

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

饱和压降低，电流大。

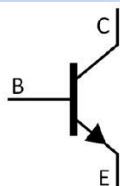
Low $V_{CE(sat)}$, high current.

用途 / Applications

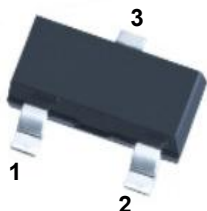
用于一般静音开关，液晶显示器的背景照明，线性开关电源。

General purpose switching and muting, LCD back-lighting, supply line switching circuits.

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 | 220~450 |
| Marking | HZG |

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} | 20 | V |
| Collector to Emitter Voltage | V _{CEO} | 20 | V |
| Emitter to Base Voltage | V _{EBO} | 5.0 | V |
| Collector Current | I _C | 2.0 | A |
| Peak Collector Current | I _{CM} | 5.0 | A |
| Base Current | I _B | 0.5 | A |
| Total Power Dissipation | P _{tot(1)} 注2 | 300 | mW |
| | P _{tot(2)} 注1、2 | 1.2 | W |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature Range | T _{stg} | -65~150 | °C |

注：

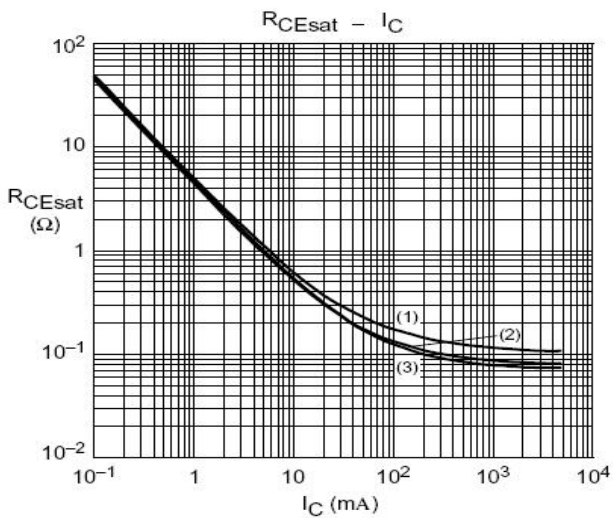
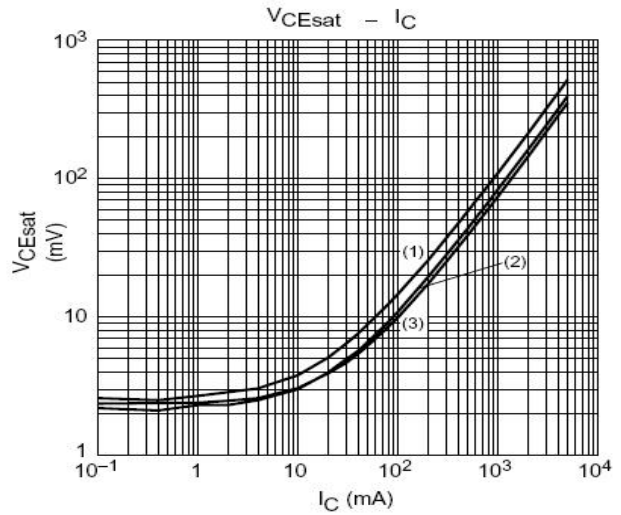
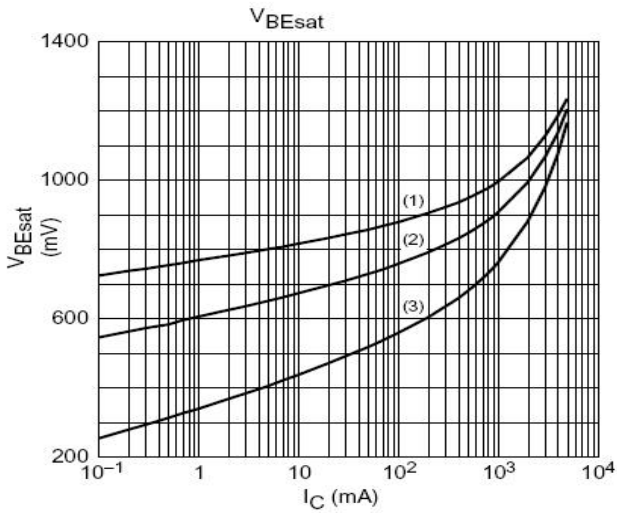
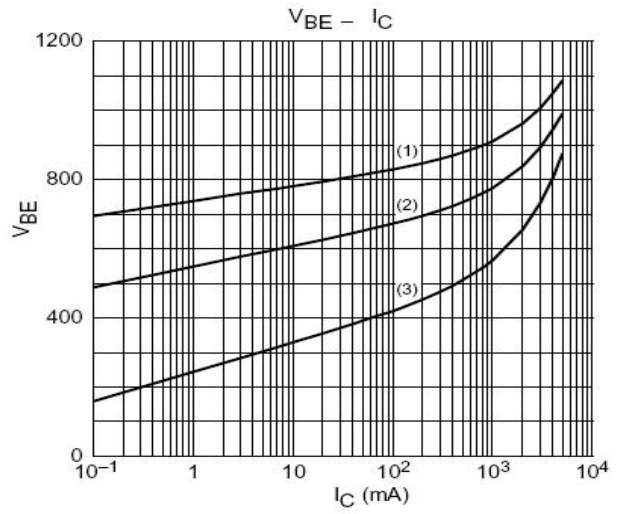
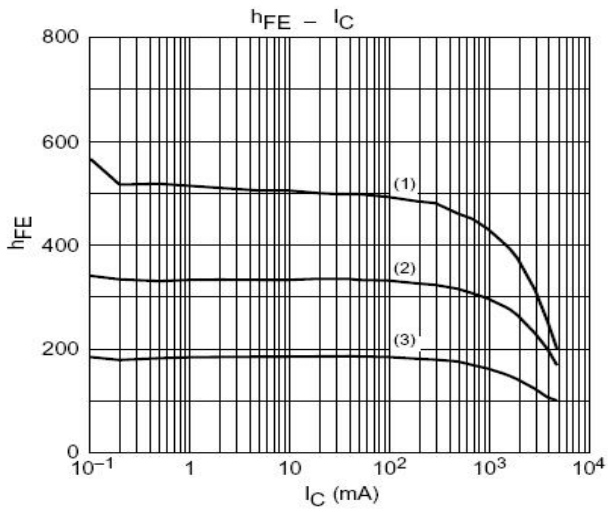
1. 脉冲条件下操作：脉冲宽度tp ≤ 100 ms，占空比δ ≤ 0.25。
2. 器件安装在印刷电路板上。

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 Cut-Off Current | I _{CBO} | V _{CB} =20V I _E =0 | | | 0.1 | μA |
| | | V _{CB} =20V I _E =0 T _j =150°C | | | -50 | μA |
| Emitter Cut-Off Current | I _{EBO} | V _{EB} =5.0V I _C =0 | | | 0.1 | μA |
| DC Current Gain | h _{FE(1)} | V _{CE} =2.0V I _C =500mA | 220 | | 450 | |
| | h _{FE(2)} | V _{CE} =2.0V I _C =100mA | 220 | | | |
| | *h _{FE(3)} | V _{CE} =2.0V I _C =1.0A | 220 | | | |
| | *h _{FE(4)} | V _{CE} =2.0V I _C =2.0A | 200 | | | |
| | *h _{FE(5)} | V _{CE} =2.0V I _C =3.0A | 150 | | | |
| Collector-Emitter Saturation Voltage | V _{CE(sat)(1)} | I _C =500mA I _B =50mA | | | 70 | mV |
| | V _{CE(sat)(2)} | I _C =1.0A I _B =50mA | | | 120 | mV |
| Equivalent On-Resistance | *R _{CE(sat)} | I _C =2.0A I _B =200mA | | 80 | 105 | mΩ |
| Base-Emitter Saturation Voltage | *V _{BE(sat)} | I _C =2.0A I _B =40mA | | | 1.1 | V |
| | | I _C =3.0A I _B =300mA | | | 1.2 | V |
| Base-Emitter Voltage | *V _{BE(ON)} | V _{CE} =2.0V I _C =1.0A | | | 1.2 | V |
| Transition Frequency | f _T | V _{CE} =5.0V I _C =100mA f=100MHz | 100 | | | MHz |
| Collector Capacitance | C _C | V _{CB} =10V I _E =0 f=1.0MHz | | | 35 | pF |

*注：脉冲测试: tp ≤ 300 μs; δ ≤ 0.02.

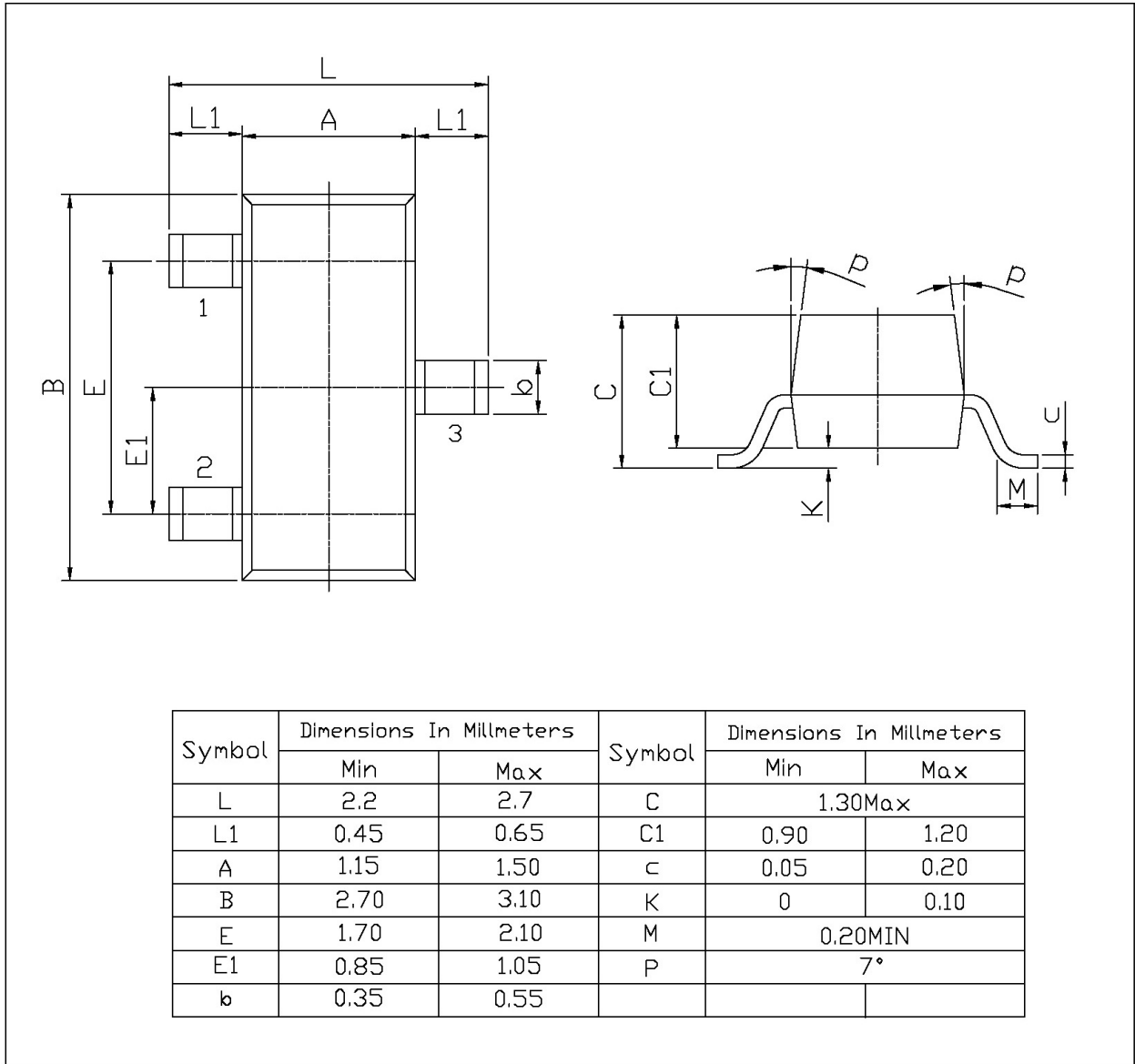
电参数曲线图 / Electrical Characteristic Curve



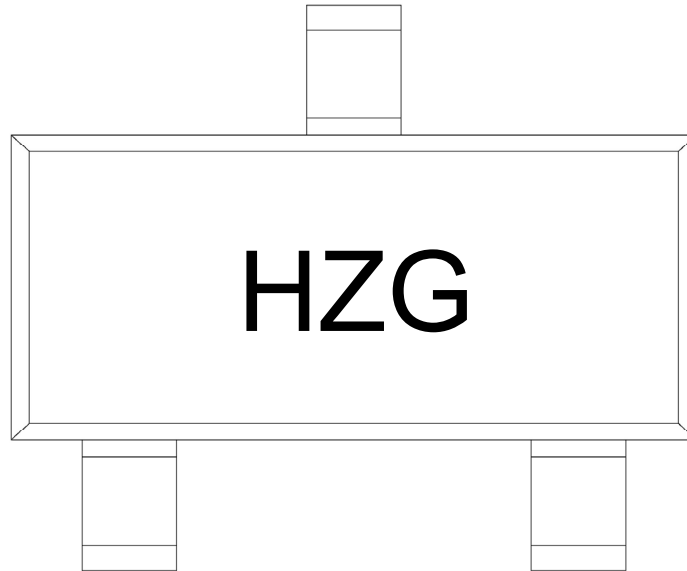
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

ZG： 为型号代码

Note:

H： Company Code

ZG： 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 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" ×8 | 180×120×180 | 390×385×205 |

使用说明 / Notices