

**描述 / Descriptions**

SOT-323 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-323 Plastic Package.

**特征 / Features**

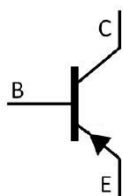
高放大,与 2SD1819A 互补。

High  $h_{FE}$ , complements the 2SD1819A.

**用途 / Applications**

用于一般放大。

General amplification.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning**

PIN1 : Emitter

PIN 2 : Base

PIN 3 : Collector

**印章代码 / Marking**

| $h_{FE}$ Classifications<br>Symbol | Q       | R       | S       |
|------------------------------------|---------|---------|---------|
| $h_{FE}$ Range                     | 160~260 | 210~340 | 290~460 |
| Marking                            | BHQ     | BHR     | BHS     |

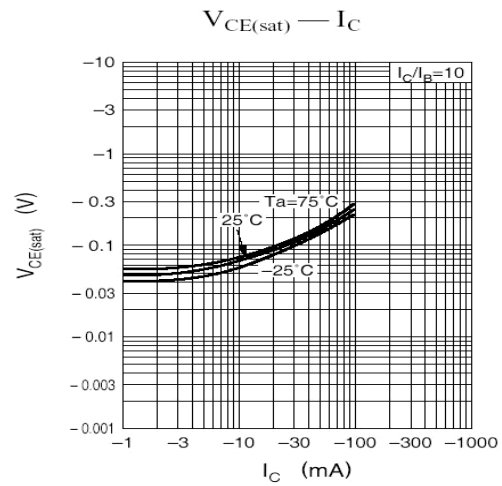
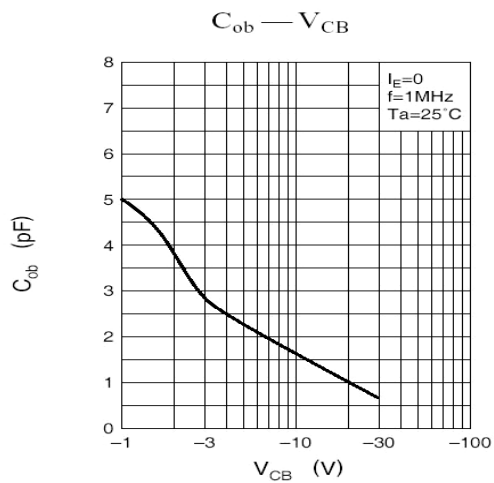
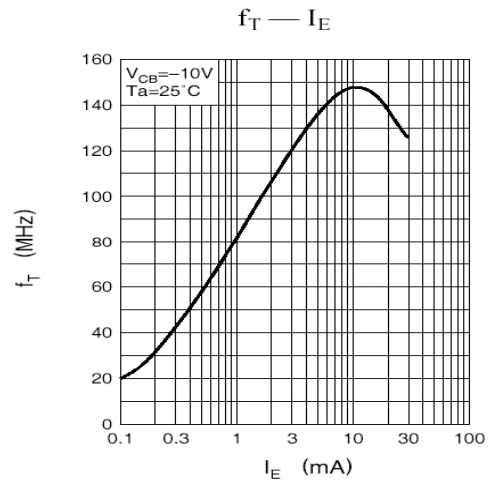
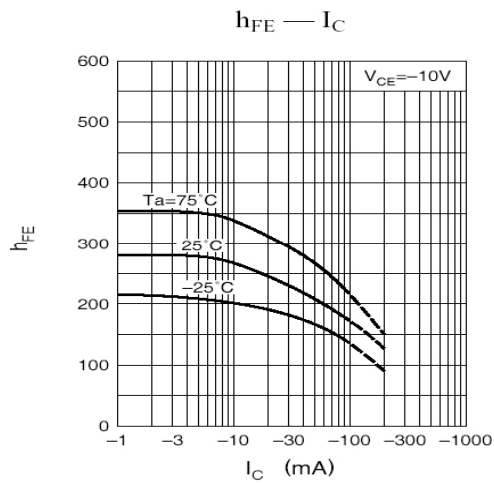
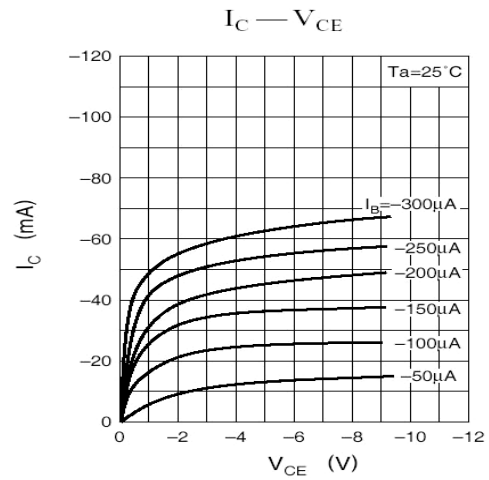
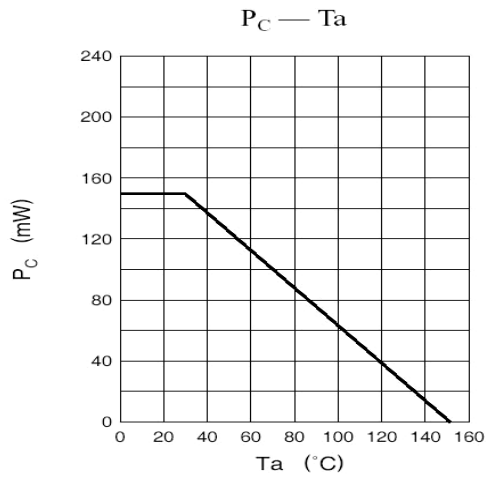
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                       | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|---------------------------------------|--------------|--------------|------------|
| Collector to Base Voltage             | $V_{CBO}$    | -45          | V          |
| Collector to Emitter Voltage          | $V_{CEO}$    | -45          | V          |
| Emitter to Base Voltage               | $V_{EBO}$    | -7.0         | V          |
| Collector Current - Continuous        | $I_C$        | -100         | mA         |
| Collector Current – Continuous(Pulse) | $I_{CP}$     | -200         | mA         |
| Collector Power Dissipation           | $P_C$        | 150          | 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 |
|-----------------------------------------|---------------|--------------------------------------------|------------|------------|------------|------------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C = -10\mu A$ $I_E = 0$                 | -45        |            |            | V          |
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C = -2.0mA$ $I_B = 0$                   | -45        |            |            | V          |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E = -10\mu A$ $I_C = 0$                 | -7.0       |            |            | V          |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB} = -20V$ $I_E = 0$                  |            |            | -0.1       | $\mu A$    |
| Emitter Base Cut-Off Current            | $I_{EBO}$     | $V_{CE} = -10V$ $I_B = 0$                  |            |            | -100       | $\mu A$    |
| DC Current Gain                         | $h_{FE}$      | $V_{CE} = -10V$ $I_C = -2.0mA$             | 160        |            | 460        |            |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -100mA$ $I_B = -10mA$               |            | -0.3       | -0.5       | V          |
| Transition Frequency                    | $f_T$         | $V_{Cb} = -10V$ $f = 200MHz$ $I_E = 1.0mA$ |            | 80         |            | MHz        |
| Collector output capacitance            | $C_{ob}$      | $V_{CB} = -10V$ $f = 1.0MHz$ $I_E = 0$     |            | 2.7        |            | pF         |

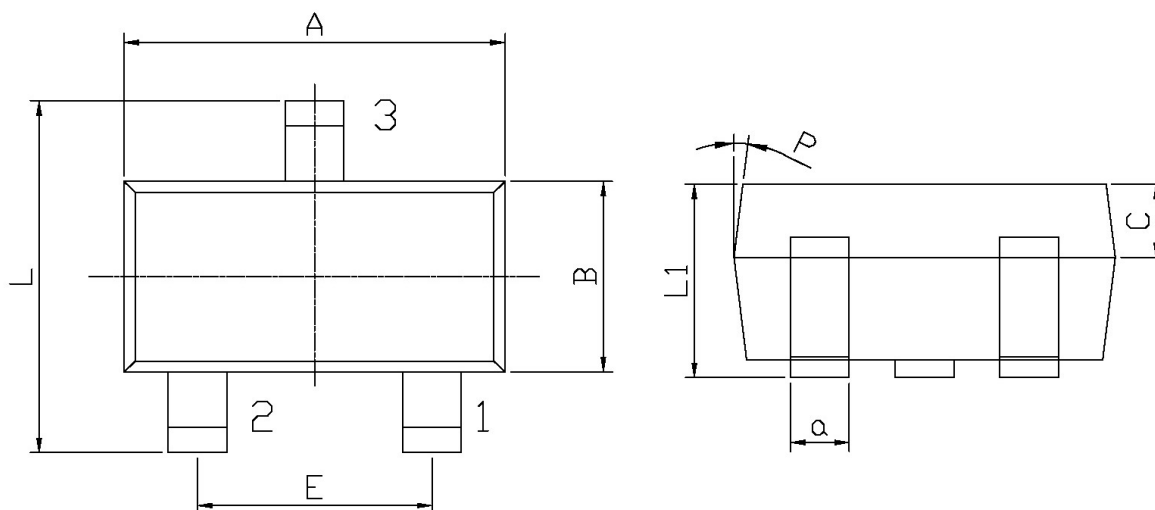
**电参数曲线图 / Electrical Characteristic Curve**



**外形尺寸图 / Package Dimensions**

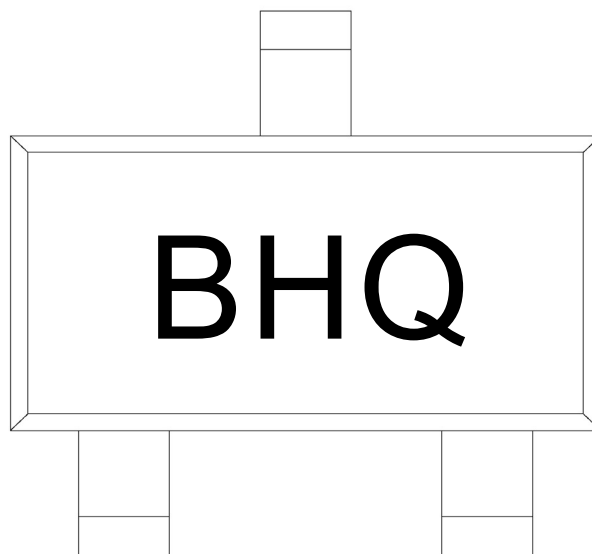
SOT-323

单位: mm



| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |      |
|--------|---------------------------|------|--------|---------------------------|------|
|        | Min                       | Max  |        | Min                       | Max  |
| A      | 1.95                      | 2.35 | C      | 0.30                      | 0.50 |
| L      | 2.00                      | 2.2  | L1     | 0.85                      | 1.15 |
| E      | 1.20                      | 1.40 | a      | 0.20                      | 0.40 |
| B      | 1.15                      | 1.35 | P      | 7°                        |      |

**印章说明 / Marking Instructions**



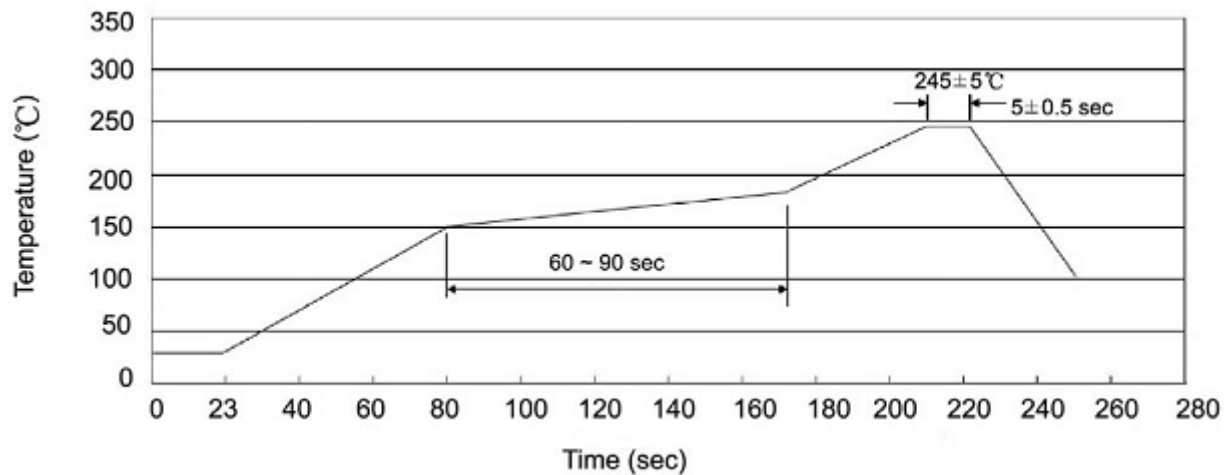
说明：

B： 为型号代码  
H： 为公司代码  
Q： 为  $h_{FE}$  分档代码

Note:

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

### 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 25 ~ 150°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:25~150°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-323              | 3,000              | 10                      | 30,000                 | 8                            | 240,000                | 7" x8                                   | 180×120×180 | 385×257×392 |

### 使用说明 / Notices