

描述 / Descriptions

SOT-89 塑封封装电压调整器。Voltage Regulator in a SOT-89 Plastic Package.

特征 / Features

高效率、低压差,输出电流达到 800mA,内设过流、过热保护。无卤产品。

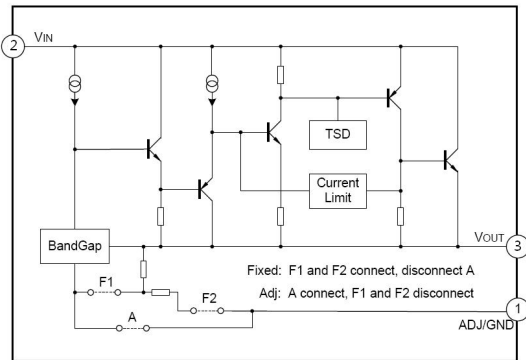
High efficiency, Low dropout voltage.output current up to 800mA, internal current and thermal limit. HF Product.

用途 / Applications

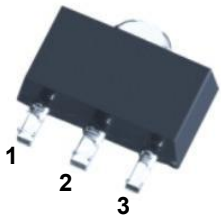
电压调整器。

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 Pin2 : VOUT Pin3 : VIN

印章代码 / 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
Input voltage	V _I	15	V
Storage temperature range	T _{stg}	-40~150	°C

电性能参数 / Electrical Characteristics(Ta=25°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}	LD1117T- Adj	V _{in} -V _o =2V T _j =25°C I _o =10mA	1.225	1.25	1.275	V		
			10mA≤I _o ≤800mA 1.4V≤(V _{in} -V _o)≤10V	1.225	1.25	1.275			
Output Voltage	V _o	LD1117T-1.2	V _{in} =3.2V T _j =25°C I _o =10mA	1.176	1.2	1.224	V		
			10mA≤I _o ≤800mA, 3V≤V _{in} ≤8V	1.176	1.2	1.224			
		LD1117T-1.8	V _{in} =3.8V T _j =25°C I _o =10mA	1.764	1.8	1.836	V		
			0≤I _o ≤800mA, 3.3V≤V _{in} ≤8V	1.764	1.8	1.836			
		LD1117T-2.5	V _{in} =4.5V T _j =25°C I _o =10mA	2.45	2.5	2.55	V		
			0≤I _o ≤800mA, 3.9V≤V _{in} ≤10V	2.45	2.5	2.55			
		LD1117T-3.3	V _{in} =5.3V T _j =25°C I _o =10mA	3.234	3.3	3.366	V		
			0≤I _o ≤800mA, 4.75V≤V _{in} ≤10V	3.234	3.3	3.366			
		LD1117T-5.0	V _{in} =7V T _j =25°C I _o =10mA	4.9	5	5.1	V		
			0≤I _o ≤800mA, 6.5V≤V _{in} ≤15V	4.9	5	5.1			
		Load Regulation	ΔV _o	LD1117T-Adj	V _{in} -V _o =3V 10mA≤I _o ≤800mA			30	mV
				LD1117T-1.2	V _{in} =3V 10mA≤I _o ≤800mA			30	mV
LD1117T-1.8	V _{in} =3.3V 0mA≤I _o ≤800mA					30	mV		
LD1117T-2.5	V _{in} =3.9V 0mA≤I _o ≤800mA					30	mV		
LD1117T-3.3	V _{in} =4.75V 0mA≤I _o ≤800mA					30	mV		
LD1117T-5.0	V _{in} =6.5V 0mA≤I _o ≤800mA					30	mV		

电性能参数 / Electrical Characteristics(Ta=25°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	LD1117T-Adj	$I_o=10mA$ $1.5V \leq (V_{in}-V_o) \leq 13.75V$			23	mV
		LD1117T-1.2	$3V \leq V_{in} \leq 8.0V$ $I_o=0mA$			18	mV
		LD1117T-1.8	$3.3V \leq V_{in} \leq 8.0V$ $I_o=0mA$			31	mV
		LD1117T-2.5	$3.9V \leq V_{in} \leq 10V$ $I_o=0mA$			40	mV
		LD1117T-3.3	$4.75V \leq V_{in} \leq 15V$ $I_o=0mA$			48	mV
		LD1117T-5.0	$6.5V \leq V_{in} \leq 15V$ $I_o=0mA$			55	mV
Operating Input Voltage	V_{in}	LD1117T-Adj				15	V
		LD1117T-1.2	$I_o=100mA$			10	
		LD1117T-1.8				10	
		LD1117T-2.5				15	
		LD1117T-3.3				15	
		LD1117T-5.0				15	
Adjustment Pin Current	I_{adj}	LD1117T-Adj		$V_{in} \leq 15V$		60	120
Adjustment Pin Current Change	ΔI_{adj}		$1.4V \leq V_{in}-V_o \leq 10V,$ $0mA \leq I_o \leq 800mA$		1	5	
Quiescent Current	I_d	LD1117T-1.2	$V_{in} \leq 8V$		5	10	mA
		LD1117T-1.8	$V_{in} \leq 8V$				
		LD1117T-2.5	$V_{in} \leq 10V$				
		LD1117T-3.3	$V_{in} \leq 15V$				
		LD1117T-5.0					
Output Current	I_o	LD1117T-Adj	$V_{in}-V_o=5V$ $T_j=25^\circ C$	600	800	1000	mA
		LD1117T-1.2					
		LD1117T-1.8					
		LD1117T-2.5					
		LD1117T-3.3					
		LD1117T-5.0					
Output Noise	eN	LD1117T-Adj	$10Hz \leq B \leq 10KHz$ $T_j=25^\circ C$		0.003		%
		LD1117T-1.2					
		LD1117T-1.8					
		LD1117T-2.5			100		uV
		LD1117T-3.3					
		LD1117T-5.0					

电性能参数 / Electrical Characteristics(Ta=25°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	LD1117T-Adj	Io=40mA f=120Hz, Tj=25°C Vin-Vo=3V, Vripple=1Vpp	60	75		dB
		LD1117T-1.2					
		LD1117T-1.8					
		LD1117T-2.5					
		LD1117T-3.3					
		LD1117T-5.0					
Dropout Voltage	Vd	LD1117T-Adj	Io=100mA Io=500mA Io=800mA		1.00 1.05 1.10	1.10 1.15 1.20	V
		LD1117T-1.2					
		LD1117T-1.8					
		LD1117T-2.5					
		LD1117T-3.3					
		LD1117T-5.0					
Thermal Regulation		LD1117T-Adj	Ta=25°C 30ms Pulse		0.01	0.1	%W
		LD1117T-1.2					
		LD1117T-1.8					
		LD1117T-2.5					
		LD1117T-3.3					
		LD1117T-5.0					

典型应用电路 / Typical Application Circuit

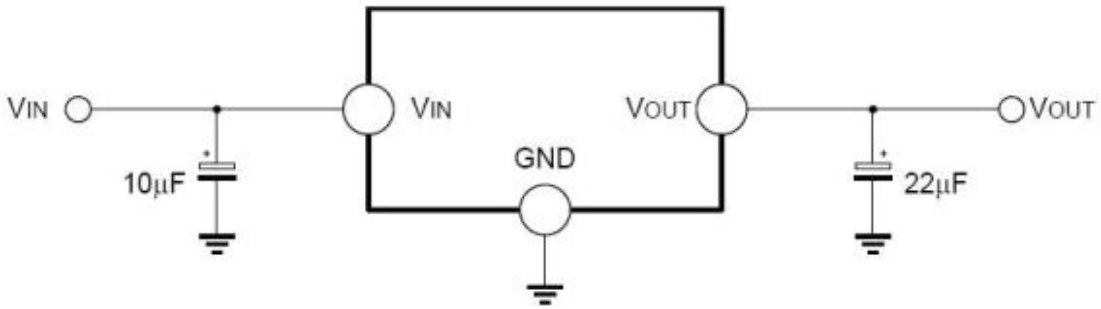


图 1.典型固定输出电压

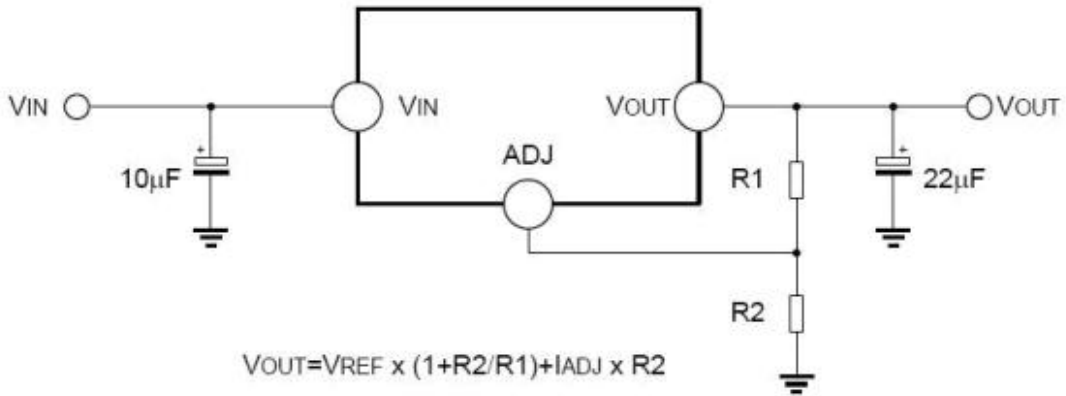
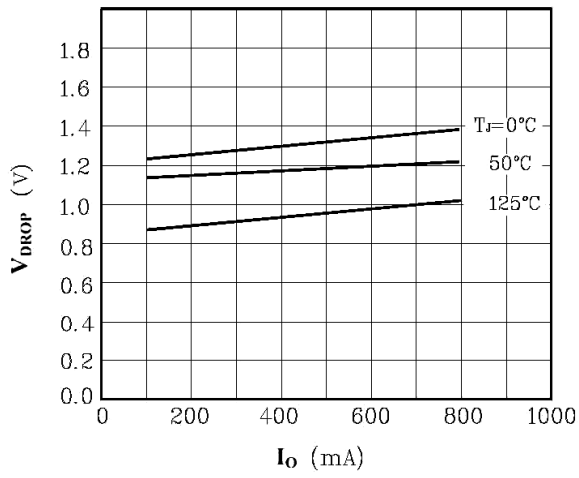


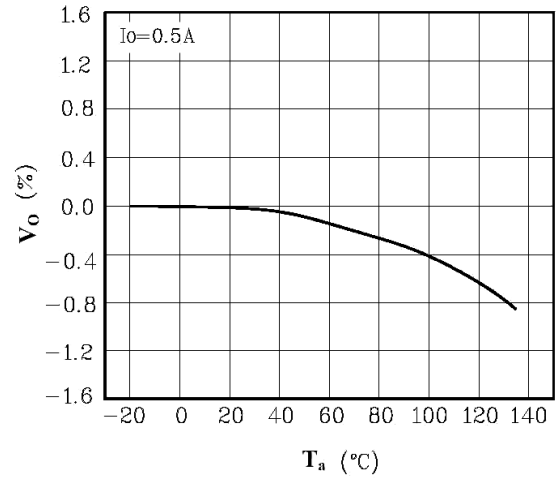
图 2. 典型可调输出电压

电参数曲线图 / Electrical Characteristic Curve

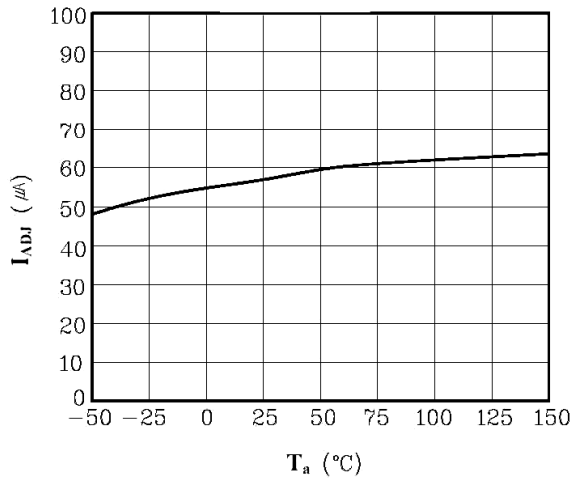
$V_{DROP} - I_O$



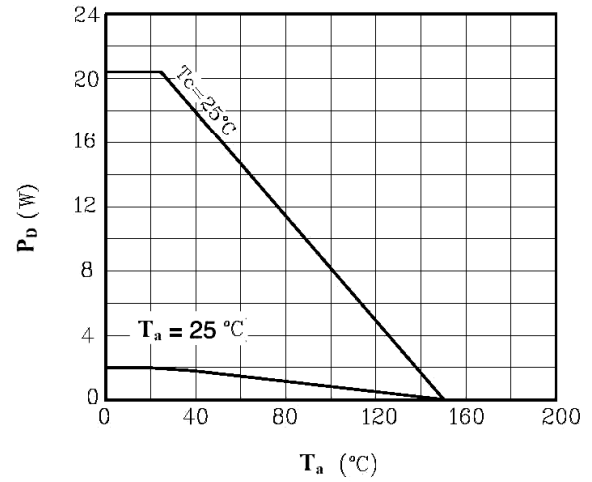
$V_O - T_a$



$I_{ADJ} - T_a$



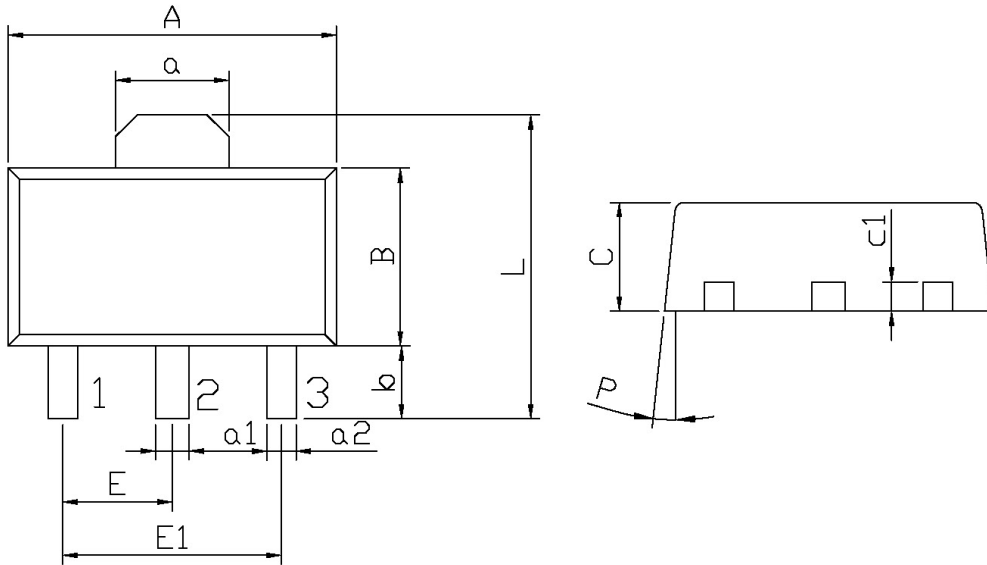
$P_D - T_a$



外形尺寸图 / Package Dimensions

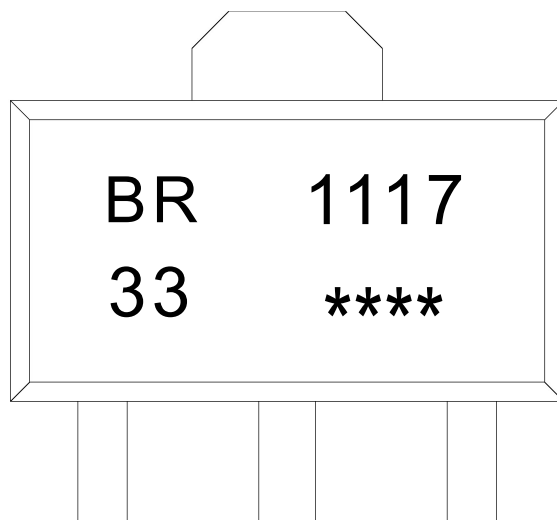
SOT-89

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.878	4.478	C	1.40	1.70
a	1.45	1.65	c1	0.35	0.50
E	1.40	1.60	P	6°	
E1	2.80	3.20			
b	0.80	1.20			

印章说明 / Marking Instructions



说明：

BR： 为公司代码

1117： 为产品型号

33： 代表 3.3V

****： 为生产批号代码，随生产批号变化。

Note:

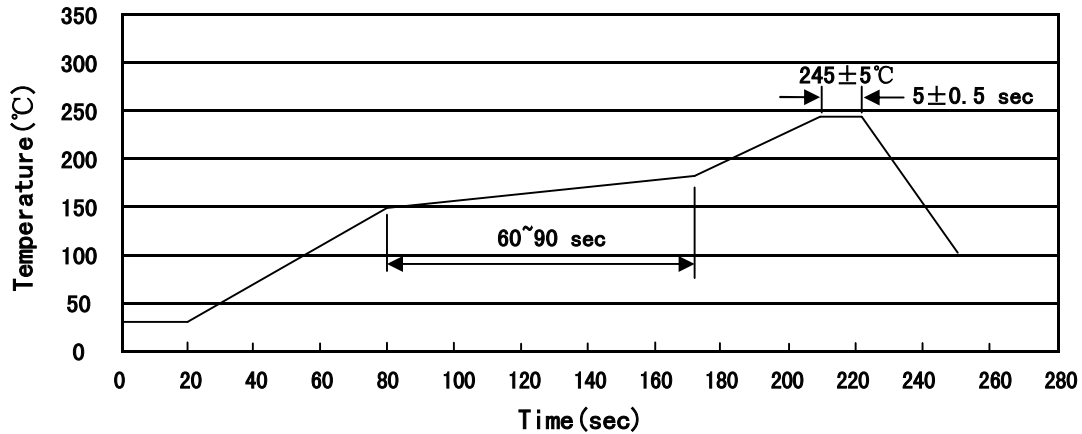
BR: Company Code.

1117: Product Type.

33: On Behalf 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-89	1,000	7	7,000	6	42,000	7" ×12	180×120×180	390×385×205

使用说明 / Notices