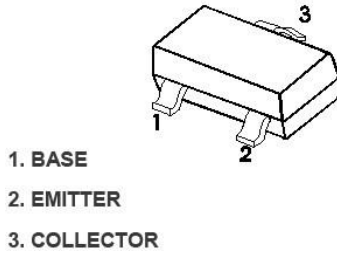


## SOT-23



MARKING:J3

## 特征 Features

- 与S9012配对; Complementary to S9012
- 最大功率耗散 300mW; Power Dissipation of 300mW
- 高稳定性和可靠性。High Stability and High Reliability

## 机械数据 Mechanical Data

- 封装: SOT-23 封装 SOT-23 Small Outline Plastic Package
- 环氧树脂UL 易燃等级Epoxy UL: 94V-0
- 安装位置: 任意 Mounting Position: Any
- Device meets MSL 1 requirements

极限值和温度特性(TA = 25℃ 除非另有规定)

## Maximum Ratings &amp; Thermal Characteristics (TA=25℃ unless otherwise specified)

| 参数 Parameters                               | 符号 Symbol | 数值 Value | 单位 Unit |
|---------------------------------------------|-----------|----------|---------|
| Collector-Base Voltage                      | VCBO      | 40       | V       |
| Collector-Emitter Voltage                   | VCEO      | 25       | V       |
| Emitter -Base Voltage                       | VEBO      | 5        | V       |
| Collector Current-Continuous                | IC        | 500      | mA      |
| Collector Power Dissipation                 | PC        | 300      | mW      |
| Junction Temperature                        | Tj        | 150      | ℃       |
| Storage Temperature                         | TSTG      | -55-+150 | ℃       |
| Thermal resistance from junction to ambient | RθJA      | 417      | ℃/W     |

## 电特性 Electrical Characteristics (TA=25℃ unless otherwise specified)

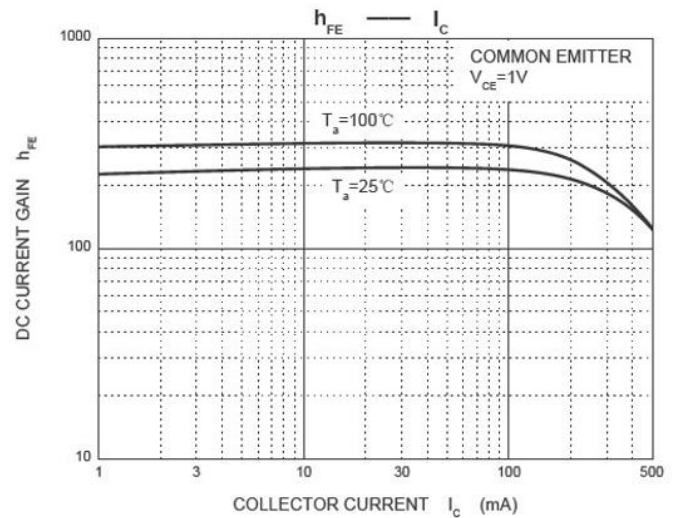
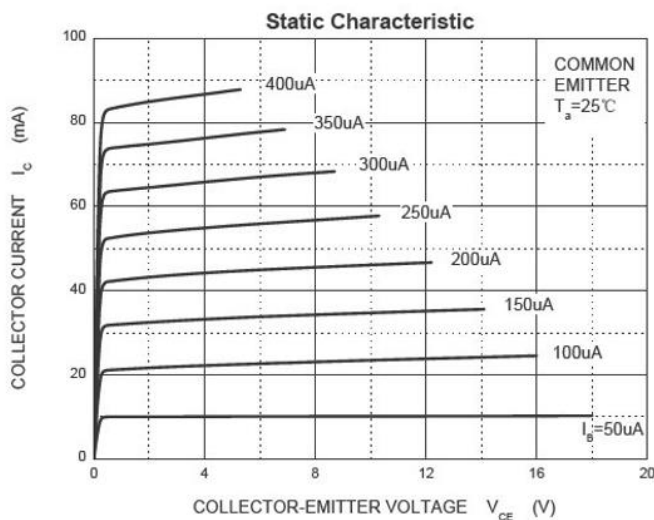
| 参数 Parameter                        | 符号 Symbols | 测试条件 Test Condition | 界限 Limits |     | 单位 Unit |
|-------------------------------------|------------|---------------------|-----------|-----|---------|
|                                     |            |                     | Min       | Max |         |
| Collector-base breakdown voltage    | V(BR)CBO   | IC=100uA, IE=0      | 40        |     | V       |
| Collector-emitter breakdown voltage | V(BR)CEO   | IC=1mA, IB=0        | 25        |     | V       |
| Emitter-base breakdown voltage      | V(BR)EBO   | IE=100uA, IC=0      | 5         |     | V       |
| Collector cut-off current           | ICEO       | VCE=20V, IB=0       |           | 100 | nA      |
| Collector cut-off current           | ICBO       | VCB=40V, IE=0       |           | 100 | nA      |

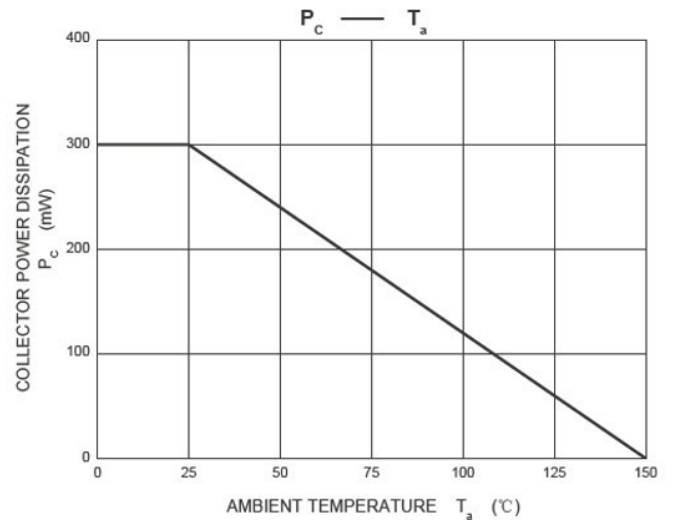
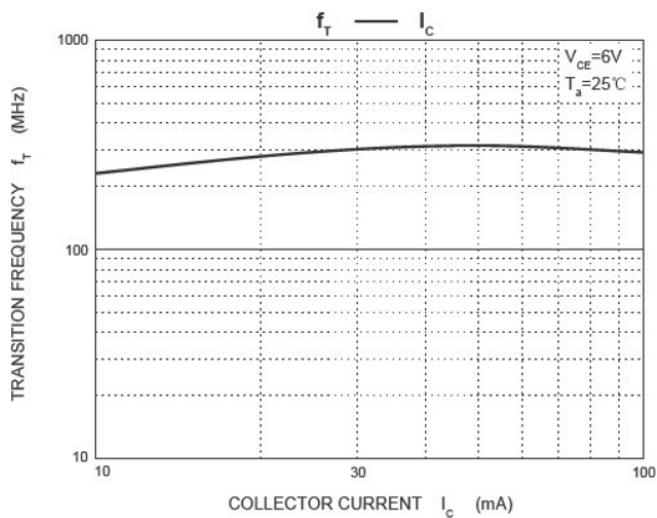
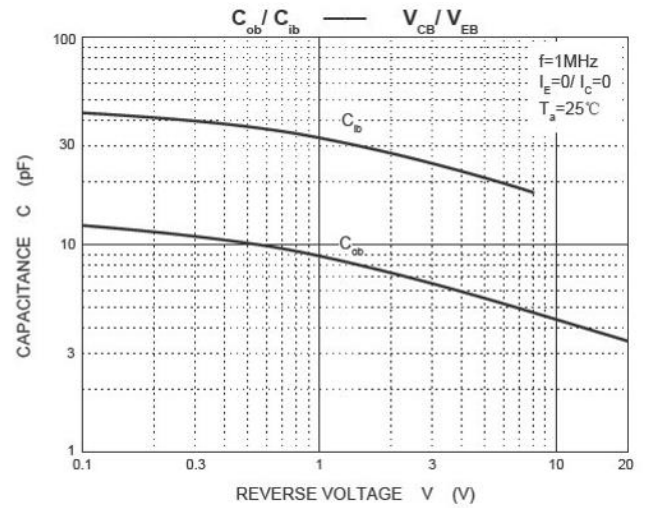
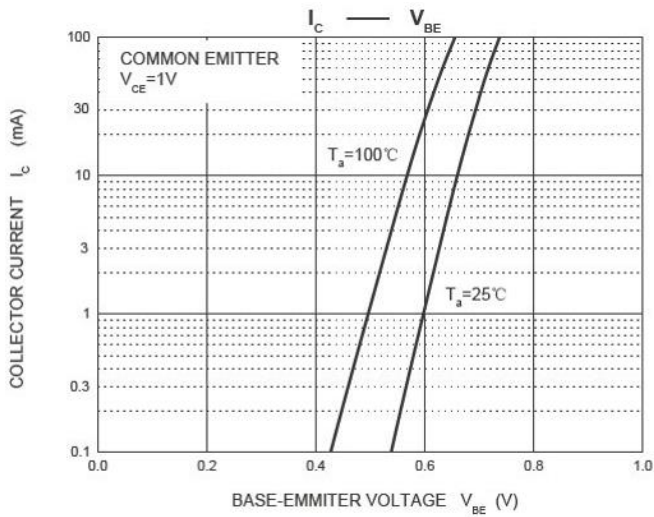
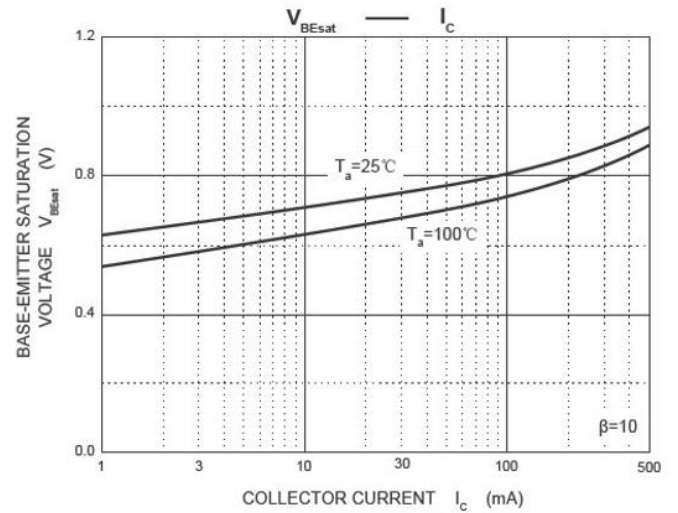
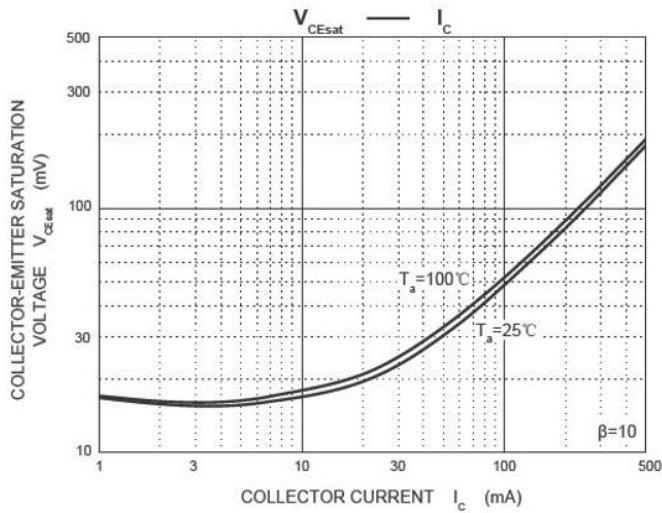
|                                      |               |                                |     |      |     |
|--------------------------------------|---------------|--------------------------------|-----|------|-----|
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5V, I_C=0$             |     | 100  | nA  |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=1V, I_C=50mA$          | 120 | 400  |     |
|                                      | $h_{FE(2)}$   | $V_{CE}=1V, I_C=500mA$         | 50  |      |     |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500mA, I_B=50mA$          |     | 0.60 | V   |
| Base -emitter saturation voltage     | $V_{BE(sat)}$ | $I_C=500mA, I_B=50mA$          |     | 1.20 | V   |
| Base -emitter voltage                | $V_{BE}$      | $V_{CB}=1V, I_C=10mA$          |     | 0.70 | V   |
| Transition frequency                 | $f_T$         | $V_{CE}=6V, I_C=20mA, f=30MHz$ | 150 |      | MHz |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=6V, I_E=0, f=1MHz$     |     | 8    | pF  |

### CLASSIFICATION OF $h_{FE(1)}$

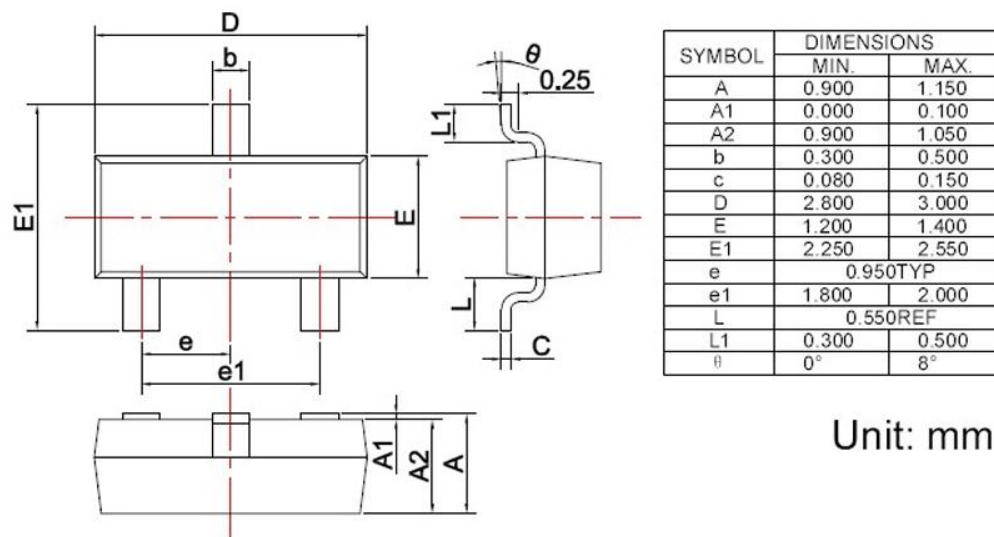
|       |         |         |         |
|-------|---------|---------|---------|
| RANK  | L       | H       | J       |
| RANGE | 120-200 | 200-350 | 300-400 |

### Typical Performance Characteristics ( $T_A=25^\circ C$ unless otherwise Specified)

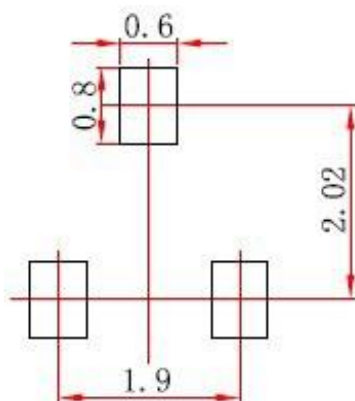




## SOT-23 Package Outline Drawing



## Suggested Land Pattern



### Note:

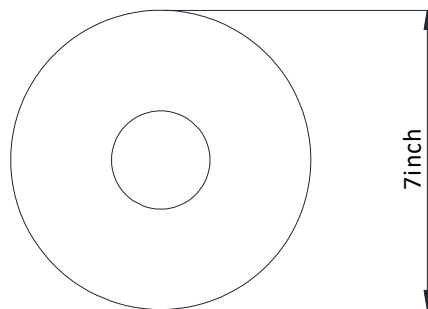
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

## Ordering Information

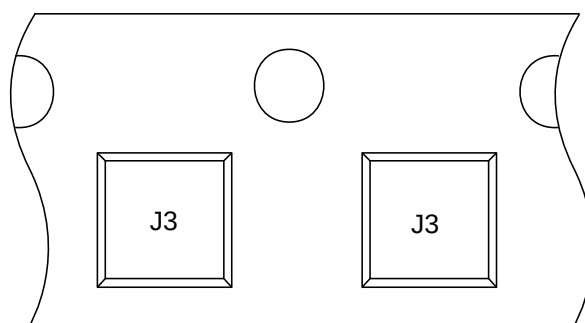
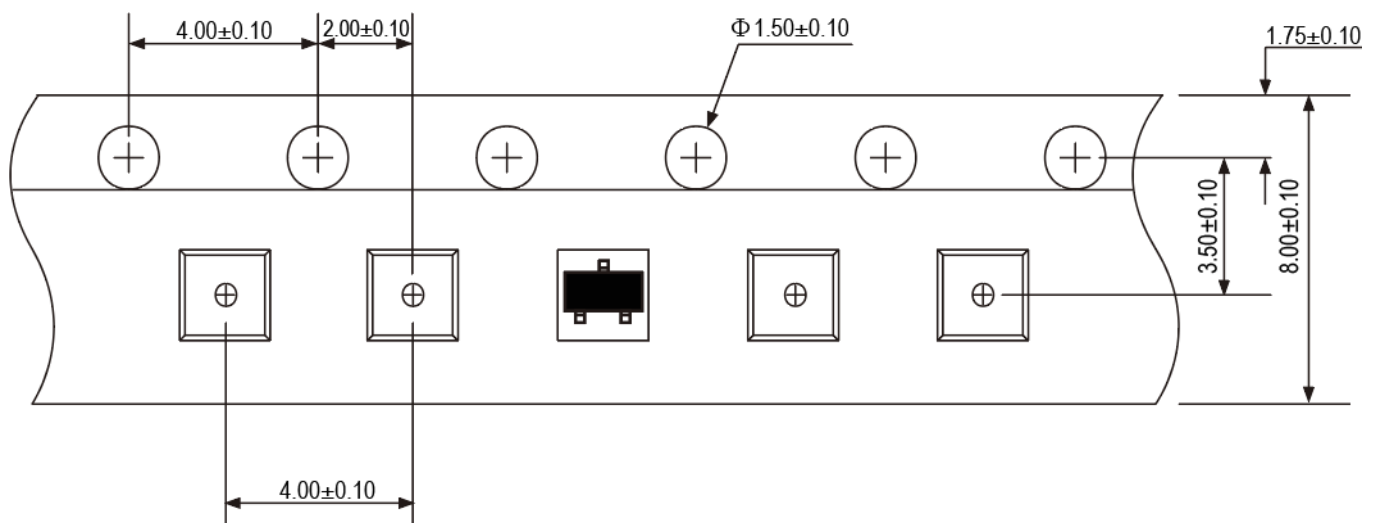
| Part Number | Shipping         | Reel Size |
|-------------|------------------|-----------|
| S9013       | 3000/Tape & Reel | 7 inch    |

## Tape and Reel Information

Reel Dimensions



Tape Dimensions



User Direction of Feed

## IMPORTANT NOTICE

The information given in this document is believed to be accurate and reliable but shall in no event be regarded as a guarantee of conditions or characteristics. PN-Silicon assumes no responsibility for any errors in this document, or for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of PN-Silicon.

The product listed in this document are designed to be used with ordinary electronic equipment or devices and are not authorized to used with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, automotive and other safety device.)

The  logo is a registered trademark of PN-Silicon co., ltd which reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. PN-Silicon makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.