

# **SOT-23(-3L)SOT-89-3L LDO High Input Voltage Three Terminal Regulator** **低落差高电压三端稳压 IC**

## ■Features 特点

1.GND 2.Vi 3.Vo

**Low Dropout Voltage** 低落差电压: Type 典型值 0.1V

**Low Quiescent Current** 低静态电流: < 3μA

**High Input Voltage** 高输入电压: Up to 高达 24V

**High Precision Output Voltage** 高精度输出电压: ±2%  
具过温保护、过流和短路保护功能

## ■Application 应用

**Battery Power Supply Equipment** 电池供电设备

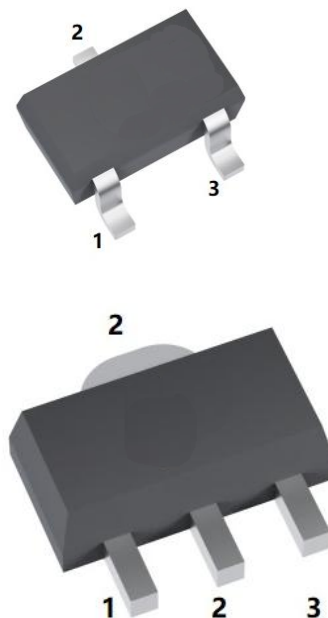
**Communication Equipment** 通信设备

**Audio/Video Equipment** 音视频设备

**Monitor Equipment** 监控设备

## ■Absolute Maximum Ratings 最大额定值

(TA=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)



| Characteristic 特性参数                      | Symbol 符号       | Rat 额定值    | Unit 单位 |
|------------------------------------------|-----------------|------------|---------|
| Input Voltage 输入电压/最高耐压                  | $V_i$           | 24         | V       |
| Operating Current 工作电流                   | $I_o$           | 100        | mA      |
| Power dissipation 耗散功率                   | $P_D$           | 400        | mW      |
| Thermal Resistance Junction-Ambient 热阻   | $R_{\theta JA}$ | 306        | ℃/W     |
| Solder Temperature/Time 焊接温度/时间          | $T_d$           | 260/10     | ℃/S     |
| Operating Ambient Temperature 工作温度       | $T_A$           | -25~+70    | ℃       |
| Junction and Storage Temperature 结温和储藏温度 | $T_J, T_{stg}$  | -50to+125℃ |         |

# ■Electrical Characteristics 电特性

YT7528-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                       | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=4.8\text{V}$                                                       | 2.744      | 2.8         | 2.856      | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=4.8\text{V}$                                                                            | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                             |            | 30          | 100        | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                      |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$3.8 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=4.8\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=4.8\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

YT7530-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                     | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=5\text{V}$                                                       | 2.94       | 3           | 3.06       | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=5.5\text{V}$                                                                          | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                           |            | 30          | 100        | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                    |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$4 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=5\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=5\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

# ■Electrical Characteristics 电特性

YT7533-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                       | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=5.3\text{V}$                                                       | 3.234      | 3.3         | 3.366      | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=5.3\text{V}$                                                                            | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                             |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                      |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$4.3 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=5.3\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=5.3\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

YT7536-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                       | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=5.6\text{V}$                                                       | 3.528      | 3.6         | 3.672      | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=5.6\text{V}$                                                                            | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                             |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                      |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$4.6 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=5.6\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=5.6\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

# ■Electrical Characteristics 电特性

YT7540-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                     | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=6\text{V}$                                                       | 3.92       | 4           | 4.08       | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=6\text{V}$                                                                            | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                           |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                    |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$5 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=6\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=6\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

YT7544-2 (  $T_{opt}=25^{\circ}\text{C}$  )

| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                       | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=6.4\text{V}$                                                       | 4.312      | 4.4         | 4.488      | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=6.4\text{V}$                                                                            | 70         | 100         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                             |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                      |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$5.4 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 50\text{mA}$<br>$V_I=6.4\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=6.4\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

# ■Electrical Characteristics 电特性

YT7550-2 (  $T_{opt}=25^{\circ}\text{C}$  )

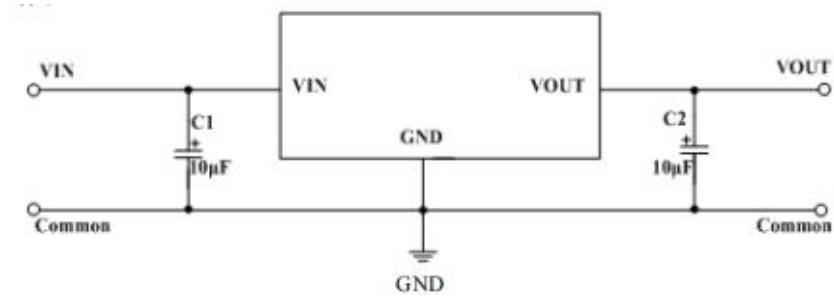
| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                     | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|--------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=7\text{V}$                                                       | 4.9        | 5           | 5.1        | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=7\text{V}$                                                                            | 100        | 150         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                           |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                    |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$6 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 70\text{mA}$<br>$V_I=7\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=7\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |

YT7590-2 (  $T_{opt}=25^{\circ}\text{C}$  )

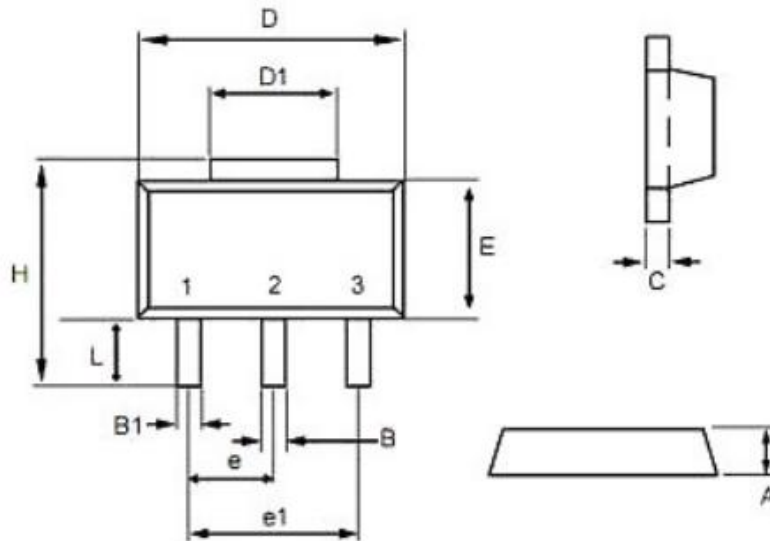
| Characteristic<br>特性参数     | Symbol<br>符号                      | Test Condition<br>测试条件                                                                      | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位              |
|----------------------------|-----------------------------------|---------------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------|
| Output Voltage<br>输出电压     | $V_O$                             | $I_O=10\text{mA}$<br>$V_I=11\text{V}$                                                       | 8.82       | 9           | 9.18       | V                       |
| Output Current<br>输出电流     | $I_O$                             | $V_I=11\text{V}$                                                                            | 100        | 150         |            | mA                      |
| Dropout Voltage<br>落差电压    | $V_D$                             | $I_O=1\text{mA}$                                                                            |            | 25          | 55         | mV                      |
| Quiescent Current<br>静态电流  | $I_q$                             | $I_O=0$                                                                                     |            | 1.5         | 3          | $\mu\text{A}$           |
| Line Regulation<br>线性调整    | $\Delta V_O/\Delta V_I \cdot V_O$ | $I_O=1\text{mA}$<br>$10 \leq V_I \leq 24$                                                   |            |             | 0.2        | %/V                     |
| Load Regulation<br>负载调整    | $\Delta V_O$                      | $1\text{mA} \leq I_O \leq 70\text{mA}$<br>$V_I=11\text{V}$                                  |            | 25          | 60         | mV                      |
| Temperature Finger<br>温度系数 | $\Delta V_O/\Delta T_a \cdot V_O$ | $I_O=10\text{mA}, V_I=11\text{V}$<br>$-40^{\circ}\text{C} \leq T_a \leq 85^{\circ}\text{C}$ |            | 100         |            | PPM/ $^{\circ}\text{C}$ |



■ Application Circuit 应用电路

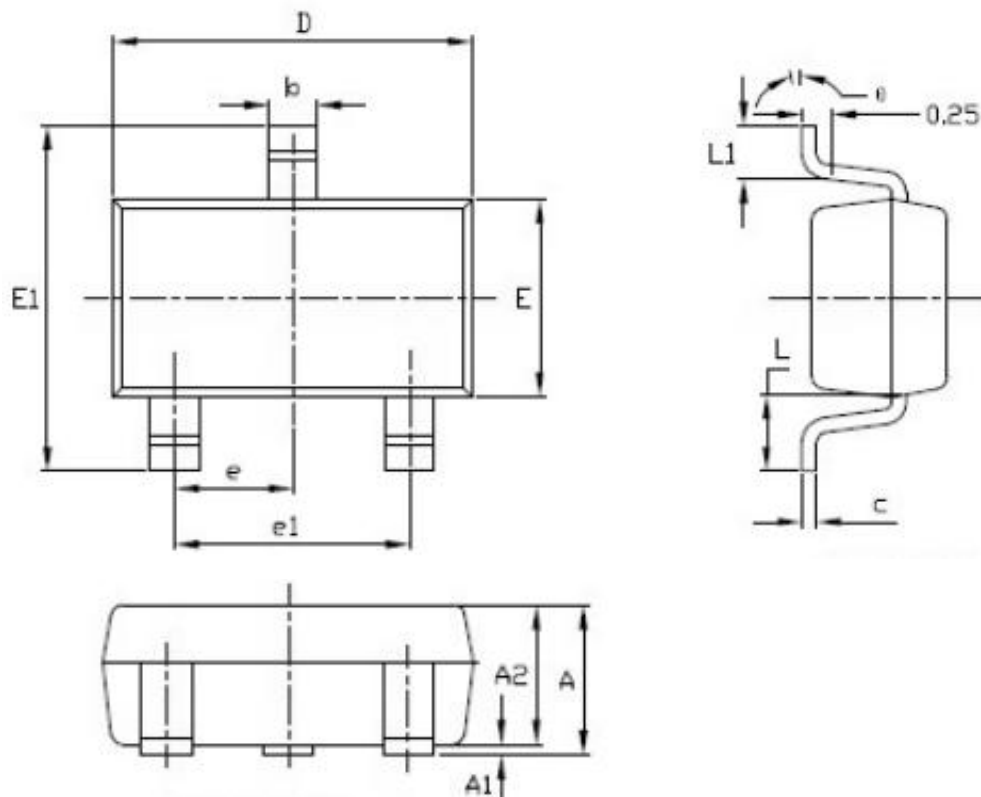


■ SOT-89-3L Dimension 外形封装尺寸



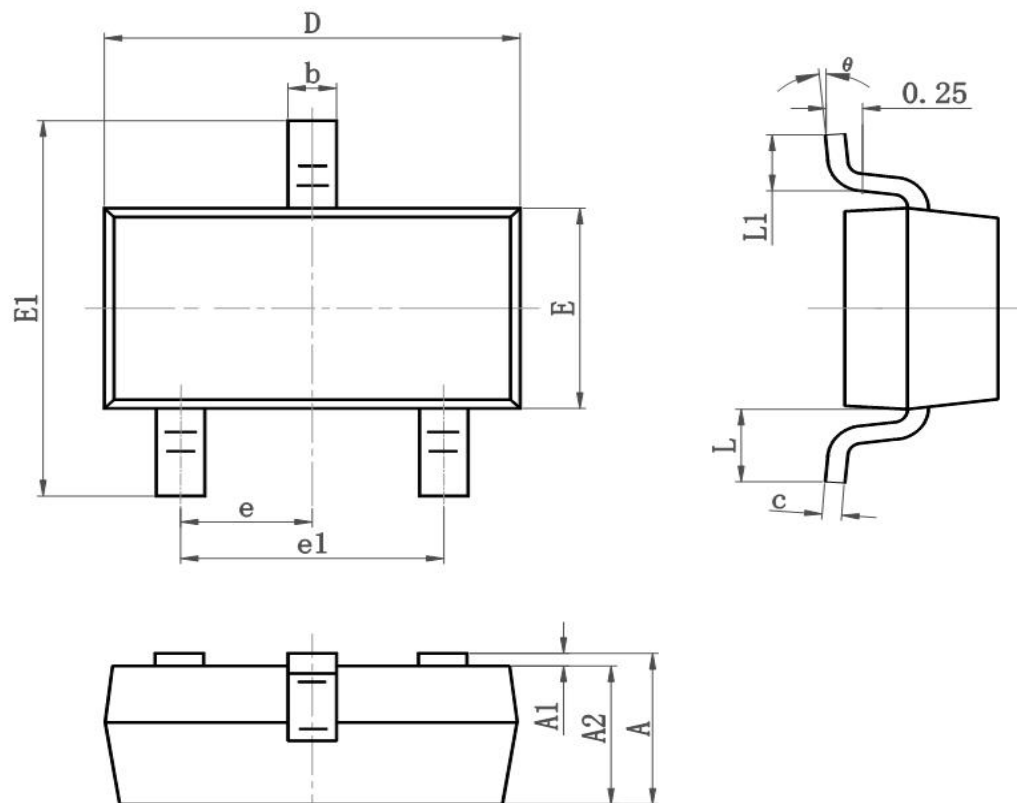
| Symbol | Dimensions In Millimeters |      | Dimensions In Inches |       |
|--------|---------------------------|------|----------------------|-------|
|        | Min                       | Max  | Min                  | Max   |
| A      | 1.40                      | 1.60 | 0.055                | 0.063 |
| 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-23-3L Dimension 外形封装尺寸



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1     | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.900                     | 1.00  | 0.035                | 0.039 |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.450                     | 0.650 | 0.018                | 0.026 |
| L1     | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

■SOT-23 Dimension 外形封装尺寸



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.050                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.900                     | 1.00  | 0.035                | 0.039 |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.500                     | 0.600 | 0.020                | 0.024 |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |