

## 描述 / Descriptions

SOT-23 塑封封装 硅 NPN 数字三极管。Silicon NPN Digital transistor in a SOT-23 Plastic Package.

## 特征 / Features

内装偏置电阻，简化线路设计，减少元件和制造流程。

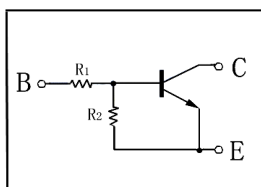
With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process.

## 用途 / Applications

用于开关、反相电路、界面电路以及驱动电路中。

Switching, inverter circuit, interface circuit and driver circuit applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN 1 : Base

PIN 2 : Emitter

PIN 3 : Collector

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

|         |     |
|---------|-----|
| Marking | H86 |
|---------|-----|

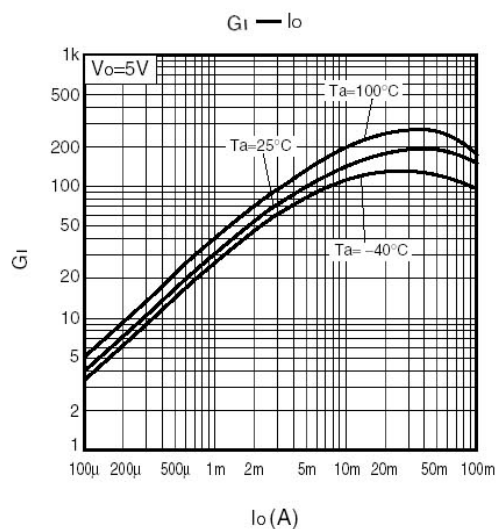
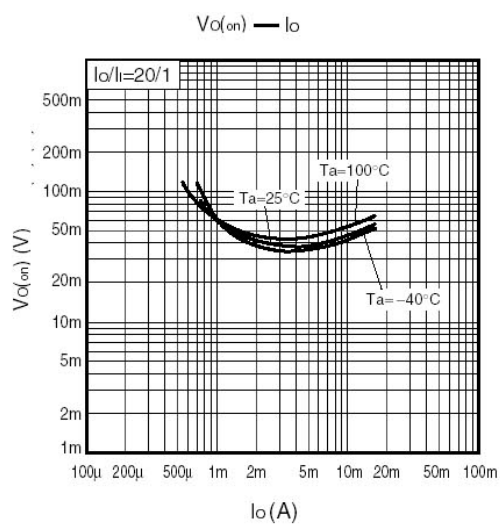
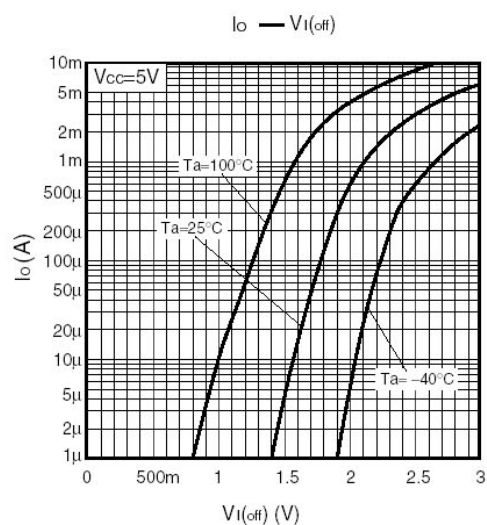
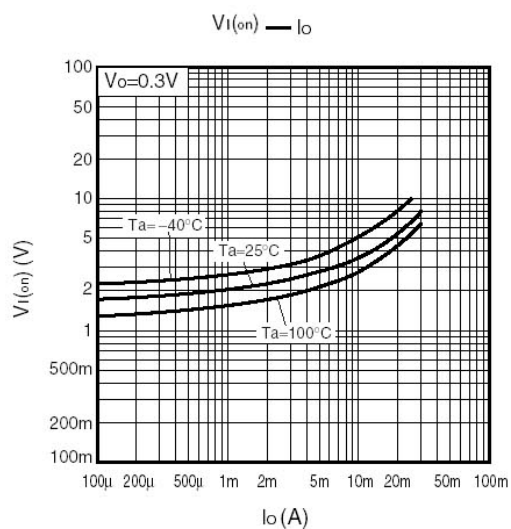
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter           | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|---------------------------|--------------|--------------|------------|
| Output Voltage            | $V_{CC}$     | 50           | V          |
| Input Voltage             | $V_i$        | 40           | V          |
|                           |              | -10          | V          |
| Output Current            | $I_o$        | 30           | mA         |
|                           | $I_c$        | 100          | mA         |
| Collector Dissipation     | $P_C$        | 200          | mW         |
| Junction Temperature      | $T_j$        | 150          | °C         |
| Storage Temperature Range | $T_{stg}$    | -55~150      | °C         |

**电性能参数 / Electrical Characteristics(Ta=25°C)**

| 参数<br>Parameter        | 符号<br>Symbol | 测试条件<br>Test Conditions               | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|------------------------|--------------|---------------------------------------|------------|------------|------------|------------|
| Input Voltage          | $V_{I(off)}$ | $V_{CC}=5.0V$ $I_o=100\mu A$          |            |            | 0.8        | V          |
| Input Voltage          | $V_{I(on)}$  | $V_o=0.3V$ $I_o=10mA$                 | 4          |            |            | V          |
| Output Voltage         | $V_{O(on)}$  | $I_o=10mA$ $I_i=0.5mA$                |            | 0.1        | 0.3        | V          |
| Input Current          | $I_i$        | $V_i=5.0V$                            |            |            | 0.16       | mA         |
| Output Cut-off Current | $I_{O(off)}$ | $V_{CC}=50V$ $V_i=0V$                 |            |            | 0.5        | $\mu A$    |
| DC Current Gain        | $G_i$        | $V_o=5.0V$ $I_o=5.0mA$                | 56         |            |            |            |
| Transition Frequency   | $f_T$        | $I_E=-5mA$ $V_{CE}=10V$<br>$f=100MHz$ |            | 250        |            | MHz        |
| Resistance1            | $R_1$        |                                       | 32.9       | 47         | 61.1       | K $\Omega$ |
| Resistance Ratio       | $R_2/R_1$    |                                       | 0.37       | 0.47       | 0.57       |            |

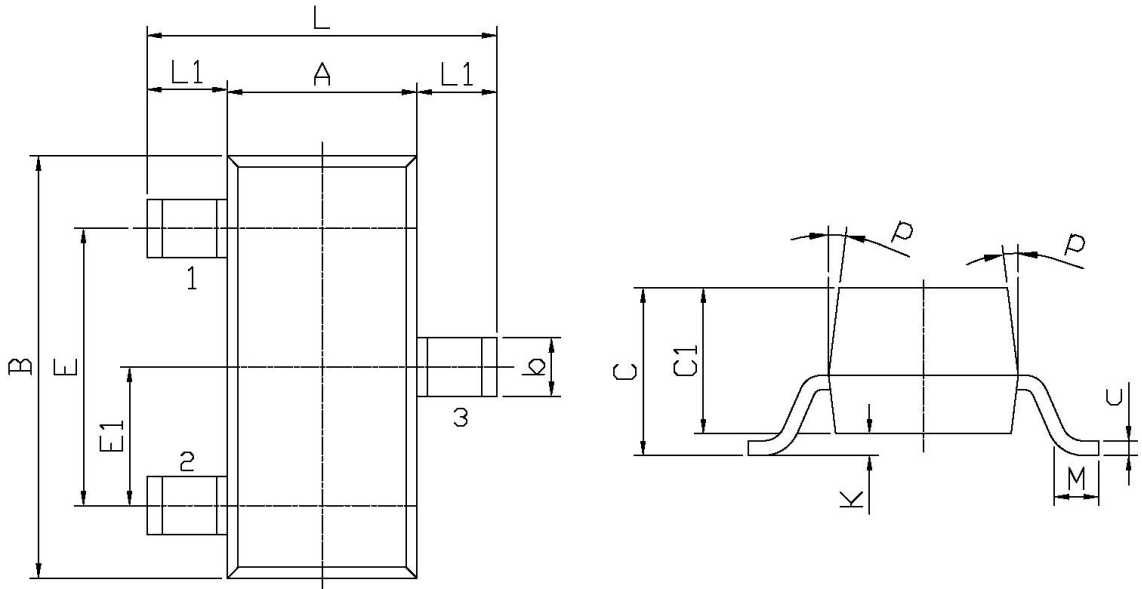
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

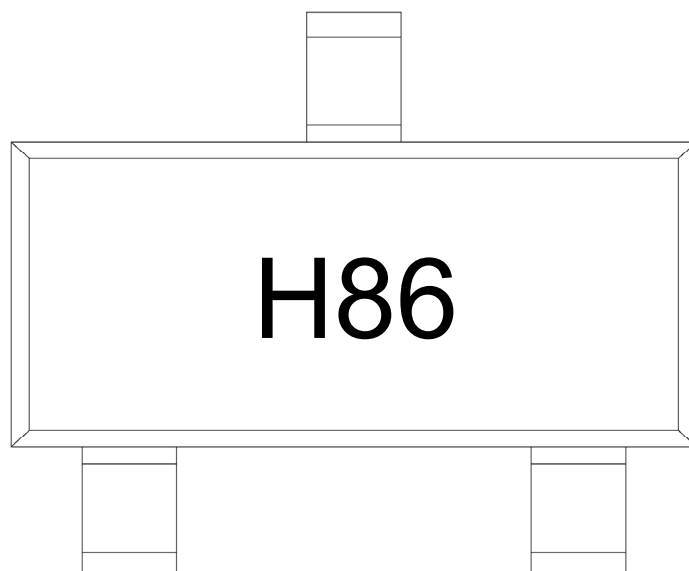
SOT-23

单位：mm



| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |      |
|--------|---------------------------|------|--------|---------------------------|------|
|        | Min                       | Max  |        | Min                       | Max  |
| L      | 2.2                       | 2.7  | C      | 1.30Max                   |      |
| L1     | 0.45                      | 0.65 | C1     | 0.90                      | 1.20 |
| A      | 1.15                      | 1.50 | c      | 0.05                      | 0.20 |
| B      | 2.70                      | 3.10 | K      | 0                         | 0.10 |
| E      | 1.70                      | 2.10 | M      | 0.20MIN                   |      |
| E1     | 0.85                      | 1.05 | P      | 7°                        |      |
| b      | 0.35                      | 0.55 |        |                           |      |

印章说明 / Marking Instructions



说明：

H： 为公司代码

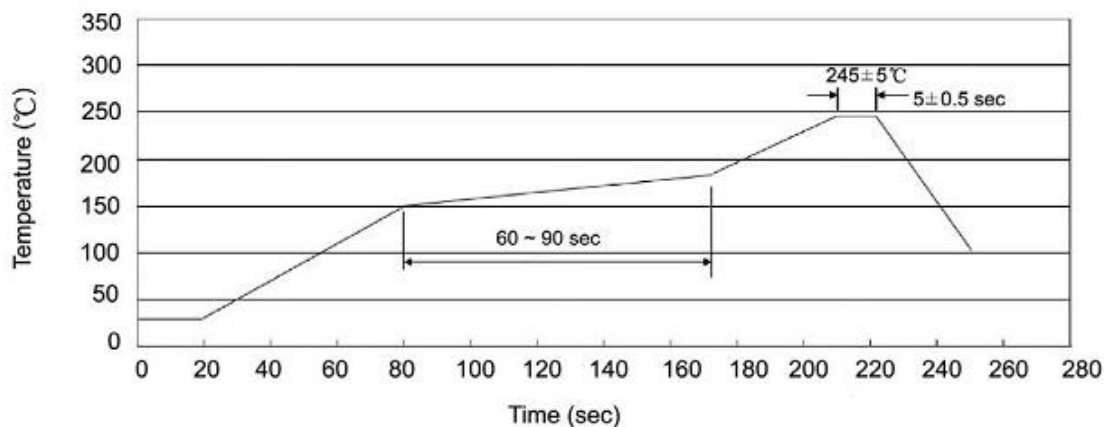
86： 为型号代码

Note:

H： Company Code

86： Product Type

## 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：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

## 包装规格 / Packaging SPEC.

卷盘包装 / REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| SOT-23               | 3,000              | 10                      | 30,000                 | 6                            | 180,000                | 7" ×8                                   | 180×120×180 | 390×385×205 |

## 使用说明 / Notices