

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.

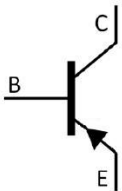
特征 / Features

在集电极电流 300mA 时有较好的电流增益。
high current gain at collector currents to 300 mA.

用途 / Applications

用于一般放大电路。
General purpose amplifier.

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

| | |
|----------------|---------|
| h_{FE} Range | 130~630 |
| Marking | HBK |

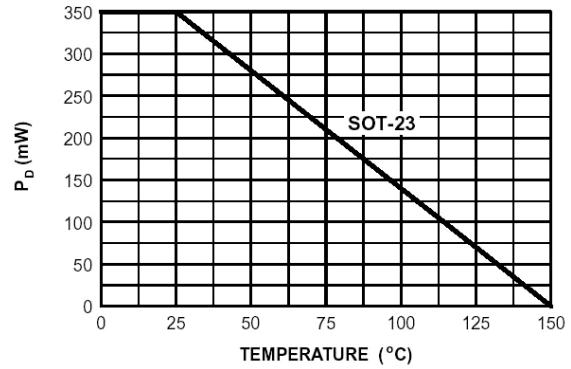
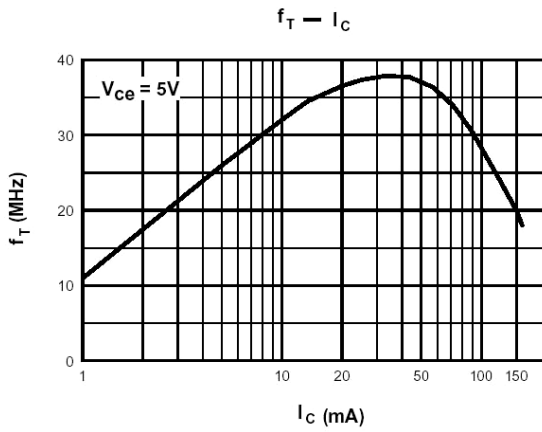
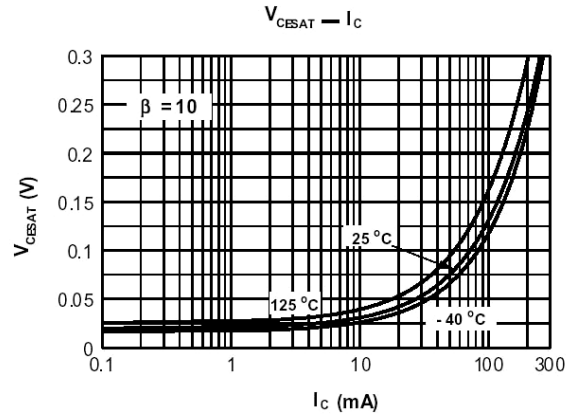
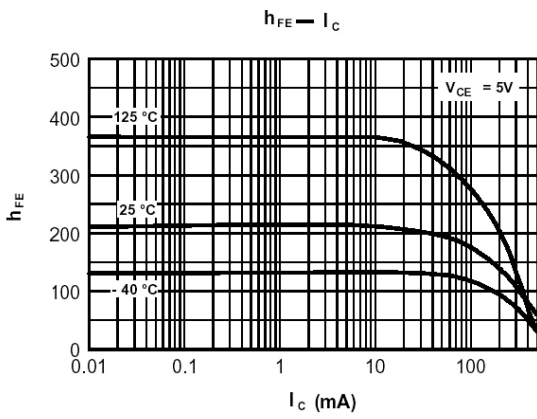
极限参数 / Absolute Maximum Ratings(Ta=25°C)

| 参数 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|------------------------------|--------------|--------------|------------|
| Collector to Base Voltage | V_{CBO} | -45 | V |
| Collector to Emitter Voltage | V_{CEO} | -45 | V |
| Emitter to Base Voltage | V_{EBO} | -5.0 | V |
| Collector Current(DC) | I_C | -500 | mA |
| Collector Power Dissipation | P_C | 350 | mW |
| Storage Temperature Range | T_{stg} | -55~150 | °C |

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

| 参数 Parameter | 符号 Symbol | 测试条件 Test Conditions | 最小值 Min | 典型值 Typ | 最大值 Max | 单位 Unit |
|---|------------------|---|------------|------------|------------|------------|
| Collector-Emitter Breakdown Voltage | V_{CEO} | $I_C=-1.0mA$ $I_B=0$ | -45 | | | V |
| Emitter to Base Breakdown Voltage | V_{EBO} | $I_E=-10\mu A$ $I_C=0$ | -5.0 | | | V |
| Collector-Emitter Cut-off Current | I_{CES} | $V_{CB}=-45V$ $I_E=0$ $T_a=25^\circ C$ | | | -0.02 | μA |
| | | $V_{CB}=-45V$ $I_E=0$ $T_a=100^\circ C$ | | | -20 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}=-5.0V$ $I_C=-2.0mA$ | 130 | | 630 | |
| | $h_{FE(2)}$ | $V_{CE}=-5.0V$ $I_C=-10\mu A$ | 100 | | | |
| | $h_{FE(3)}$ | $V_{CE}=-1.0V$ $I_C=-50mA$ | 110 | | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)(1)}$ | $I_C=-10mA$ $I_B=-0.25mA$ | -0.06 | | -0.25 | V |
| | $V_{CE(sat)(2)}$ | $I_C=-50mA$ $I_B=-1.25mA$ | -0.12 | | -0.55 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)(1)}$ | $I_C=-10mA$ $I_B=-0.25mA$ | -0.6 | | -0.85 | V |
| | $V_{BE(sat)(2)}$ | $I_C=-50mA$ $I_B=-1.25mA$ | -0.68 | | -1.05 | V |
| Base-Emitter On Voltage | $V_{BE(on)}$ | $V_{CE}=-5.0V$ $I_C=-2.0mA$ | -0.6 | | -0.75 | V |
| Output Capacitance | C_{ob} | $V_{CB}=-10V$ $f=1.0MHz$ | | | 6.0 | pF |
| Noise Figure | NF | $V_{CE}=-5.0V$ $I_C=-0.2mA$ $R_g=2.0k\Omega$ $f=1.0MHz$ $BW=200Hz$ | | | 6.0 | dB |
| Turn-On Time | t_{on} | $I_C=-10mA$ $I_{B1}=-1.0mA$ | | | 150 | ns |
| Turn-Off Time | t_{off} | $I_{B2}=-1.0mA$ $V_{BB}=-3.6V$ $R_1=R_2=5.0K\Omega$ $R_L=990\Omega$ | | | 800 | ns |

电参数曲线图 / Electrical Characteristic Curve



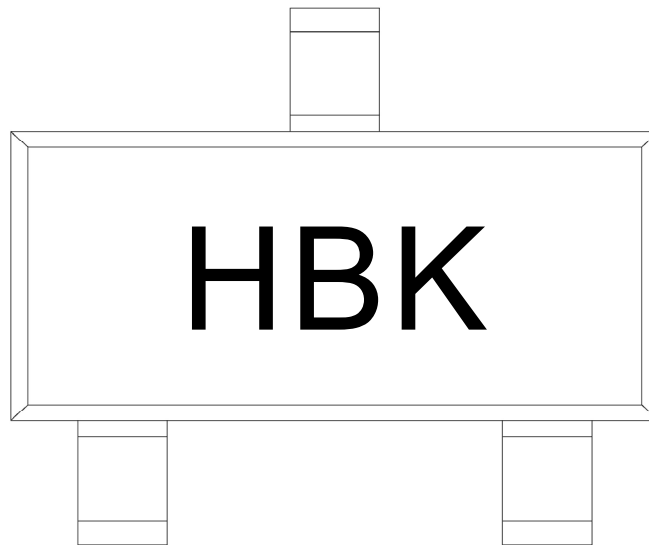
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

BK： 为型号代码

Note:

H: Company Code

BK: Product Type 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 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 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: mm ³) | | |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
| | Units/Reel 只/卷盘 | Reels/Inner Box 卷盘/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Reel | Inner Box 盒 | Outer Box 箱 |
| SOT-23 | 3,000 | 10 | 30,000 | 6 | 180,000 | 7" x8 | 180×120×180 | 390×385×205 |

使用说明 / Notices