

描述 / Descriptions

SOT-223 塑封封装 电压调整器。
Voltage Regulator in a SOT-223 Plastic Package.

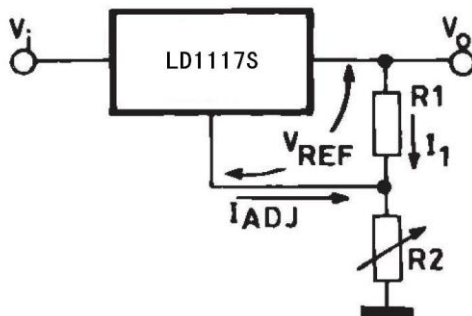
特征 / Features

高效率、低压差,输出电流达到 1.0A,内设过流、过热保护、无卤产品。
High efficiency, Low dropout voltage(1V TYP.)output current up to 1.0A, internal current and thermal limit, HF product.

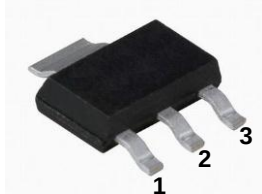
用途 / Applications

电压调整器。
Voltage Regulator.

内部等效电路/应用电路 / Equivalent Circuit or Application Circuit



引脚排列 / Pinning



PIN1 : GND/ADJ PIN 2 : OUT PIN 3 : IN

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。 See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
DC Input Voltage	V _I	15	V
Thermal Resistance Junction-case	R _{θJC}	15	°C/W
Storage Temperature Range	T _{stg}	-40~150	°C

电性能参数 / Electrical Characteristics(T_j= -25 to 125°C)

参数 Parameter	符号 Symbol	型号 Type	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Reference Voltage	V _{ref}	LD1117SG-ADJ	V _{in} -V _o =2V I _o =10mA T _j =25°C	1.225	1.250	1.275	V
			10mA ≤ I _o ≤ 1000mA, 1.4V ≤ (V _{in} -V _o) ≤ 10V	1.225	1.250	1.275	
Output Voltage	V _o	LD1117SG-1.2	V _{in} =3.2V I _o =10mA T _j =25°C	1.176	1.2	1.224	V
			10mA ≤ I _o ≤ 1000mA 3V ≤ V _{in} ≤ 8V	1.176	1.2	1.224	
		LD1117SG-1.8	V _{in} =3.8V I _o =10mA T _j =25°C	1.764	1.800	1.836	V
			0 ≤ I _o ≤ 1000mA, 3.3V ≤ V _{in} ≤ 8V	1.764	1.800	1.836	
		LD1117SG-2.5	V _{in} =4.5V I _o =10mA T _j =25°C	2.450	2.500	2.550	V
			0 ≤ I _o ≤ 1000mA, 3.9V ≤ V _{in} ≤ 10V	2.450	2.500	2.550	
		LD1117SG-3.3	V _{in} =5.3V I _o =10mA T _j =25°C	3.234	3.300	3.366	V
			0 ≤ I _o ≤ 1000mA, 4.75V ≤ V _{in} ≤ 10V	3.234	3.300	3.366	
		LD1117SG-5.0	V _{in} =7V I _o =10mA T _j =25°C	4.900	5.000	5.100	V
			0 ≤ I _o ≤ 1000mA, 6.5V ≤ V _{in} ≤ 15V	4.900	5.000	5.100	
Load Regulation	ΔV _o	LD1117SG-Adj	V _{in} -V _o =3V 10mA ≤ I _o ≤ 1000mA			30	mV
		LD1117SG-1.2	V _{in} =3V 10mA ≤ I _o ≤ 1000mA			30	mV
		LD1117SG-1.8	V _{in} =3.3V 0mA ≤ I _o ≤ 1000mA			30	mV
		LD1117SG-2.5	V _{in} =3.9V 0mA ≤ I _o ≤ 1000mA			30	mV
		LD1117SG-3.3	V _{in} =4.75V 0mA ≤ I _o ≤ 1000mA			30	mV
		LD1117SG-5.0	V _{in} =6.5V 0mA ≤ I _o ≤ 1000mA			30	mV

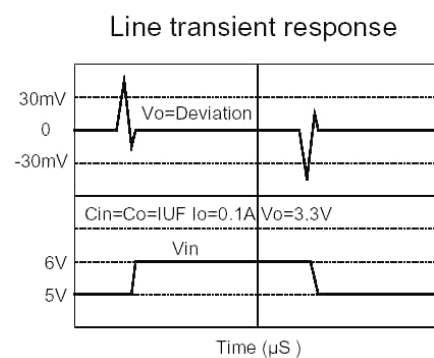
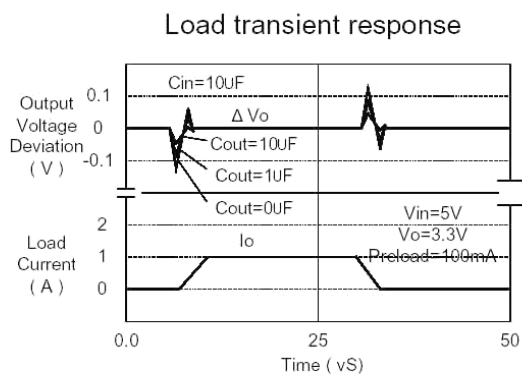
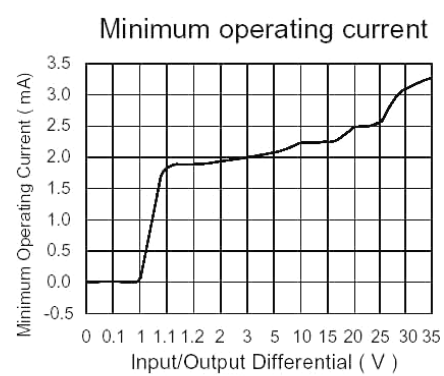
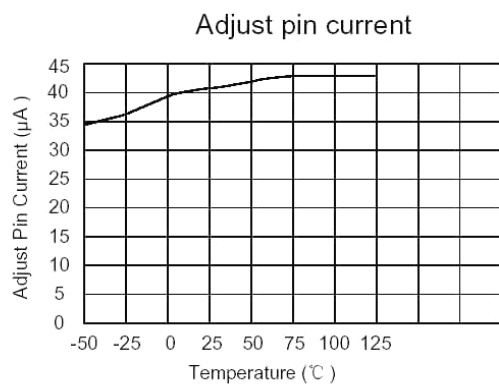
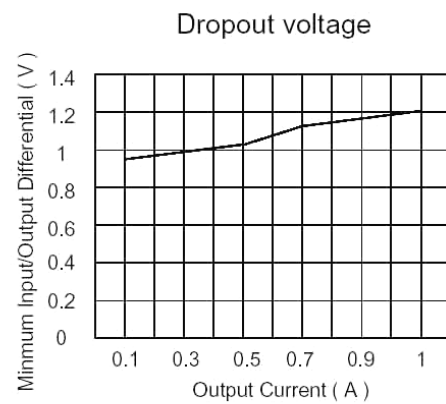
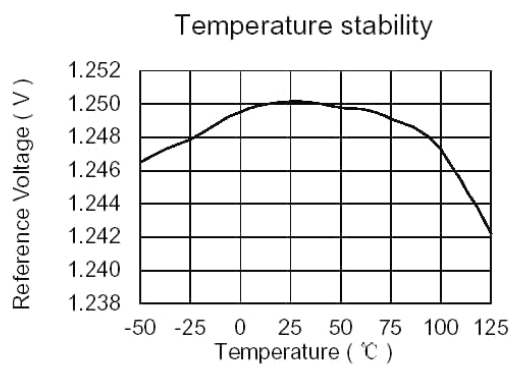
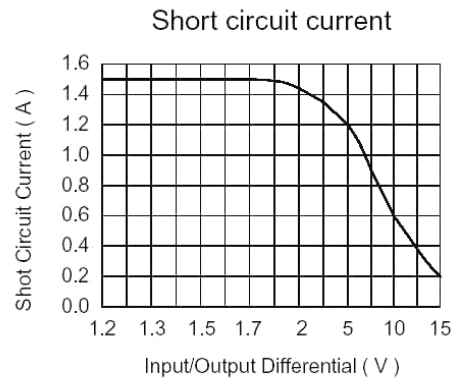
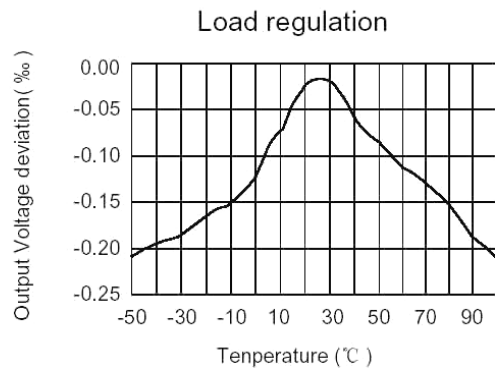
电性能参数 / Electrical Characteristics($T_j = -25$ to 125°C)

参数 Parameter	符号 Symbol	型号 Type	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Line Regulation	ΔV_o	LD1117SG-Adj	$I_o=10mA$ $1.5V\leq(V_{in}-V_o)\leq13.75V$			23	mV
		LD1117SG-1.2	$3V\leq V_{in}\leq8.0V$ $I_o=0mA$			18	mV
		LD1117SG-1.8	$I_o=0mA$ $3.3V\leq V_{in}\leq8.0V$			31	mV
		LD1117SG-2.5	$I_o=0mA$ $3.9V\leq V_{in}\leq10V$			40	mV
		LD1117SG-3.3	$I_o=0mA$ $4.75V\leq V_{in}\leq15V$			48	mV
		LD1117SG-5.0	$6.5V\leq V_{in}\leq15V$ $I_o=0mA$			55	mV
Operating Input Voltage	V_{in}	LD1117SG-Adj				15	V
		LD1117SG-1.2	$I_o=100mA$			10	
		LD1117SG-1.8				10	
		LD1117SG-2.5				15	
		LD1117SG-3.3				15	
		LD1117SG-5.0				15	
Adjustment Pin Current	I_{adj}	LD1117SG-Adj	$V_{in}\leq15V$		60	120	uA
Adjustment Pin Current Change	ΔI_{adj}		$1.4V\leq V_{in}-V_o\leq10V$ $0mA\leq I_o\leq1000mA$		1	5	
Quiescent Current	I_d	LD1117SG-1.2	$V_{in}\leq8V$		5	10	mA
		LD1117SG-1.8	$V_{in}\leq8V$				
		LD1117SG-2.5	$V_{in}\leq10V$				
		LD1117SG-3.3	$V_{in}\leq15V$				
		LD1117SG-5.0					
Output Current	I_o	LD1117SG-Adj	$V_{in}-V_o=5V$ $T_j=25^{\circ}C$	800	950	1300	mA
		LD1117SG-1.2					
		LD1117SG-1.8					
		LD1117SG-2.5					
		LD1117SG-3.3					
		LD1117SG-5.0					
Output Noise	e_N	LD1117SG-Adj	$10Hz\leq B\leq10KHz$ $T_j=25^{\circ}C$		0.003		%
		LD1117SG-1.2			100		uV
		LD1117SG-1.8					
		LD1117SG-2.5					
		LD1117SG-3.3					
		LD1117SG-5.0					

电性能参数 / Electrical Characteristics(T_j= -25 to 125°C)

参数 Parameter	符号 Symbol	型号 Type	测试条件 Test Conditions	最小值 Min	典型 值 Typ	最大 值 Max	单位 Unit
Supply Voltage Rejection	SVR	LD1117SG-Adj	I _o =40mA f=120Hz T _j =25°C V _{in} -V _o =3V V _{ripple} =1V _{pp}	60	75		dB
		LD1117SG-1.2					
		LD1117SG-1.8					
		LD1117SG-2.5					
		LD1117SG-3.3					
		LD1117SG-5.0					
Dropout Voltage	V _d	LD1117SG-Adj	I _o =100mA I _o =500mA I _o =800mA I _o =1000mA		1.00 1.05 1.10 1.15	1.10 1.15 1.20 1.25	V
		LD1117SG-1.2					
		LD1117SG-1.8					
		LD1117SG-2.5					
		LD1117SG-3.3					
		LD1117SG-5.0					
Thermal Regulation		LD1117SG-Adj	T _a =25°C 30ms Pulse		0.01	0.1	%W
		LD1117SG-1.2					
		LD1117SG-1.8					
		LD1117SG-2.5					
		LD1117SG-3.3					
		LD1117SG-5.0					

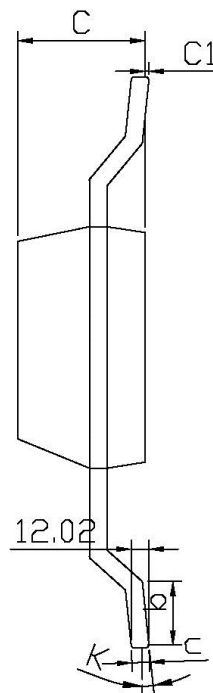
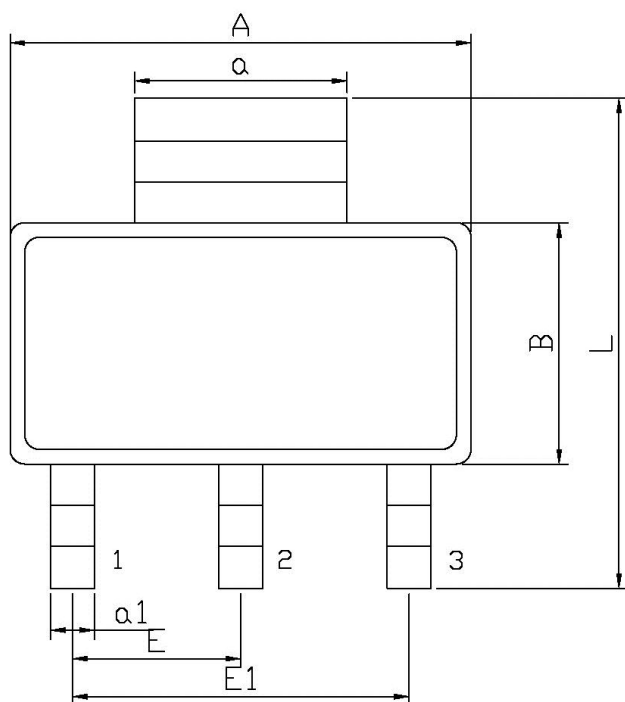
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

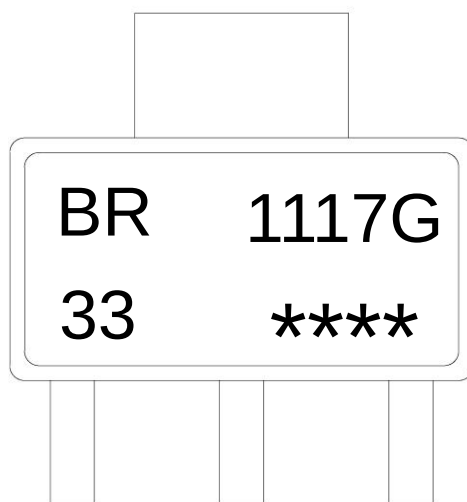
SOT-223

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	6.30	6.70	C	—	1.80
a	2.90	3.10	b	0.91	—
B	3.30	3.70	c	0.24	0.32
L	6.70	7.30	C1	0.02	0.10
a1	0.60	0.80	K	0°	10°
E1	4.10	5.10			
E	2.00	2.60			

印章说明 / Marking Instructions



说明：

BR： 为公司代码

1117： 为型号代码

G： 为无卤产品

33： 代表 3.3V

****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code.

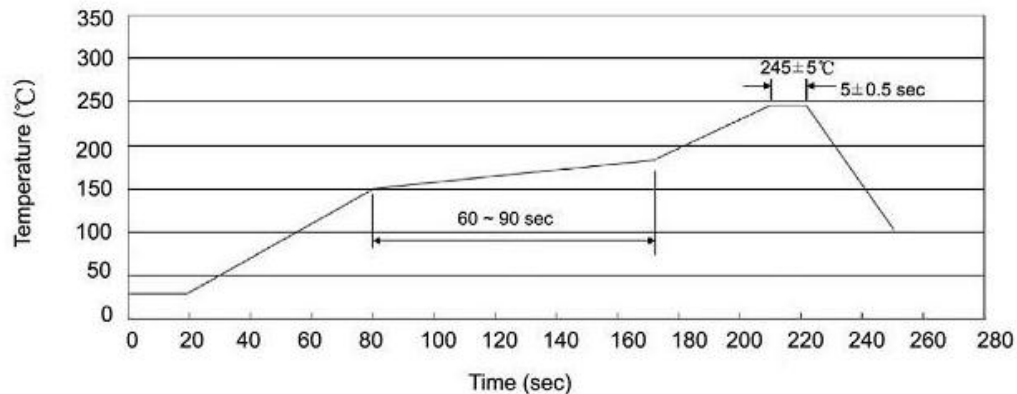
1117 Product Type.

G: Halogen Free Product

33: Deputy 3.3V

****: Lot No. Code, code change with Lot No.

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-223	2,500	2	5000	6	30,000	13" ×12	360×360×50	380×335×366

使用说明 / Notices