

SOT-89 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**

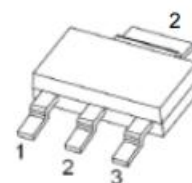
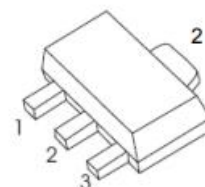
PC Motherboard 主板

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)

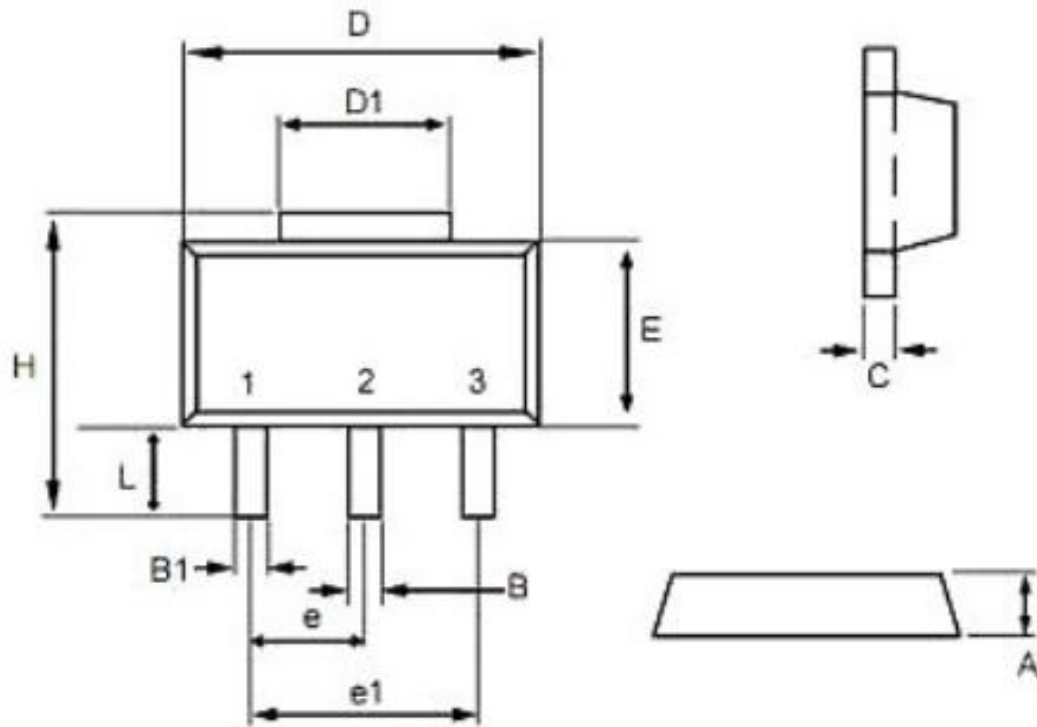
| Characteristic 特性参数 | Symbol 符号 | Rat 额定值 | Unit 单位 |
|---|-----------------|------------------------------|-----------------------------|
| Input Voltage 输入电压 | V_i | 15 | V |
| Operating Current 工作电流 | I_o | 1000 | mA |
| Thermal Resistance Junction-Ambient 热阻 | $R_{\theta JA}$ | 250 | $^{\circ}\text{C}/\text{W}$ |
| 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)

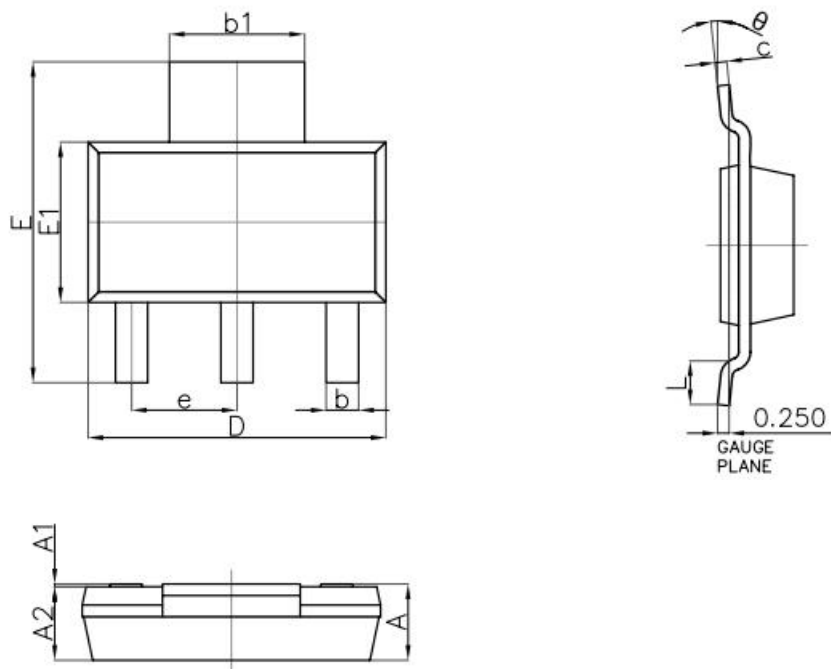
| Characteristic 特性参数 | Symbol 符号 | Part No. 料号 | Test Condition 测试条件 | Min 最小值 | Type 典型值 | Max 最大值 | Unit 单位 |
|---------------------------------------|------------------|----------------|---|------------|-------------|------------|------------|
| Reference Voltage 基准电压 | V_{RO} | 1117-Adj | $I_O = 10mA$ $V_I - V_O = 3.23$ | 1.231 | 1.250 | 1.269 | V |
| | | | $10mA \leq I_O \leq 0.8A$ $2.75 \leq V_I - V_O \leq 3.25$ | 1.225 | 1.250 | 1.275 | |
| Output Voltage 输出电压 | V_O | 1117-1.8 | $I_O = 10mA$ $V_I = 3.8$ | 1.773 | 1.8 | 1.827 | V |
| | | | $10mA \leq I_O \leq 0.8A$ $3.3 \leq V_I \leq 12$ | 1.764 | 1.8 | 1.836 | |
| | | 1117-2.5 | $I_O = 10mA$ $V_I = 4.5$ | 2.463 | 2.5 | 2.538 | |
| | | | $10mA \leq I_O \leq 0.8A$ $4 \leq V_I \leq 12$ | 2.450 | 2.5 | 2.550 | |
| | | 1117-3.3 | $I_O = 10mA$ $V_I = 5.3$ | 3.251 | 3.3 | 3.350 | |
| | | | $10mA \leq I_O \leq 0.8A$ $4.8 \leq V_I \leq 12$ | 3.234 | 3.3 | 3.366 | |
| | | 1117-5.0 | $I_O = 10mA$ $V_I = 7$ | 4.925 | 5.0 | 5.075 | |
| | | | $10mA \leq I_O \leq 0.8A$ $6.5 \leq V_I \leq 12$ | 4.9 | 5.0 | 5.1 | |
| Line Regulation 线性调整率 | LNR | 1117-Adj | $I_O = 10mA$ $1.5 \leq V_I - V_O \leq 12$ | | 0.03 | 0.2 | % |
| | | 1117-1.8 | $I_O = 10mA$ $1.5 \leq V_I - V_O \leq 10.2$ | | 1 | 7 | mV |
| | | 1117-2.5 | $I_O = 10mA$ $1.5 \leq V_I - V_O \leq 9.5$ | | 1 | 7 | |
| | | 1117-3.3 | $I_O = 10mA$ $1.5 \leq V_I - V_O \leq 8.7$ | | 1 | 7 | |
| | | 1117-5.0 | $I_O = 10mA$ $1.5 \leq V_I - V_O \leq 7$ | | 1 | 10 | |
| Load Regulation 负载调整率 | LDR | 1117-Adj | $10mA \leq I_O \leq 0.8A$ $V_I - V_O = 1.5$ | | 0.2 | 0.4 | % |
| | | 1117-1.8 | | | | 7.2 | mV |
| | | 1117-2.5 | | | | 10 | |
| | | 1117-3.3 | | | | 13.2 | |
| | | 1117-5.0 | | | | 20 | |
| Dropout Voltage | V_D | 落差电压 | $\Delta V_R = 1\%$ $I_O = 0.8A$ | | 1.2 | 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 V_{out})输出噪声 | | | $T_A = 125^\circ C$ | | 0.003 | | % |
| Thermal Shutdown Hysteresis 热特性 | | | | | 25 | | $^\circ C$ |

■SOT-89 Dimension 外形封装尺寸



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.40 | 1.60 | 0.055 | 0.063 |
| B | 0.40 | 0.56 | 0.016 | 0.022 |
| B1 | 0.35 | 0.48 | 0.014 | 0.019 |
| C | 0.35 | 0.44 | 0.014 | 0.017 |
| D | 4.40 | 4.60 | 0.173 | 0.181 |
| D1 | 1.35 | 1.83 | 0.053 | 0.072 |
| e | 1.45 | 1.55 | 0.057 | 0.061 |
| e1 | 2.95 | 3.05 | 0.116 | 0.120 |
| E | 2.29 | 2.60 | 0.090 | 0.102 |
| H | 3.75 | 4.25 | 0.148 | 0.167 |
| L | 0.80 | 1.20 | 0.031 | 0.047 |

■ 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 |
| b_1 | 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 |
| E_1 | 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° |