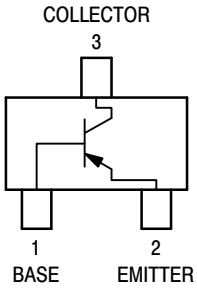
# PNP Silicon General Purpose High Voltage Transistor

# MSB92T1G

This PNP Silicon Planar Transistor is designed for general purpose amplifier applications. This device is housed in the SC−59 package which is designed for low power surface mount applications.




### Features

- This is a Pb−Free Device

### MAXIMUM RATINGS ($T_A$ = 25°C)

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{(BR)CBO}$ | −300 | Vdc |
| Collector-Emitter Voltage | $V_{(BR)CEO}$ | −300 | Vdc |
| Emitter-Base Voltage | $V_{(BR)EBO}$ | −5.0 | Vdc |
| Collector Current − Continuous | $I_C$ | 150 | mAdc |

### THERMAL CHARACTERISTICS

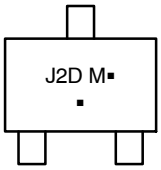
| Rating | Symbol | Max | Unit |
|---|---|---|---|
| Power Dissipation (Note 1) | $P_D$ | 150 | mW |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55 ~ +150 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Device mounted on a FR-4 glass epoxy printed circuit board using the minimum recommended footprint.

### MARKING DIAGRAM

**SC−59**
**CASE 318D**
**STYLE 1**




J2D = Device Marking Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device | Package | Shipping† |
|---|---|---|
| MSB92T1G | SC−59 (Pb−Free) | 3000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Collector-Emitter Breakdown Voltage ($I_C$ = −1.0 mAdc, $I_B$ = 0) | $V_{(BR)CEO}$ | −300 | – | Vdc |
| Collector-Base Breakdown Voltage ($I_C$ = −100 μAdc, $I_E$ = 0) | $V_{(BR)CBO}$ | −300 | – | Vdc |
| Emitter-Base Breakdown Voltage ($I_E$ = −100 μAdc, $I_E$ = 0) | $V_{(BR)EBO}$ | −5.0 | – | Vdc |
| Collector-Base Cutoff Current ($V_{CB}$ = −200 Vdc, $I_E$ = 0) | $I_{CBO}$ | – | −0.25 | μA |
| Emitter−Base Cutoff Current ($V_{EB}$ = −3.0 Vdc, $I_B$ = 0) | $I_{EBO}$ | – | −0.1 | μA |
| DC Current Gain (Note 2)<br>($V_{CE}$ = −10 Vdc, $I_C$ = −1.0 mAdc)<br>($V_{CE}$ = −10 Vdc, $I_C$ = −10 mAdc)<br>($V_{CE}$ = −10 Vdc, $I_C$ = −30 mAdc) | <br>$h_{FE1}$<br>$h_{FE2}$<br>$h_{FE3}$ | <br>25<br>40<br>25 | <br>–<br>–<br>– | – |
| Collector-Emitter Saturation Voltage ($I_C$ = −20 mAdc, $I_B$ = −2.0 mAdc) | $V_{CE(sat)}$ | – | −0.5 | Vdc |
| Base−Emitter Saturation Voltage ($I_C$ = −20 mAdc, $I_B$ = −2.0 mAdc) | $V_{BE(sat)}$ | – | −0.9 | Vdc |

## SMALL SIGNAL CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| Current−Gain − Bandwidth Product ($I_C$ = −10 mAdc, $V_{CE}$ = −20 Vdc, f = 20 MHz) | $f_T$ | 50 | – | MHz |
| Collector−Base Capacitance ($V_{CB}$ = −20 Vdc, $I_E$ = 0, f = 1.0 MHz) | $C_{cb}$ | – | 6.0 | pF |

2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.



Share Feedback
Your Opinion Matters

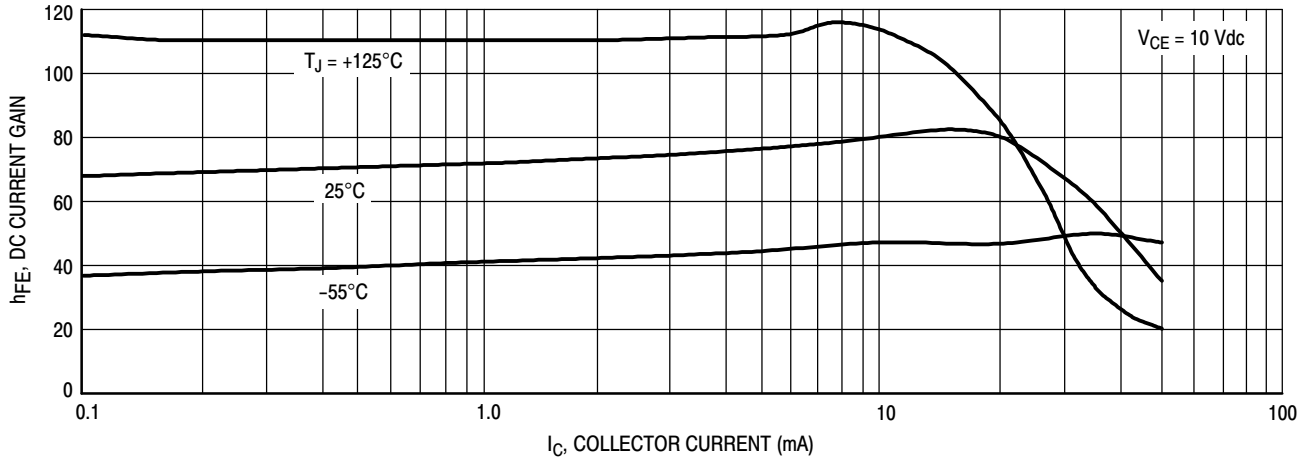


**Figure 1. DC Current Gain**

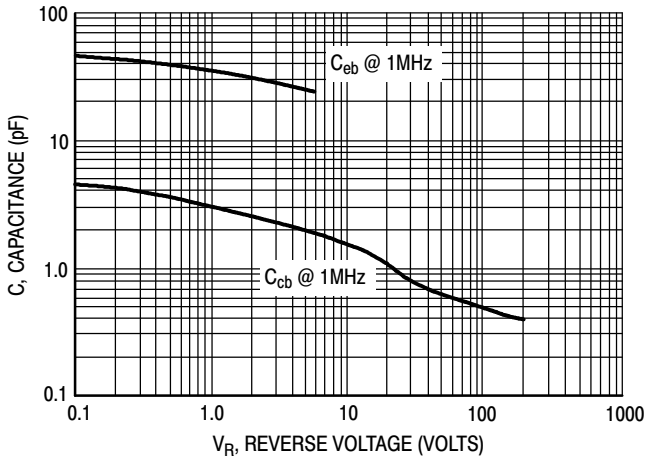


**Figure 2. Capacitance**

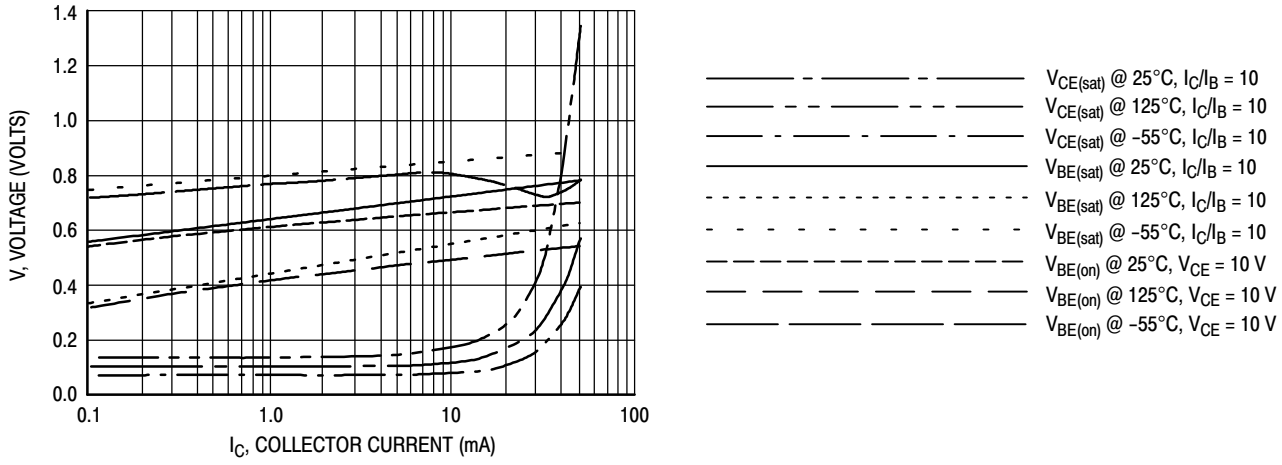


**Figure 3. “ON” Voltages**



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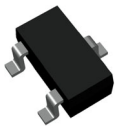
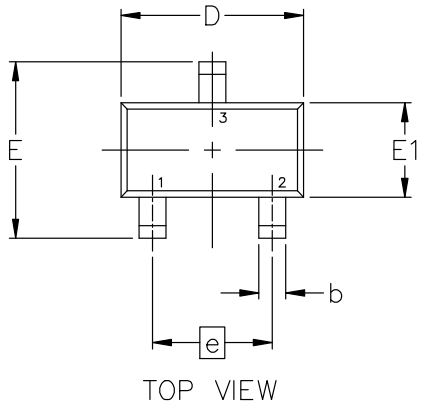
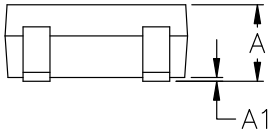


**SC−59−3 2.90x1.50x1.15, 1.90P**
CASE 318D
ISSUE J

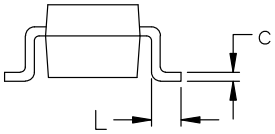
DATE 15 FEB 2024




TOP VIEW




SIDE VIEW

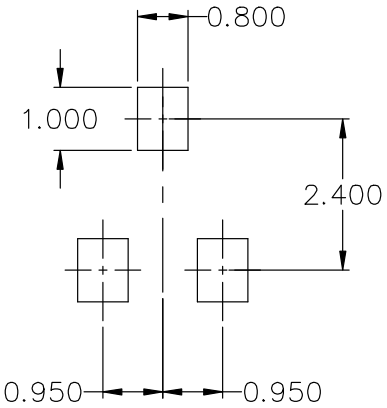



END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5−2018.
2. ALL DIMENSION ARE IN MILLIMETERS.

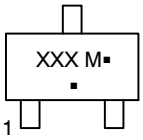
| DIM | MILLIMETERS | | |
|---|---|---|---|
| | MIN. | NOM. | MAX. |
| A | 1.00 | 1.15 | 1.30 |
| A1 | 0.01 | 0.06 | 0.10 |
| b | 0.35 | 0.43 | 0.50 |
| c | 0.09 | 0.14 | 0.18 |
| D | 2.70 | 2.90 | 3.10 |
| E | 2.50 | 2.80 | 3.00 |
| E1 | 1.30 | 1.50 | 1.70 |
| e | 1.90 BSC | | |
| L | 0.20 | 0.40 | 0.60 |




RECOMMENDED MOUNTING FOOTPRINT*

* FOR ADDITIONAL INFORMATION ON OUR Pb−FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

**GENERIC MARKING DIAGRAM***




XXX = Specific Device Code
M = Date Code
▪ = Pb−Free Package*

(*Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N.C.
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 4:
PIN 1. CATHODE
2. N.C.
3. ANODE

STYLE 5:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE/CATHODE

| | | | |
|---|---|---|---|
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| **DESCRIPTION:** | **SC−59−3 2.90x1.50x1.15, 1.90P** | | **PAGE 1 OF 1** |

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