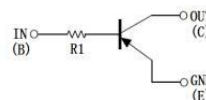


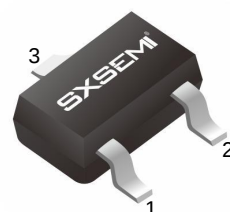
## FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- Surface mount package ideally Suited for Automatic Insertion

### Equivalent Circuit



### SOT-323



### MARKING:93

1. IN 2. GND 3. OUT

## MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

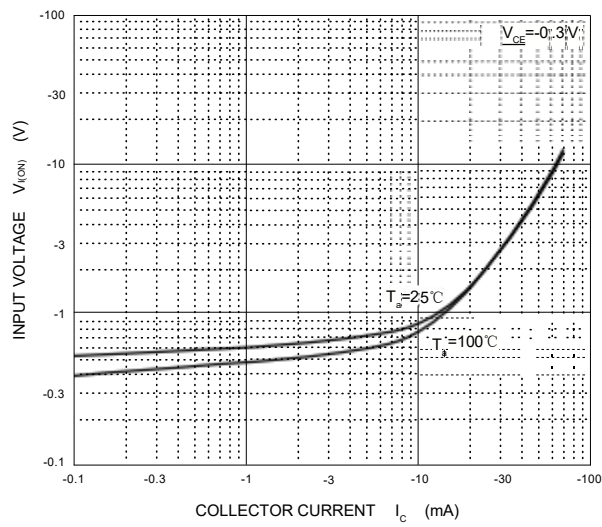
| Symbol         | Parameter                                        | Limits   | Unit |
|----------------|--------------------------------------------------|----------|------|
| $V_{CBO}$      | Collector-Base Voltage                           | -50      | V    |
| $V_{CEO}$      | Collector-Emitter Voltage                        | -50      | V    |
| $V_{EBO}$      | Emitter-Base Voltage                             | -5       | V    |
| $I_C$          | Collector Current                                | -100     | mA   |
| $P_D$          | Power Dissipation                                | 200      | mW   |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55~+150 | ℃    |

## ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

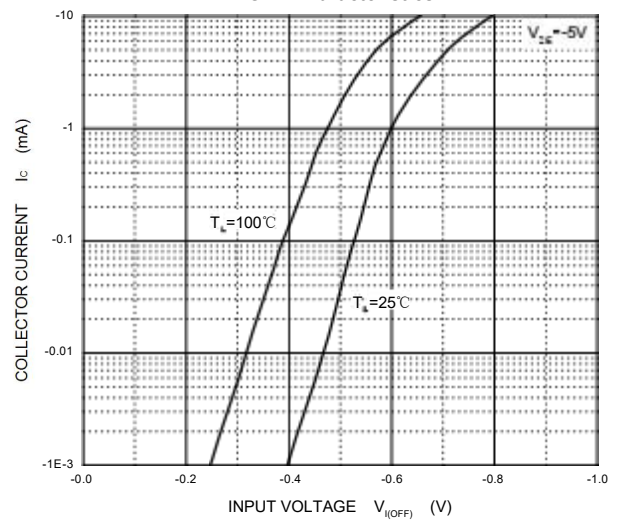
| Parameter                            | Symbol        | Conditions                             | Min  | Typ | Max  | Unit       |
|--------------------------------------|---------------|----------------------------------------|------|-----|------|------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -50\mu A, I_E = 0$              | -50  |     |      | V          |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -1mA, I_B = 0$                  | -50  |     |      | V          |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -50\mu A, I_C = 0$              | -5   |     |      | V          |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -50V, I_E = 0$               |      |     | -0.5 | $\mu A$    |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4V, I_C = 0$                |      |     | -0.5 | $\mu A$    |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -5mA, I_B = -0.25mA$            |      |     | -0.3 | V          |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -5V, I_C = -1mA$             | 100  |     | 600  |            |
| Input resistor                       | $R_1$         |                                        | 3.29 | 4.7 | 6.11 | k $\Omega$ |
| Transition frequency                 | $f_T$         | $V_{CE} = -10V, I_E = 5mA, f = 100MHz$ |      | 250 |      | MHz        |

# Typical Characteristics

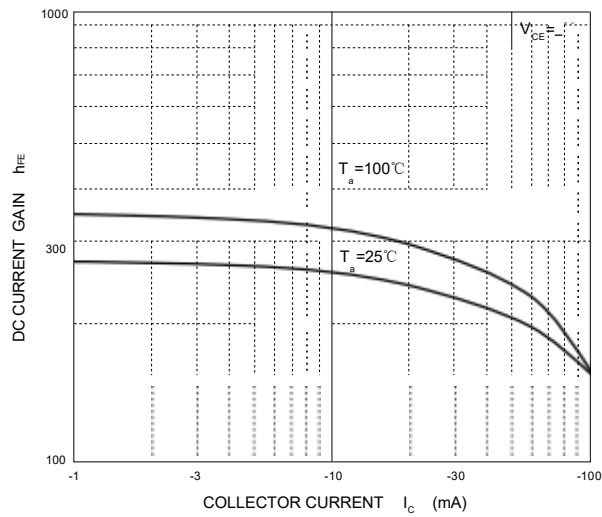
ON Characteristics



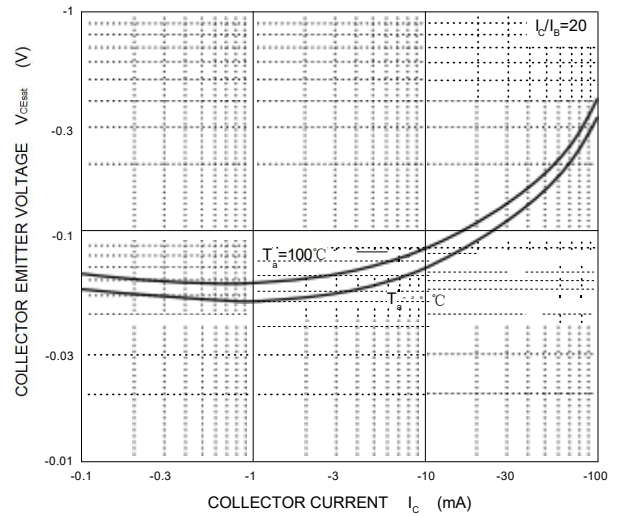
OFF Characteristics



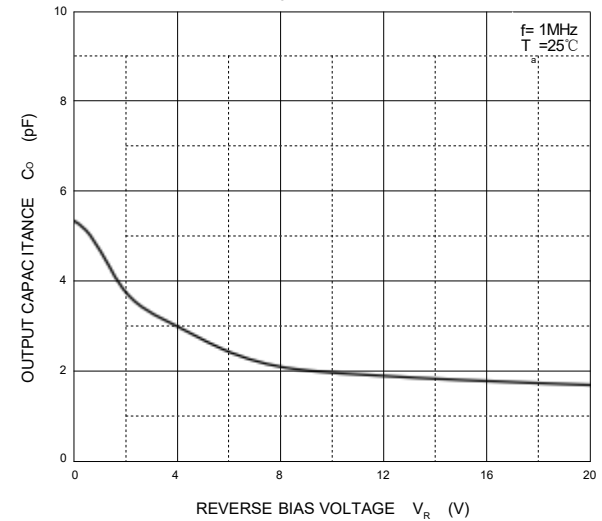
$h_{FE}$  —  $I_c$



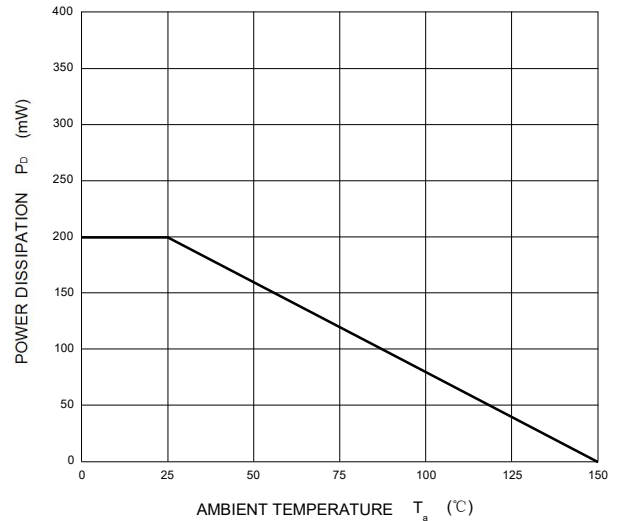
$V_{CEsat}$  —  $I_c$



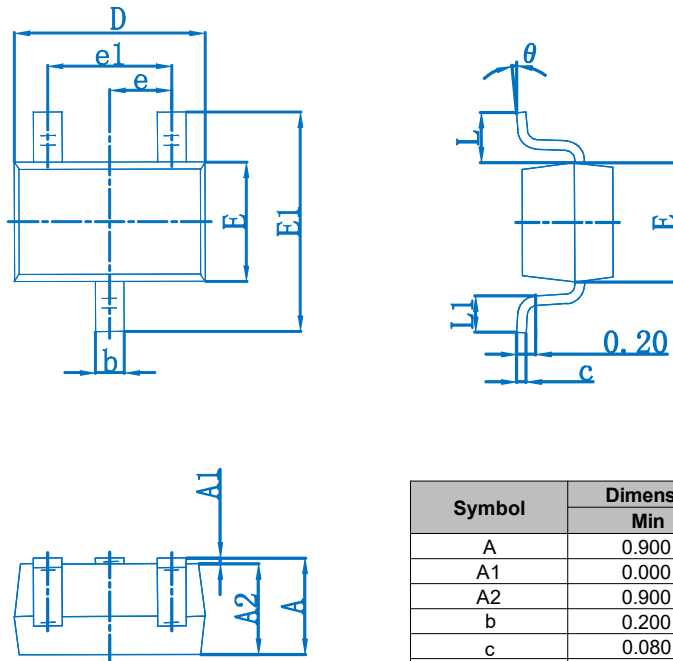
$C_o$  —  $V_R$



$P_D$  —  $T_a$

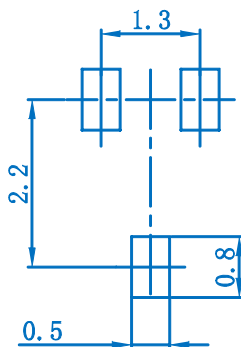


## SOT-323 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.200                     | 0.400 | 0.008                | 0.016 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.450 | 0.085                | 0.096 |
| e      | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF                 |       | 0.021 REF            |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-323 Suggested Pad Layout



### Note:

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