

**描述 / Descriptions**

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

**特征 / Features**

$P_C$  大,  $h_{FE}$  高且特性好, 与 9015M 互补, 无卤产品。

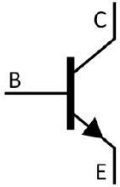
High  $P_C$  and  $h_{FE}$ , excellent  $h_{FE}$  linearity, complementary pair with 9015M, HF product.

**用途 / Applications**

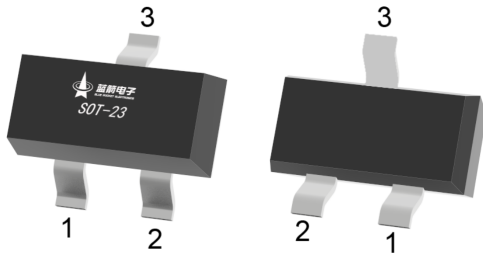
用于低电平、低噪声的前置放大器。

low frequency, low noise pre-amplifier.

**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 | A      | B       | C       | D        |
|------------------------------------|--------|---------|---------|----------|
| $h_{FE}$ Range                     | 60~150 | 100~300 | 200~600 | 400~1000 |
| Marking                            | HJ6A   | HJ6B    | HJ6C    | HJ6D     |

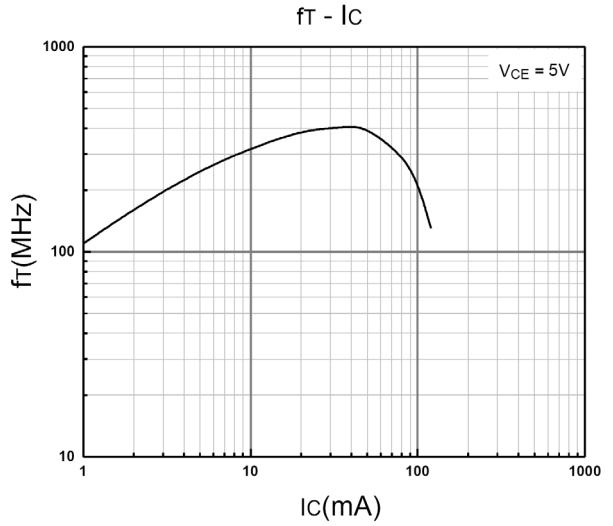
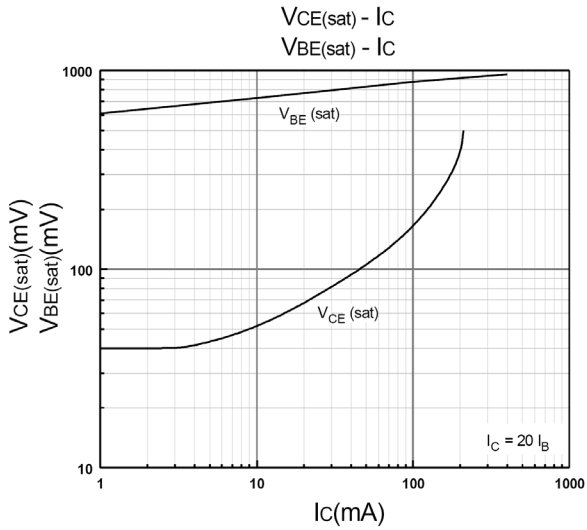
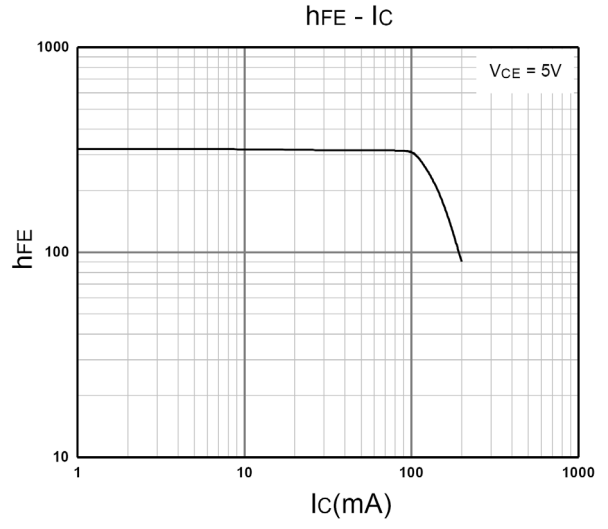
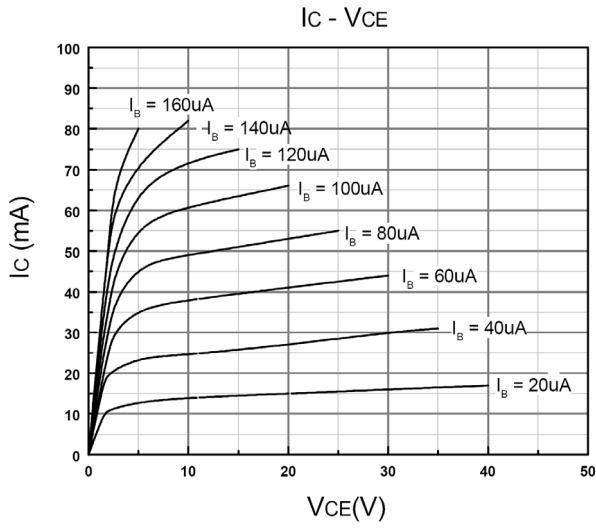
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter              | 符号<br>Symbol     | 数值<br>Rating | 单位<br>Unit |
|------------------------------|------------------|--------------|------------|
| Collector to Base Voltage    | V <sub>CBO</sub> | 50           | V          |
| Collector to Emitter Voltage | V <sub>CEO</sub> | 45           | V          |
| Emitter to Base Voltage      | V <sub>EBO</sub> | 5.0          | V          |
| Collector Current            | I <sub>C</sub>   | 100          | 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> | -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 |
|--|----------------------|---|------------|------------|------------|------------|
| Collector to Base Breakdown Voltage    | V <sub>CBO</sub>     | I <sub>C</sub> =0.1mA I <sub>E</sub> =0   | 50         |            |            | V          |
| Collector to Emitter Breakdown Voltage | V <sub>CEO</sub>     | I <sub>C</sub> =1.0mA I <sub>B</sub> =0   | 45         |            |            | V          |
| Emitter to Base Breakdown Voltage      | V <sub>EBO</sub>     | I <sub>E</sub> =0.1mA I <sub>C</sub> =0   | 5.0        |            |            | V          |
| Collector Cut-Off Current              | I <sub>CBO</sub>     | V <sub>CB</sub> =50V I <sub>E</sub> =0  |            |            | 0.05       | μA         |
| Emitter Cut-off Current                | I <sub>EBO</sub>     | V <sub>EB</sub> =5.0V I <sub>C</sub> =0   |            |            | 0.05       | μA         |
| DC Current Gain                        | h <sub>FE</sub>      | V <sub>CE</sub> =5.0V I <sub>C</sub> =1.0mA   | 60         |            | 1000       |            |
| Collector-Emitter Saturation Voltage   | V <sub>CE(sat)</sub> | I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA   |            | 0.14       | 0.3        | V          |
| Base-Emitter Saturation Voltage        | V <sub>BE(sat)</sub> | I <sub>C</sub> =100mA I <sub>B</sub> =5.0mA   |            | 0.84       | 1.0        | V          |
| Base-Emitter Voltage                   | V <sub>BE</sub>      | V <sub>CE</sub> =5.0V I <sub>C</sub> =2.0mA   |            | 0.63       | 0.7        | V          |
| Transition Frequency                   | f <sub>T</sub>       | V <sub>CE</sub> =5.0V I <sub>C</sub> =10mA  | 150        | 270        |            | MHz        |
| Collector Output Capacitance           | C <sub>ob</sub>      | V <sub>CB</sub> =10V I <sub>E</sub> =0<br>f=1.0MHz  |            | 2.2        | 3.5        | pF         |
| Noise Figure                           | NF                   | V <sub>CE</sub> =5.0V I <sub>C</sub> =0.2mA<br>R <sub>g</sub> =2.0KΩ f=1.0KHz<br>Δf=200Hz |            | 0.9        | 10         | dB         |

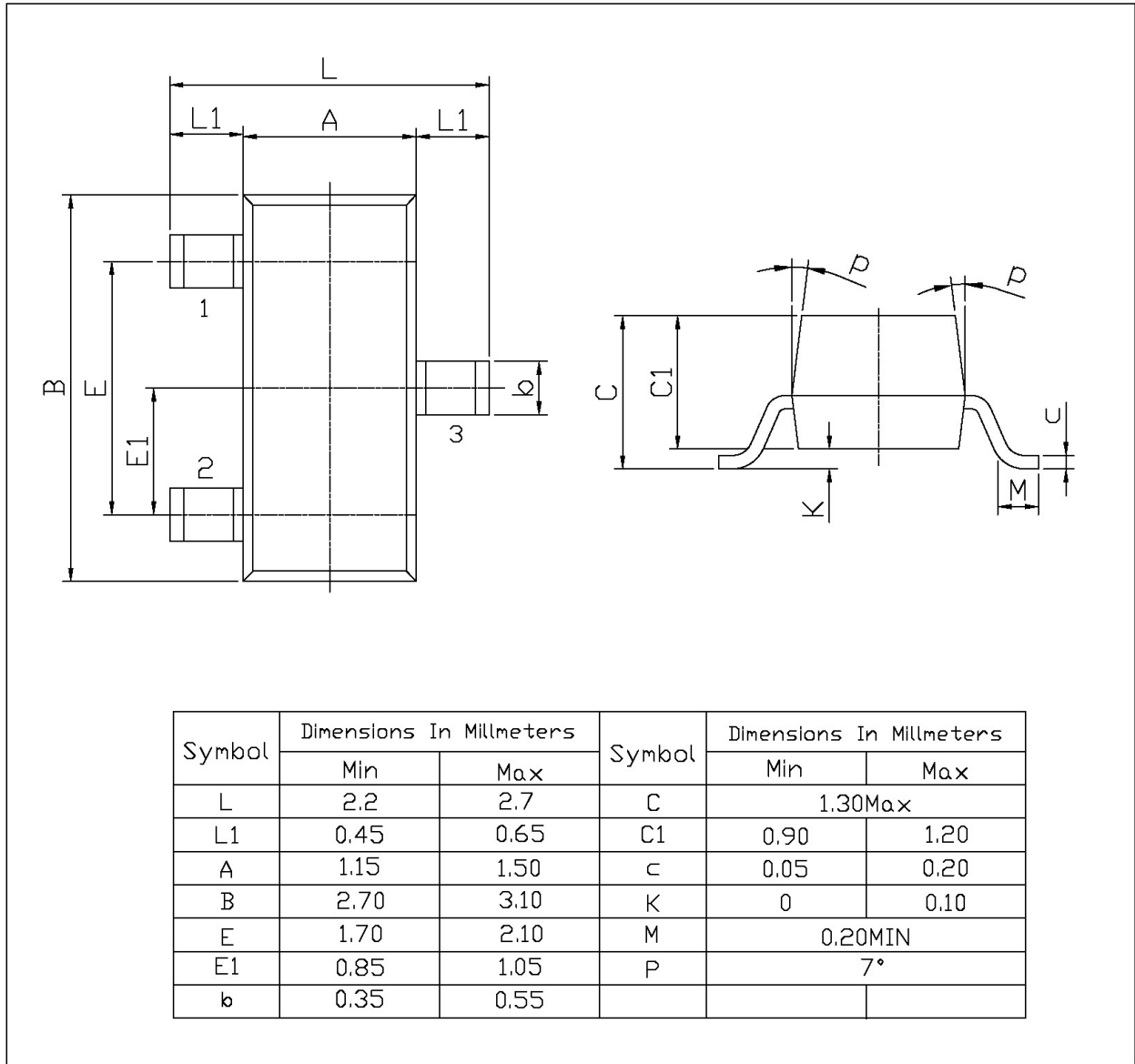
电参数曲线图 / Electrical Characteristic Curve



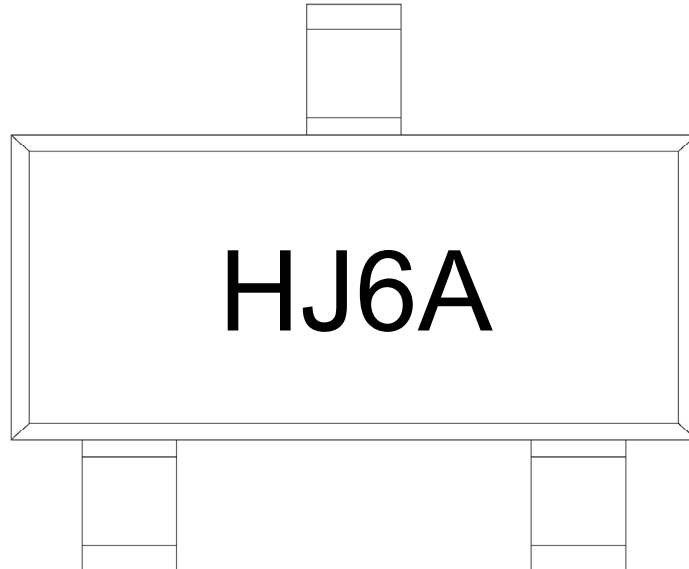
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

J6： 为型号代码

A： 为 h<sub>FE</sub> 档次代码

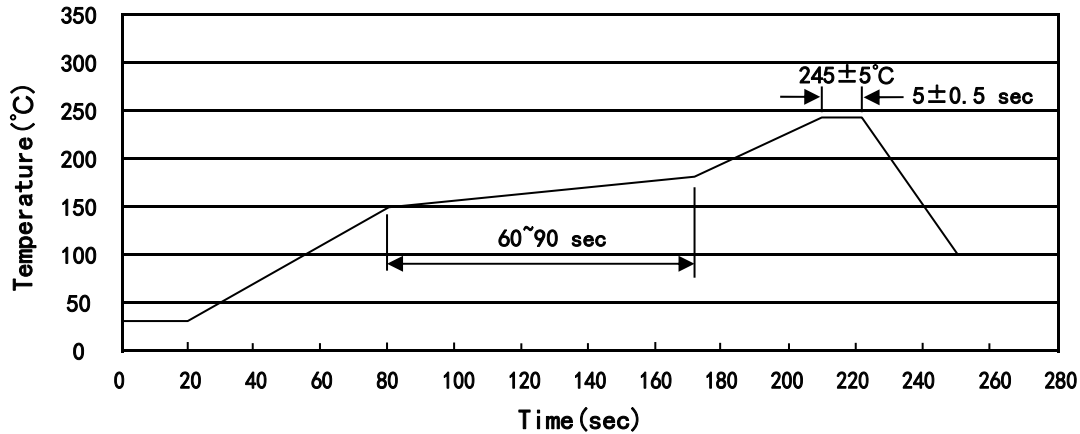
Note:

H： Company Code

J6： Product Type Code

A： h<sub>FE</sub> 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°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：260±5°C

时间：10±1 sec.

Temp.:260±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**