

## 描述 / Descriptions

SOT-23 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-23 Plastic Package.

## 特征 / Features

与 S8050M 互补，无卤产品。

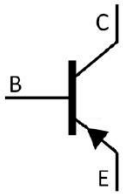
Complementary pair with S8050M,HF product.

## 用途 / Applications

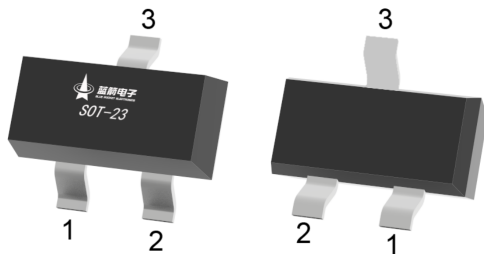
用于功率放大电路。

Power amplifier applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Base

PIN 2 : Emitter

PIN 3 : Collector

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

| $h_{FE}$ Classifications<br>Symbol | B      | C       | D       |
|------------------------------------|--------|---------|---------|
| $h_{FE}$ Range                     | 85~160 | 120~200 | 160~300 |
| Marking                            | HY4B   | HY4C    | HY4D    |

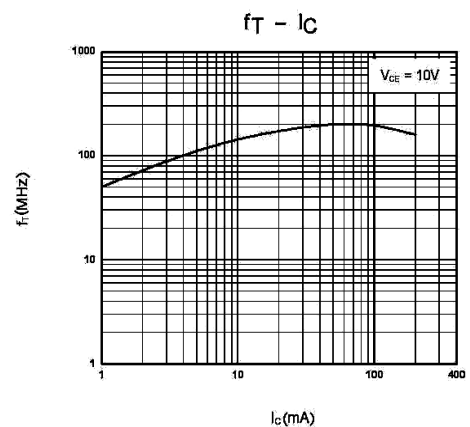
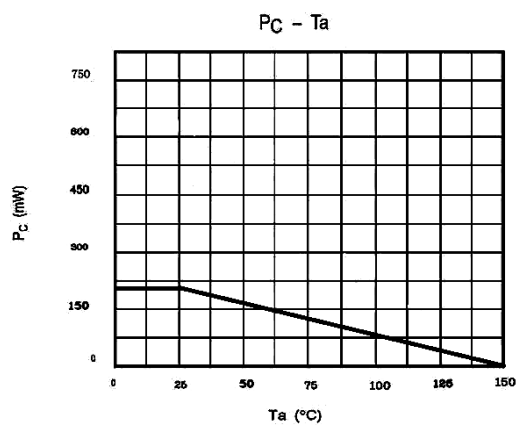
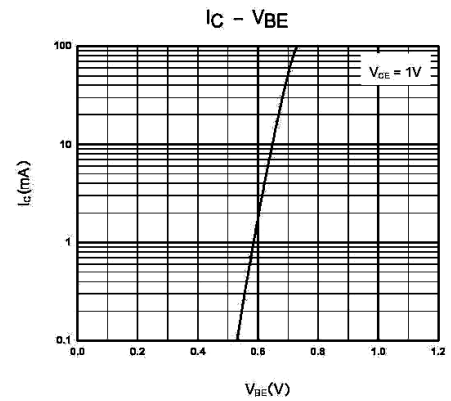
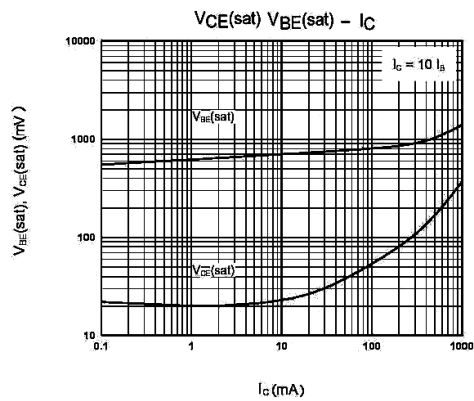
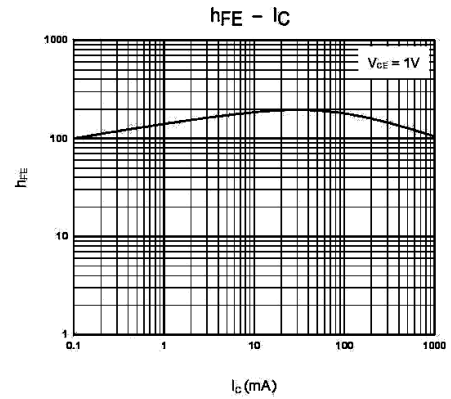
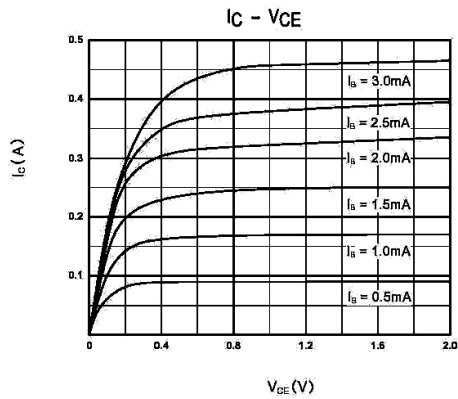
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter              | 符号<br>Symbol     | 数值<br>Rating | 单位<br>Unit |
|------------------------------|------------------|--------------|------------|
| Collector to Base Voltage    | V <sub>CBO</sub> | -40          | V          |
| Collector to Emitter Voltage | V <sub>CEO</sub> | -25          | V          |
| Emitter to Base Voltage      | V <sub>EBO</sub> | -6.0         | V          |
| Collector Current            | I <sub>C</sub>   | -800         | mA         |
| Base Current                 | I <sub>B</sub>   | -200         | mA         |
| Collector Power Dissipation  | P <sub>C</sub>   | 200          | mW         |
| Junction Temperature         | T <sub>j</sub>   | 150          | °C         |
| Storage Temperature Range    | T <sub>stg</sub> | -65~150      | °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 |
|----------------------------------------|----------------------|-----------------------------------------------------|------------|------------|------------|------------|
| Collector to Base Breakdown Voltage    | V <sub>CBO</sub>     | I <sub>C</sub> =-0.1mA I <sub>E</sub> =0            | -40        |            |            | V          |
| Collector to Emitter Breakdown Voltage | V <sub>CEO</sub>     | I <sub>C</sub> =-2.0mA I <sub>B</sub> =0            | -25        |            |            | V          |
| Emitter to Base Breakdown Voltage      | V <sub>EBO</sub>     | I <sub>E</sub> =-0.1mA I <sub>C</sub> =0            | -6.0       |            |            | V          |
| Collector Cut-Off Current              | I <sub>CBO</sub>     | V <sub>CB</sub> =-35V I <sub>E</sub> =0             |            |            | -0.1       | μA         |
| Emitter Cut-Off Current                | I <sub>EBO</sub>     | V <sub>EB</sub> =-6.0V I <sub>C</sub> =0            |            |            | -0.1       | μA         |
| DC Current Gain                        | h <sub>FE(1)</sub>   | V <sub>CE</sub> =-1.0V I <sub>C</sub> =-100mA       | 85         |            | 300        |            |
|                                        | h <sub>FE(2)</sub>   | V <sub>CE</sub> =-1.0V I <sub>C</sub> =-500mA       | 40         |            |            |            |
|                                        | h <sub>FE(3)</sub>   | V <sub>CE</sub> =-1.0V I <sub>C</sub> =-5.0mA       | 45         |            |            |            |
| Collector-emitter Saturation Voltage   | V <sub>CE(sat)</sub> | I <sub>C</sub> =-500mA I <sub>B</sub> =-50mA        |            | -0.28      | -0.6       | V          |
| Base-Emitter Saturation Voltage        | V <sub>BE(sat)</sub> | I <sub>C</sub> =-500mA I <sub>B</sub> =-50mA        |            | -0.98      | -1.2       | V          |
| Base-Emitter Voltage                   | V <sub>BE</sub>      | V <sub>CE</sub> =-1.0V I <sub>C</sub> =-10mA        |            | -0.66      | -1.0       | V          |
| Transition Frequency                   | f <sub>T</sub>       | V <sub>CE</sub> =-10V I <sub>C</sub> =-50mA         | 100        | 200        |            | MHz        |
| Collector Output Capacitance           | C <sub>ob</sub>      | V <sub>CB</sub> =-10V I <sub>E</sub> =0<br>f=1.0MHz |            | 15         |            | pF         |

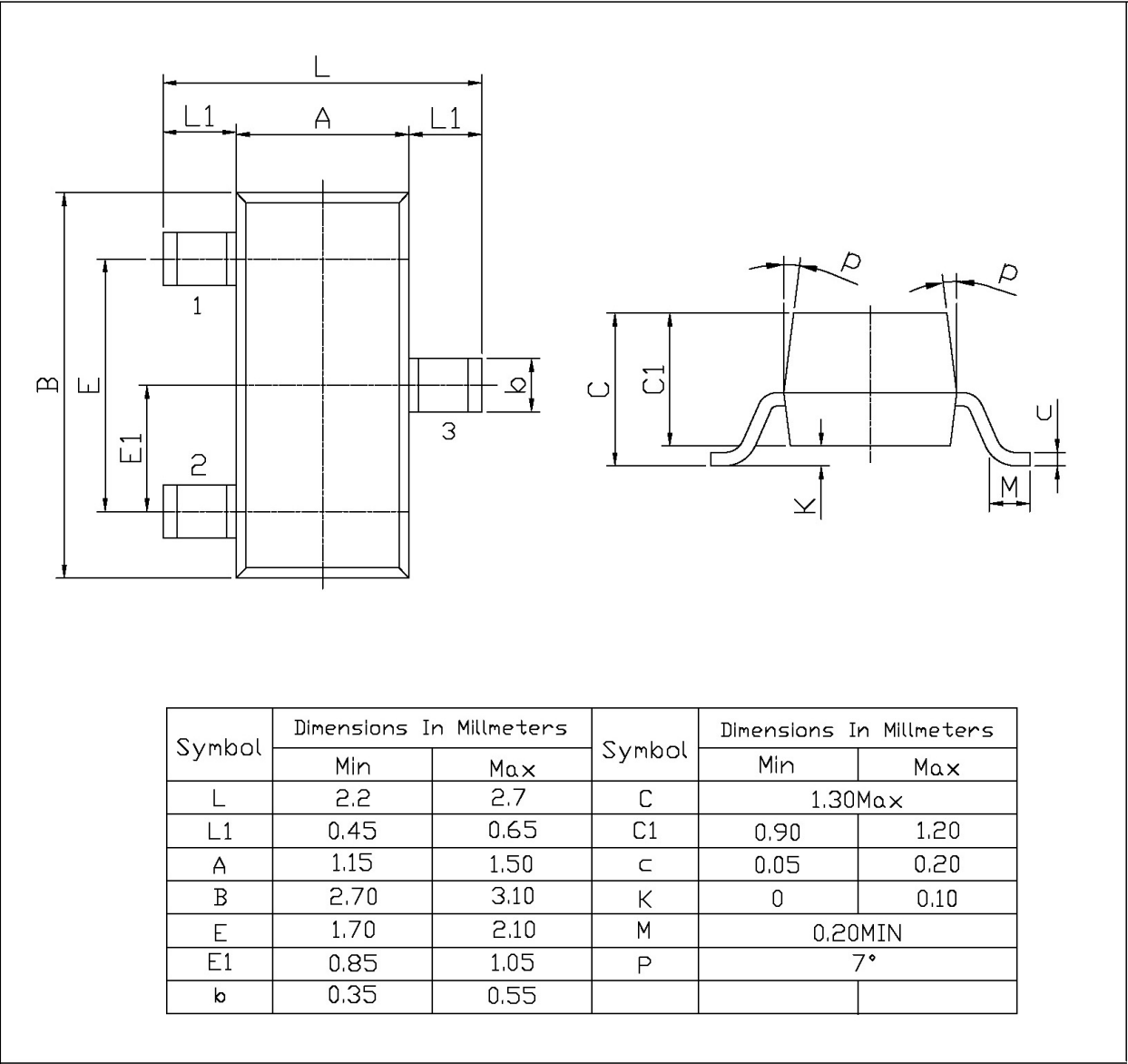
**电参数曲线图 / Electrical Characteristic Curve**



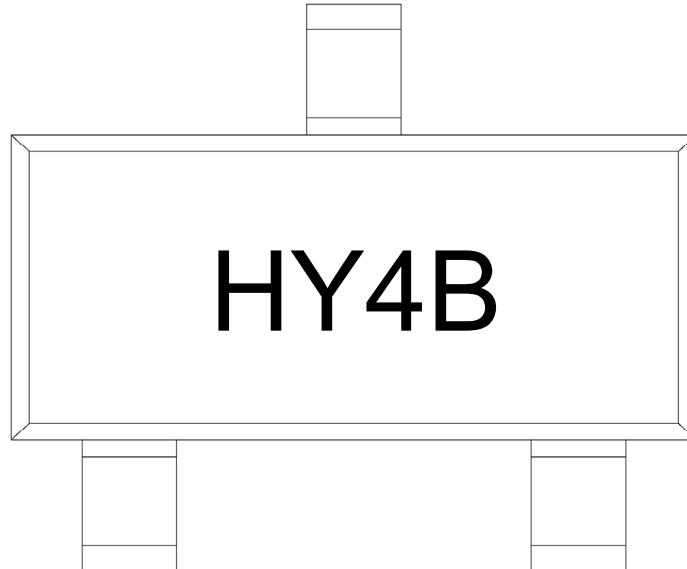
外形尺寸图 / Package Dimensions

SOT-23

单位：mm



**印章说明 / Marking Instructions**



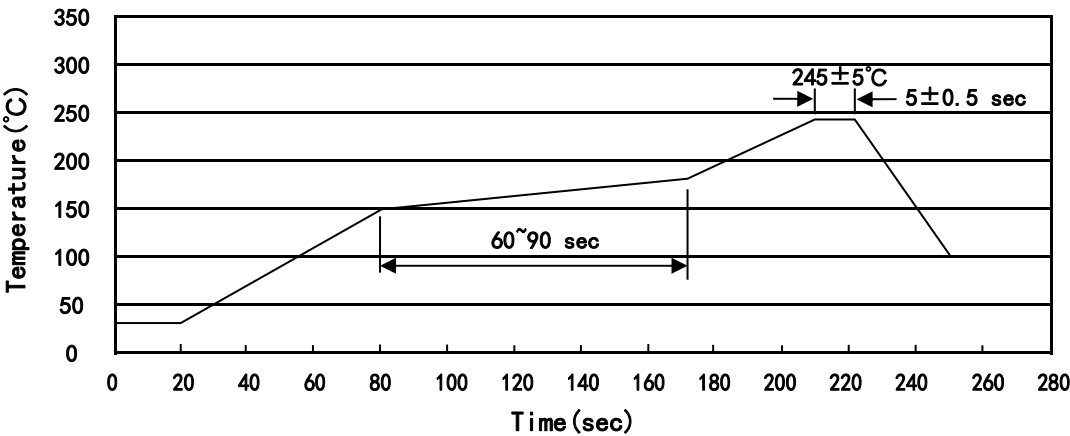
说明：

H： 为公司代码  
Y4： 为型号代码  
B： 为  $h_{FE}$  档次代码

Note:

H： Company Code  
Y4： Product Type Code  
B：  $h_{FE}$  Classifications Symbol Code

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℃，时间 60 ~ 90sec;
  - 2、峰值温度 245±5℃，时间持续为 5±0.5sec;
  - 3、焊接制程冷却速度为 2 ~ 10℃/sec.
- Note:

  - 1.Preheating:150~180℃, Time:60~90sec.
  - 2.Peak Temp.:245±5℃, Duration:5±0.5sec.
  3. Cooling Speed: 2~10℃/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5℃      时间：10±1 sec.

Temp.:260±5℃      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