

SOT-89 Three Terminal Regulator 三端稳压 IC
■ Features 特点

Pin 脚位: 1.Output 输出 2.Ground 地 3.Input 输入

Output Voltage 输出电压: 3.3V

Output Current 输出电流: 0.15A

Power dissipation 耗散功率: 0.5W

Thermal overload protection 过热保护

Short circuit current limiting 短路电流极限


■ 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 | 30 | V |
| Operating Current 工作电流 | I_o | 150 | mA |
| Power dissipation 耗散功率 | P_D | 500 | mW |
| 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 Temperature/Time 焊接时间 | T_d | 10 | S |
| Operating Ambient Temperature 工作温度 | T_A | -40~+125 | $^{\circ}\text{C}$ |
| Junction Temperature 结温 | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature 储藏温度 | T_{stg} | -55to+150 $^{\circ}\text{C}$ | |

■ Electrical Characteristics 电特性

 ($V_I=8.3V$ $I_O=80mA$ $C_i=0.33\mu F$ $C_o=0.1\mu F$ $T_A=25^\circ C$ unless otherwise noted 如无特殊说明)

| Characteristic 特性参数 | Symbol 符号 | Test Condition 测试条件 | Min 最小值 | Type 典型值 | Max 最大值 | Unit 单位 |
|------------------------------------|--------------|------------------------------------------------------|------------|-------------|------------|------------|
| Output Voltage 输出电压 | V_O | $V_I=8.3V$ $I_O=80mA$ | 3.168 | 3.3 | 3.432 | V |
| Output Voltage 输出电压 | V_O | $5.3V \leq V_I \leq 20V$ $1mA \leq I_O \leq 80mA$ | 3.135 | | 3.465 | V |
| Output Voltage 输出电压 | V_O | $V_I=8.3V$ $1mA \leq I_O \leq 140mA$ | 3.135 | | 3.465 | V |
| Output Current 输出电流 | I_O | $V_I=8.3V$ | | 150 | | mA |
| Dropout Voltage 落差电压 | V_D | $I_O=80mA$ | | 1.7 | | V |
| Quiescent Current 静态电流 | I_q | $V_I=10V$ $I_O=0$ | | 2 | 5.5 | mA |
| Quiescent Current Change 静态电流变化 | ΔI_q | $6.3V \leq V_I \leq 20V$ | | | 1.5 | mA |
| Quiescent Current Change 静态电流变化 | ΔI_q | $1mA \leq I_O \leq 80mA$ | | | 0.1 | mA |
| Line Regulation 线性调整 | ΔV_O | $I_O=80mA$ $5.3V \leq V_I \leq 20V$ | | 7 | 150 | mV |
| Line Regulation 线性调整 | ΔV_O | $I_O=80mA$ $6.3V \leq V_I \leq 20V$ | | 4 | 100 | mV |
| Load Regulation 负载调整 | ΔV_O | $1mA \leq I_O \leq 200mA$ $V_I=10V$ | | 10 | 60 | mV |
| Load Regulation 负载调整 | ΔV_O | $1mA \leq I_O \leq 80mA$ $V_I=10V$ | | 7 | 30 | mV |
| Output Noise Voltage 噪声电压 | V_N | $10Hz \leq f \leq 100kHz$ | | 40 | | μV |
| Ripple Rejection 纹波抑制 | RR | $6.3V \leq V_I \leq 16.3V$ $f=120Hz$ | 40 | 49 | | dB |

■ Typical Characteristic Curve 典型特性曲线

Fig.1 78L33 Output Voltage vs Ambient Temperature

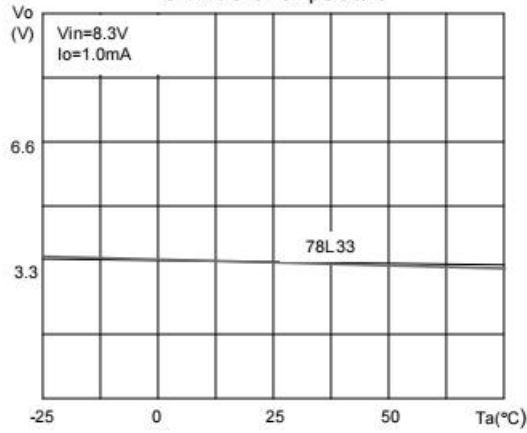


Fig.2 78L33 Quiescent Current vs Output Current

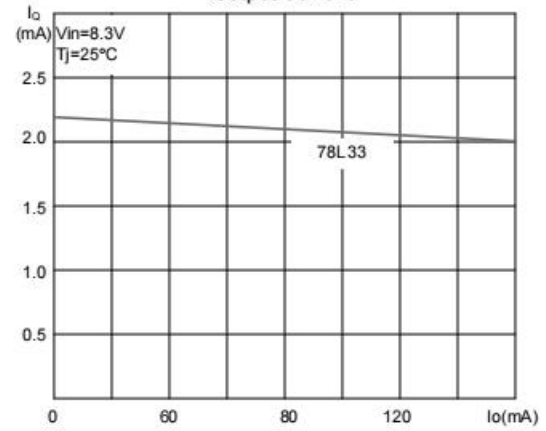


Fig.3 78L33 Quiescent Current vs Input

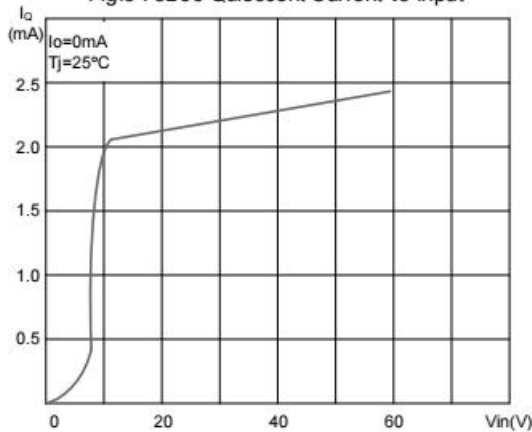


Fig.4 78L33 Thermal Shutdown

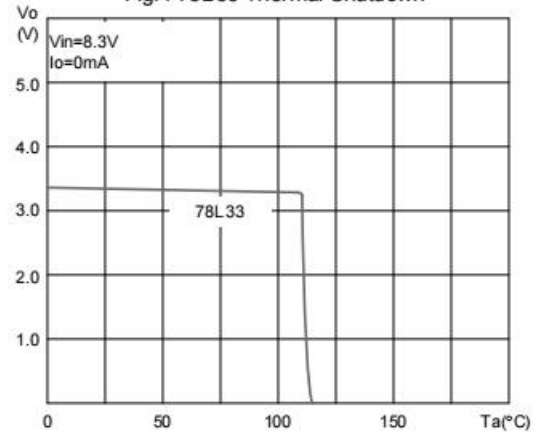


Fig.5 78L33 Output Characteristics

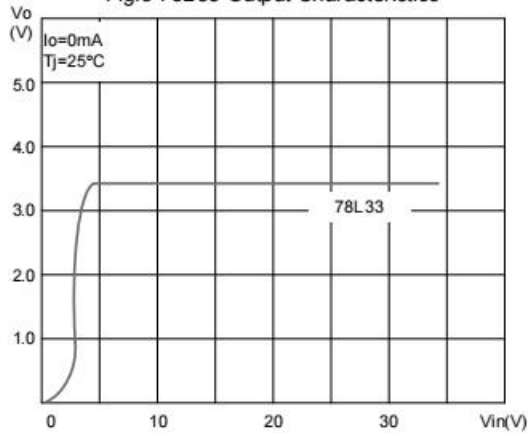
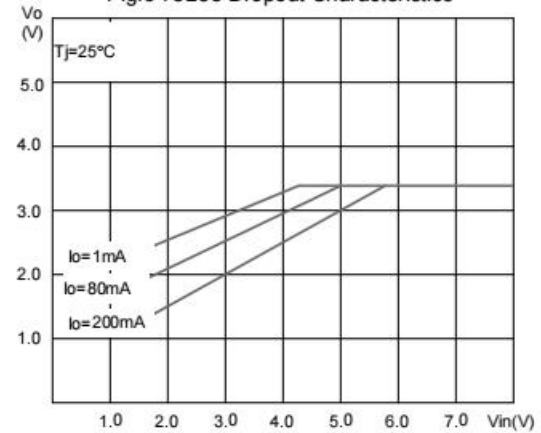
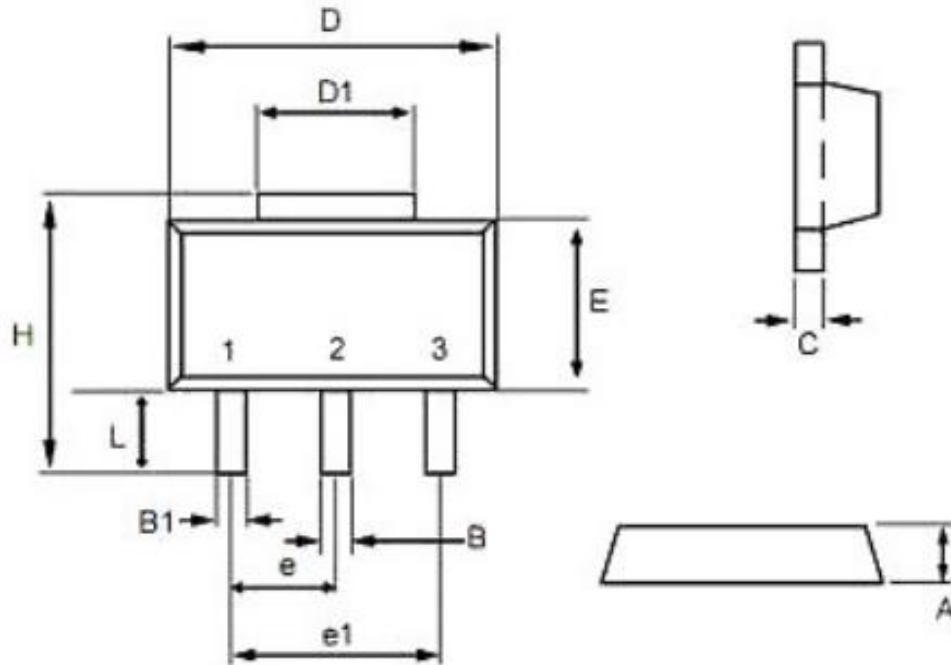


Fig.6 78L33 Dropout Characteristics



■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 |