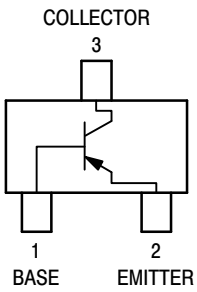
PNP Silicon General Purpose High Voltage Transistor

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

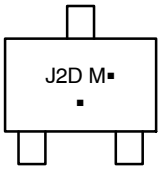
Rating	Symbol	Max	Unit
Power Dissipation (Note 1)	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	−55 ~ +150	°C

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.

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) (V_{CE} = −10 Vdc, I_C = −1.0 mAdc) (V_{CE} = −10 Vdc, I_C = −10 mAdc) (V_{CE} = −10 Vdc, I_C = −30 mAdc)	 h_{FE1} h_{FE2} h_{FE3}	 25 40 25	 – – –	–
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%.

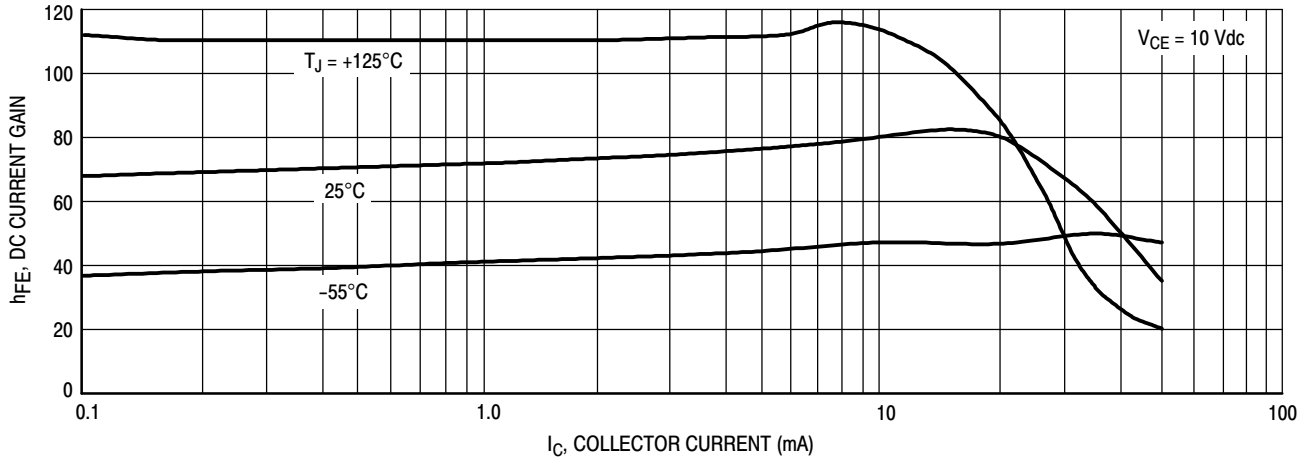


Figure 1. DC Current Gain

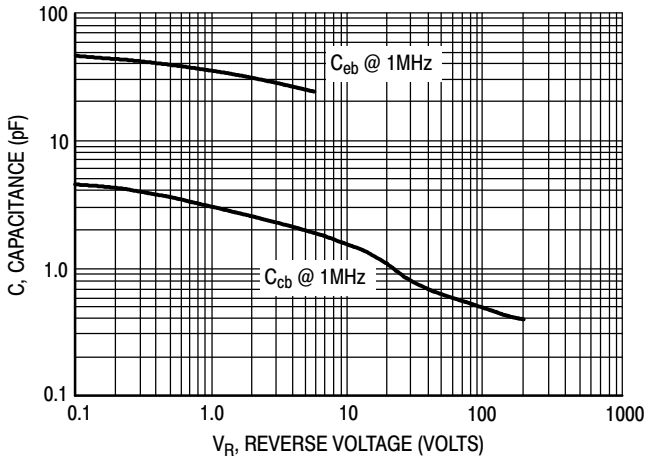


Figure 2. Capacitance

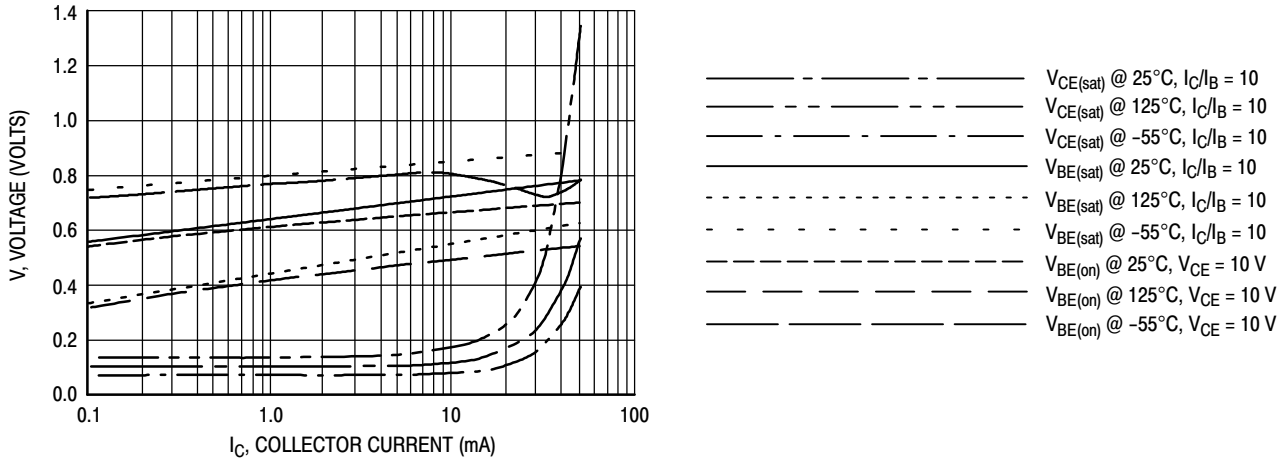
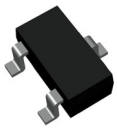
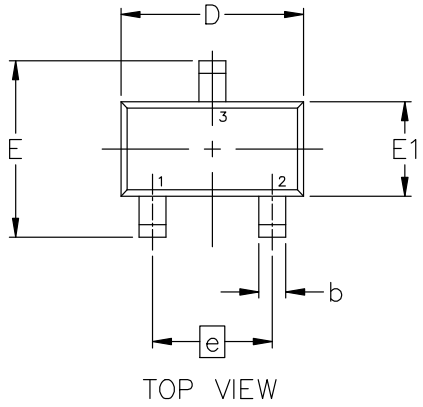


Figure 3. “ON” Voltages

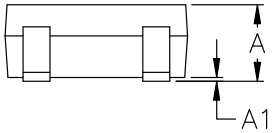


SC−59−3 2.90x1.50x1.15, 1.90P
CASE 318D
ISSUE J

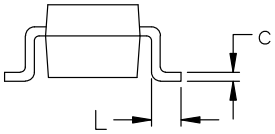
DATE 15 FEB 2024



TOP VIEW



SIDE VIEW

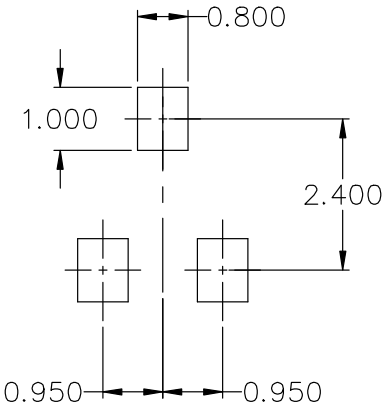


END VIEW

NOTES:

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

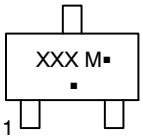
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	1.00	1.15	1.30
A1	0.01	0.06	0.10
b	0.35	0.43	0.50
c	0.09	0.14	0.18
D	2.70	2.90	3.10
E	2.50	2.80	3.00
E1	1.30	1.50	1.70
e	1.90 BSC		
L	0.20	0.40	0.60



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**

ADDITIONAL INFORMATION

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