MSB92WT1, MSB92AWT1

Preferred Device

PNP Silicon General Purpose High Voltage Transistor

This PNP Silicon Planar Transistor is designed for general purpose amplifier applications. This device is housed in the SC-70/SOT-323 package which is designed for low power surface mount applications.

Features

- Pb−Free Packages are Available

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	500	mAdc
Electrostatic Discharge	ESD	MBM > 16,000, MM > 2,000	V

THERMAL CHARACTERISTICS

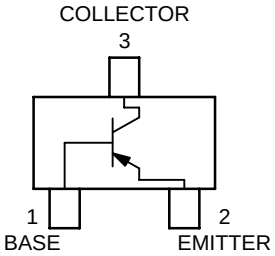
Rating	Symbol	Max	Unit
Power Dissipation (Note 1)	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

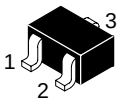
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

ON Semiconductor®

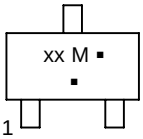
http://onsemi.com





SC−70 (SOT−323)
CASE 419
STYLE 3

MARKING DIAGRAM



xx = Device Code
x= 2D or D2
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)
*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
MSB92WT1	SC−70/ SOT−323	3000/Tape & Reel
MSB92WT1G	SC−70/ SOT−323 (Pb−Free)	3000/Tape & Reel
MSB92AWT1	SC−70/ SOT−323	3000/Tape & Reel
MSB92AWT1G	SC−70/ SOT−323 (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.

Preferred devices are recommended choices for future use and best overall value.

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) MSB92WT1: (V_{CE} = −10 Vdc, I_C = −1.0 mAdc) MSB92AWT1: (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_{FE1} h_{FE2} h_{FE3}	 25 120 40 25	 − 200 − −	−
Collector-Emitter Saturation Voltage (Note 2) (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, D.C. ≤ 2%.

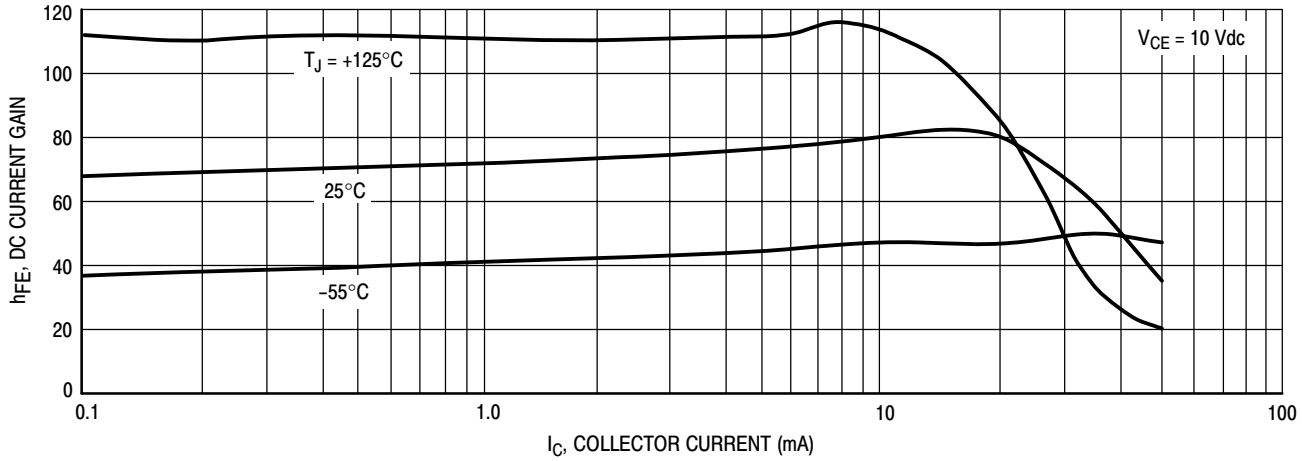


Figure 1. DC Current Gain

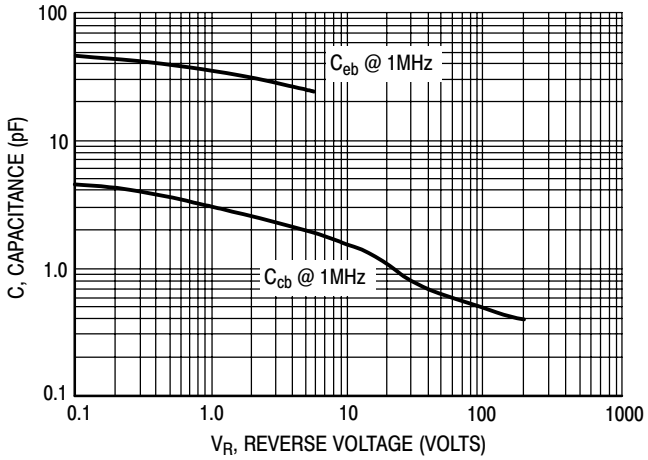


Figure 2. Capacitance

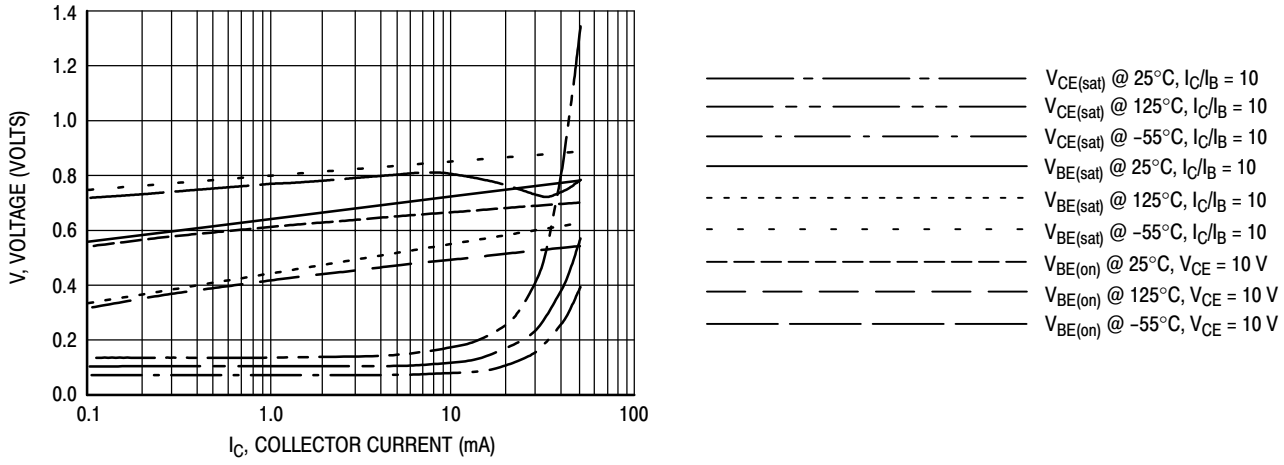
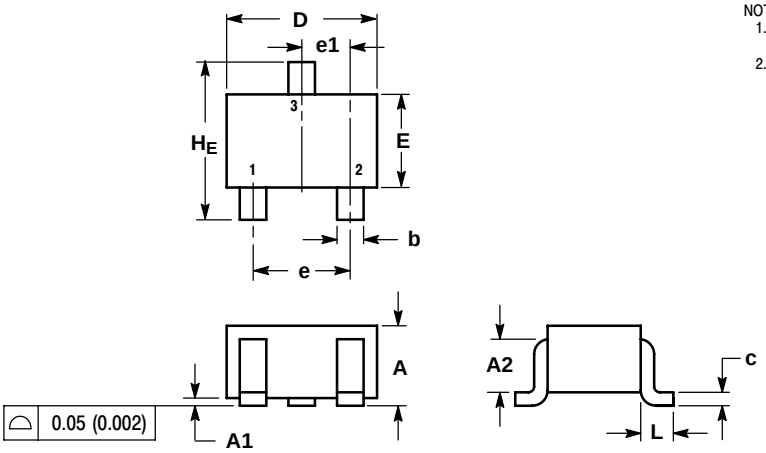


Figure 3. “ON” Voltages

PACKAGE DIMENSIONS

SC−70 (SOT−323)
CASE 419−04
ISSUE M

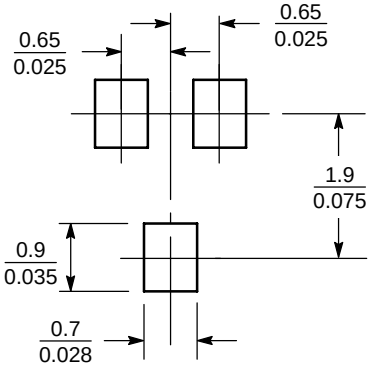


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2		0.7 REF			0.028 REF	
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1		0.65 BSC			0.026 BSC	
L		0.425 REF			0.017 REF	
H_E	2.00	2.10	2.40	0.079	0.083	0.095

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

SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
Phone: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
Fax: 480−829−7709 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
Phone: 81−3−5773−3850

ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.