

SOT-223 Three Terminal Regulator 三端稳压 IC

■Features 特点

Low Dropout Voltage 低落差电压

1.Vss/Adj 2.Vo 3.Vi

■Application 应用

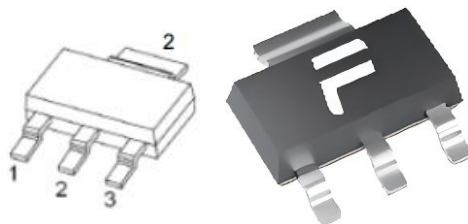
PC Motherboard 主板

LCD Monitor 液晶屏

Graphic Card 显卡

Modem 调制解调器

Printer 打印机



■Absolute Maximum Ratings 最大额定值

($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Input Voltage 输入电压	V_i	15	V
Operating Current 工作电流	I_o	1000	mA
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	250	$^{\circ}\text{C}/\text{W}$
Solder Temperature 焊接温度	T_d	260	$^{\circ}\text{C}$
Solder Time 焊接时间	T_d	10	S
Operating Ambient Temperature 工作温度	T_A	+85	$^{\circ}\text{C}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-40to+125 $^{\circ}\text{C}$	

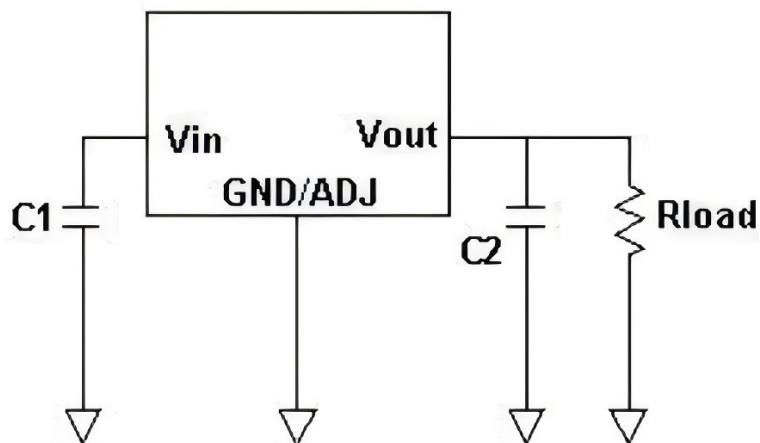
■Electrical Characteristics 电特性

 ($V_{IN} \leq 10V$ $T_J = 25^\circ C$ unless otherwise noted 如无特殊说明)

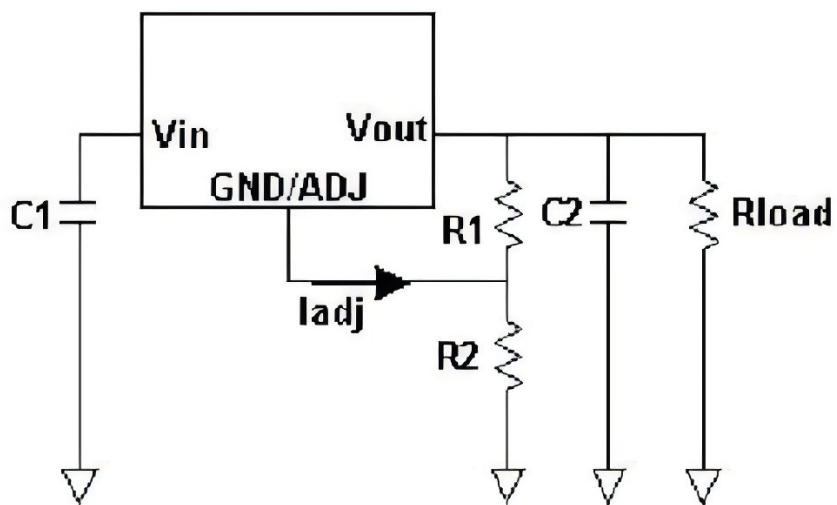
Characteristic 特性参数	Symbol 符号	Part No. 料号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Reference Voltage 基准电压	V_{RO}	1117-Adj	$I_O = 10mA$ $V_I - V_O = 2V$	1.231	1.250	1.269	V
			$10mA \leq I_O \leq 1A$ $1.4V \leq V_I - V_O \leq 12V$	1.225	1.250	1.275	
Output Voltage 输出电压	V_O	1117-1.8	$I_O = 10mA$ $V_I = 3.8V$	1.773	1.8	1.827	V
			$10mA \leq I_O \leq 1A$ $3.2V \leq V_I \leq 12V$	1.764	1.8	1.836	
		1117-2.5	$I_O = 10mA$ $V_I = 4.5V$	2.463	2.5	2.538	
			$10mA \leq I_O \leq 1A$ $4V \leq V_I \leq 12V$	2.450	2.5	2.550	
		1117-3.3	$I_O = 10mA$ $V_I = 5V$	3.251	3.3	3.350	
			$10mA \leq I_O \leq 1A$ $5V \leq V_I \leq 12V$	3.234	3.3	3.366	
		1117-5.0	$I_O = 10mA$ $V_I = 7V$	4.925	5.0	5.075	
			$10mA \leq I_O \leq 1A$ $7V \leq V_I \leq 12V$	4.9	5.0	5.1	
Line Regulation 线性调整率	LNR	1117-Adj	$I_O = 10mA$ $1.5V \leq V_I - V_O \leq 12V$		0.03	0.2	%
		1117-1.8	$I_O = 10mA$ $1.5V \leq V_I - V_O \leq 10.2V$		1	7	
		1117-2.5	$I_O = 10mA$ $1.5V \leq V_I - V_O \leq 9.5V$		1	7	
		1117-3.3	$I_O = 10mA$ $1.5V \leq V_I - V_O \leq 8.7V$		1	7	
		1117-5.0	$I_O = 10mA$ $1.5V \leq V_I - V_O \leq 7V$		1	10	
Load Regulation 负载调整率	LDR	1117-Adj	$10mA \leq I_O \leq 1A$ $V_I - V_O = 1.5V$		0.2	0.4	%
		1117-1.8				7.2	
		1117-2.5				10	
		1117-3.3				13.2	
		1117-5.0				20	
Dropout Voltage	V_D	落差电压	$\Delta V_R = 1\%$ $I_O = 1A$		1.1	1.3	V
Adjust Pin Current	I_{adj}	电流调整	$I_O = 10mA$			120	μA
Adjust Current Change	ΔI_{adj}	电流调整率	$1.5 \leq V_I - V_O \leq 12$ $I_O = 10mA$			5	μA
Min Load Current	I_L	负载电流	$V_I = 5V$ $V_{adj} = 0V$			7	mA
Quiescent Current	I_q	静态电流	$V_I = V_O + 1.25$		2	5	mA
Temperature Stability 温度稳定性					0.5		%
Long Term Stability 长期稳定性			$T_A = 125^\circ C$ 1000hrs		0.3		%
RMS Output Noise(% of Vout)输出噪声			$T_A = 125^\circ C$		0.003		%
Thermal Shutdown Hysteresis 热特性					25		$^\circ C$

■Application 应用

固定输出电压:

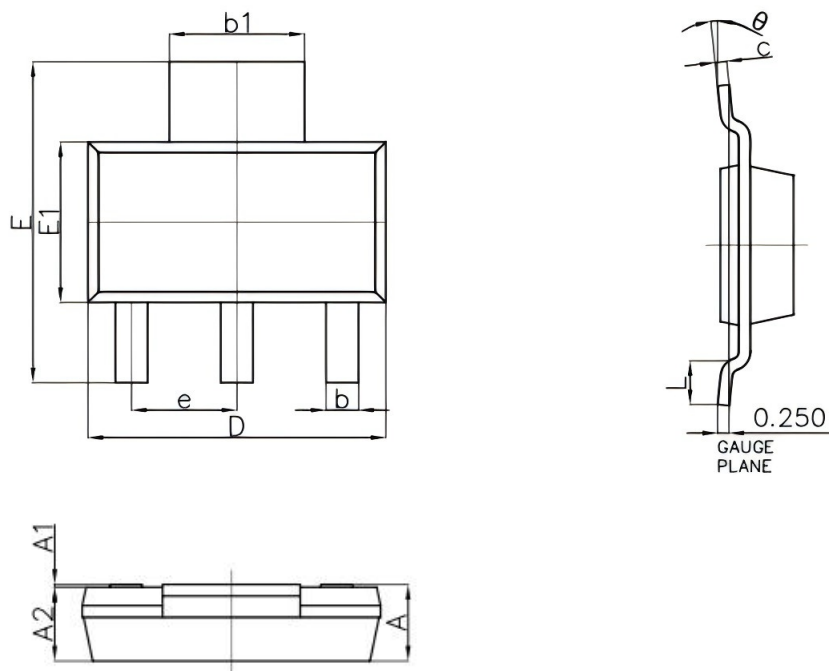


可调输出电压:



可调电压型提供 1.25V 的基准电压，任何在 1.25 至 13.8V 之间的输出电压可以通过选择两个外接电阻来获得，R1、R2 两个外接电阻连接方法如上。R1 的阻值一般在 200 Ω 到 350 Ω 之间。

■ SOT-223 Dimension 外形封装尺寸



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°