}$	4.9	5	5.1	V
ΔV_{out}	电压线性度	AMS1117-ADJ $I_{out}=10\text{mA}$, $V\leq V_{in}-V_{out}\leq 10\text{V}$		5	18	mV
		AMS1117-1.5V $I_{out}=10\text{mA}$, $2.75\text{V}\leq V_{in}\leq 10\text{V}$		5	18	mV
		AMS1117-1.8V $I_{out}=10\text{mA}$, $3.25\text{V}\leq V_{in}\leq 10\text{V}$		5	18	mV
		AMS1117-2.50V $I_{out}=10\text{mA}$, $3.9\text{V}\leq V_{in}\leq 10\text{V}$		5	18	mV
		AMS1117-3.3V $I_{out}=10\text{mA}$, $5.3\text{V}\leq V_{in}\leq 12\text{V}$		9	18	mV
		AMS1117-5V $I_{out}=10\text{mA}$, $6.5\text{V}\leq V_{in}\leq 12\text{V}$		9	18	mV
ΔV_{out}	负载线性度	AMS1117-ADJ $V_{in}=3.25\text{V}$, $10\text{mA}\leq I_{out}\leq 1\text{A}$		9	18	mV
		AMS1117-1.5V $V_{in}=3.25\text{V}$, $10\text{mA}\leq I_{out}\leq 1\text{A}$		9	18	mV

主要参数和工作特性

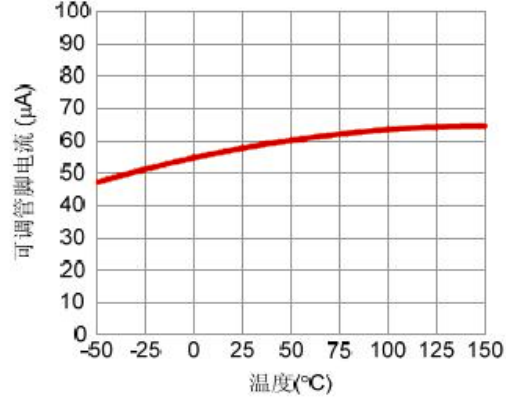
		AMS1117-1.8V $V_{in} = 3.25V, 10mA \leq I_{out} \leq 1A$		10	18	mV
		AMS1117-2.5V $V_{in} = 4.5 V, 10mA \leq I_{out} \leq 1A$		10	18	mV
		AMS1117-3.3V $V_{in} = 5.3V, 0 \leq I_{out} \leq 1A$		12	20	mV
		AMS1117-5V $V_{in} = 6.5V, 0 \leq I_{out} \leq 1A$		12	20	mV
Vin-Vout	最小输入输出电压差	$\Delta V_{out}, \Delta V_{ref} = 1\%, I_{out} = 1A$			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
		AMS1117-1.5V, $V_{in} = 4.8V$			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

典型電性特性曲線

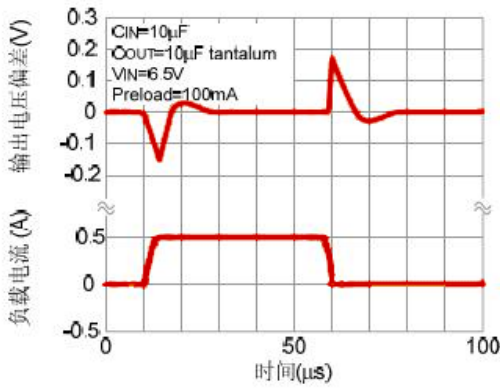
温度稳定性



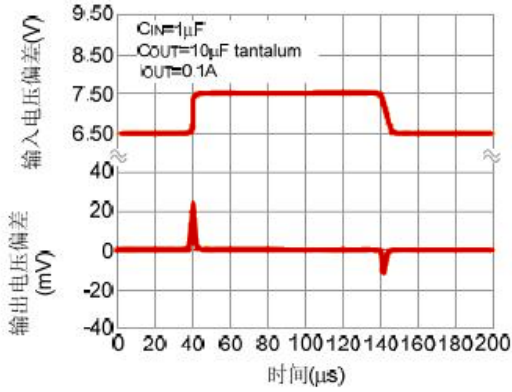
可调管脚电流



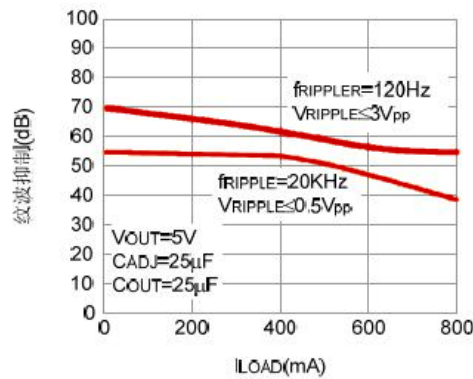
负载瞬态反应 (VOUT=5 V)



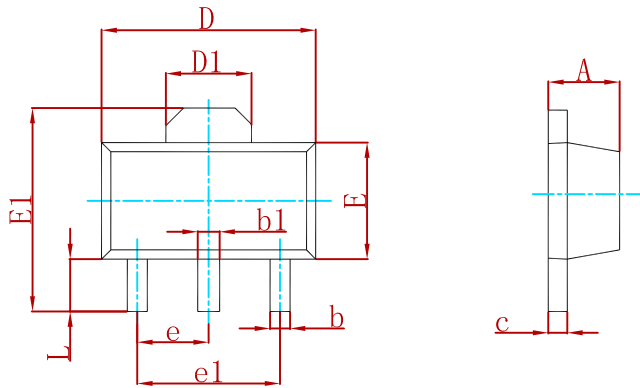
线性瞬态响应 (VOUT=5 V)



纹波抑制 VS 电流

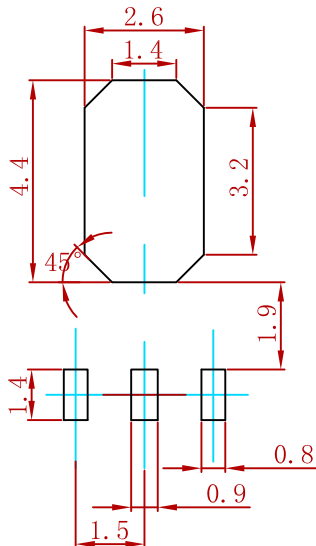


包装信息



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

建议焊盘

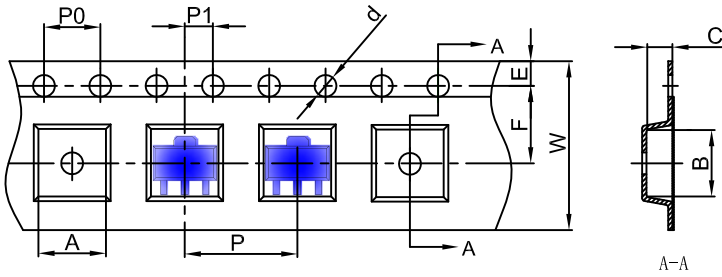


Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
AMS1117-XXX	SOT-89	1000

SOT-89 Embossed Carrier Tape

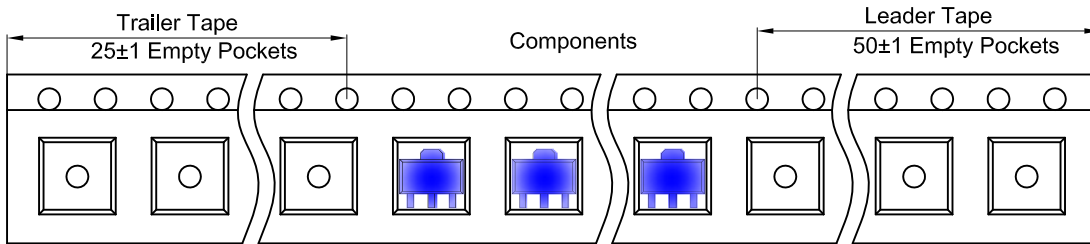


Packaging Description:

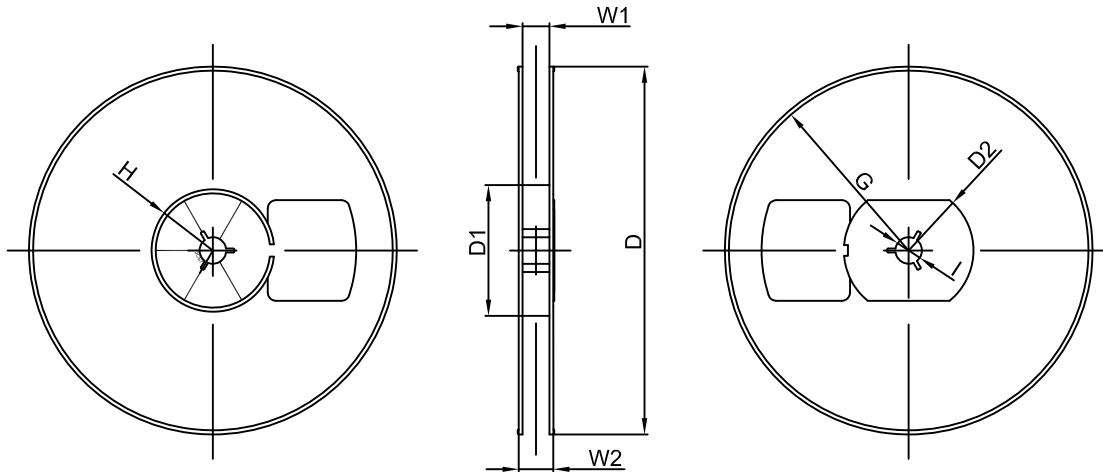
SOT-89 parts are shipped in tape. The carrier tape is made from a dissipative (carbon polycarbonate resin). The cover tape is a multilayer film (Heat Activated Adhesive in nature) prima composed of polyester film, adhesive layer, se and anti-static sprayed agent. These reeled pa standard option are shipped with 1,000 units p or 18.0 cm diameter reel. The reels are clear i and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89 Tape Leader and Trailer



SOT-89 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

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