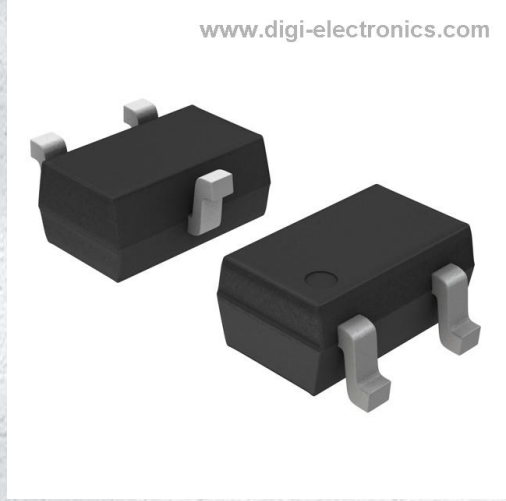
MSB92ASWT1 Datasheet



DiGi Electronics Part Number	MSB92ASWT1-DG
Manufacturer	onsemi
Manufacturer Product Number	MSB92ASWT1
Description	TRANS PNP 300V 0.5A SC70-3
Detailed Description	Bipolar (BJT) Transistor PNP 300 V 500 mA 50MHz 1 50 mW Surface Mount SC-70-3 (SOT323)

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MSB92ASWT1	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	500 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
300 V	500mV @ 2mA, 20mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
250nA (ICBO)	120 @ 1mA, 10V
Power - Max:	Frequency - Transition:
150 mW	50MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SC-70-3 (SOT323)
Base Product Number:	
MSB92	

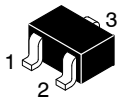
Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0095	

DATA SHEET
www.onsemi.com

PNP Silicon General Purpose High Voltage Transistor

MSB92ASWT1G, MSB92AS1WT1G

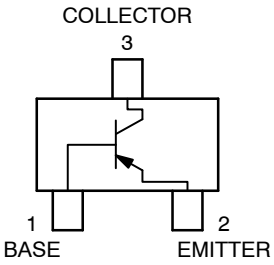


SC−70 (SOT−323)
CASE 419
STYLE 3

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

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant



MAXIMUM RATINGS (T_A = 25°C)

Symbol	Rating	Value	Unit
$V_{(BR)CBO}$	Collector-Base Voltage	−300	Vdc
$V_{(BR)CEO}$	Collector-Emitter Voltage	−300	Vdc
$V_{(BR)EBO}$	Emitter-Base Voltage	−5.0	Vdc
I_C	Collector Current − Continuous	500	mAdc
ESD	ESD Rating: Human Body Model Machine Model	Class 1C Class C	−

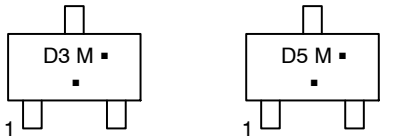
THERMAL CHARACTERISTICS

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

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, 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.

MARKING DIAGRAM



MSB92ASWT1G MSB92AS1WT1G

Dx = Device Code
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†
MSB92ASWT1G	SC−70 (Pb−Free)	3,000/Tape & Reel

DISCONTINUED (Note 1)

MSB92AS1WT1G	SC−70 (Pb−Free)	3,000/Tape & Reel

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

1. **DISCONTINUED:** This device is not recommended for new design. Please contact your **onsemi** representative for information. The most current information on this device may be available on www.onsemi.com.

MSB92ASWT1G, MSB92AS1WT1G

ELECTRICAL CHARACTERISTICS

Symbol	Characteristic	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C = −1.0 mAdc, I_B = 0)	−300	–	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C = −100 μAdc, I_E = 0)	−300	–	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E = −100 μAdc, I_E = 0)	−5.0	–	Vdc
I_{CBO}	Collector-Base Cutoff Current (V_{CB} = 300 Vdc, I_E = 0)	–	−0.25	μA
I_{EBO}	Emitter−Base Cutoff Current (V_{EB} = −3.0 Vdc, I_B = 0)	–	−0.1	μA
h_{FE1} h_{FE2} h_{FE3}	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)	 120 40 25	 200 – –	–
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 2) (I_C = −20 mAdc, I_B = −2.0 mAdc)	–	−0.5	Vdc
$V_{BE(sat)}$	Base−Emitter Saturation Voltage (I_C = −20 mAdc, I_B = −2.0 mAdc)	–	−0.9	Vdc

SMALL SIGNAL CHARACTERISTICS

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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.

MSB92ASWT1G, MSB92AS1WT1G

TYPICAL CHARACTERISTICS

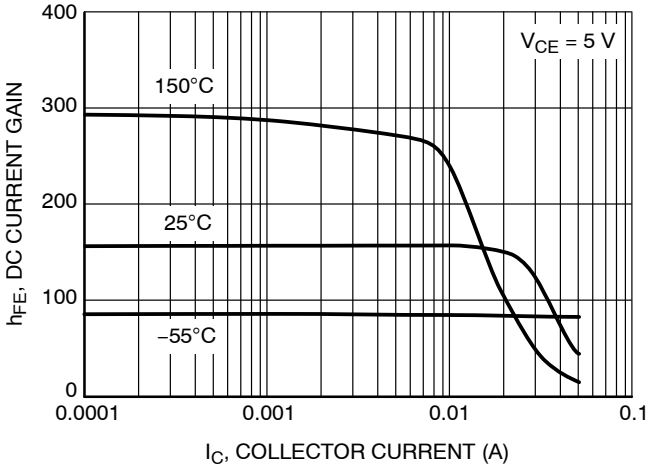


Figure 1. DC Current Gain

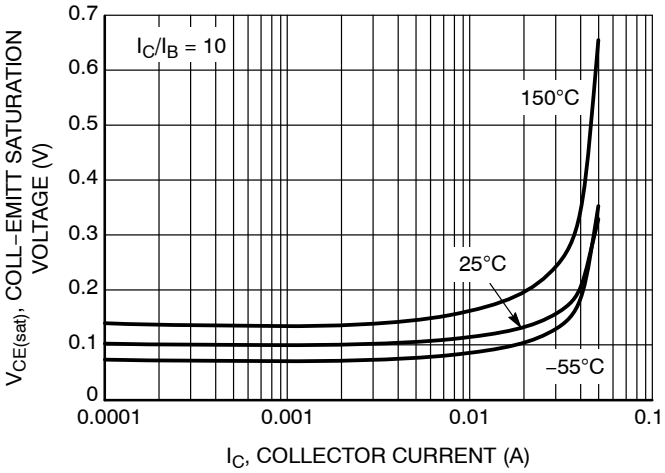


Figure 2. $V_{CE(sat)}$ Curve

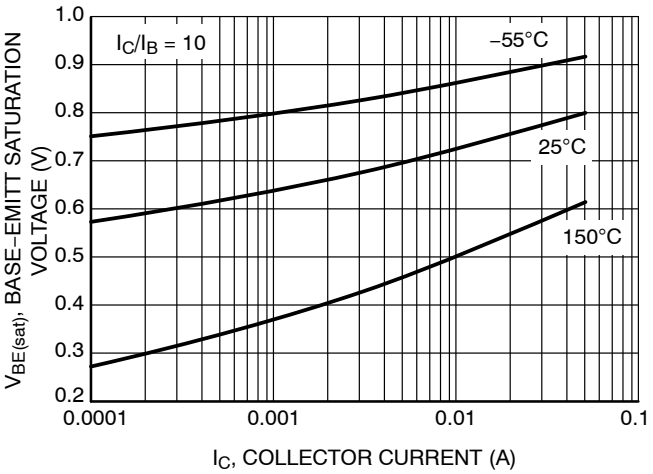


Figure 3. $V_{BE(sat)}$ Curve

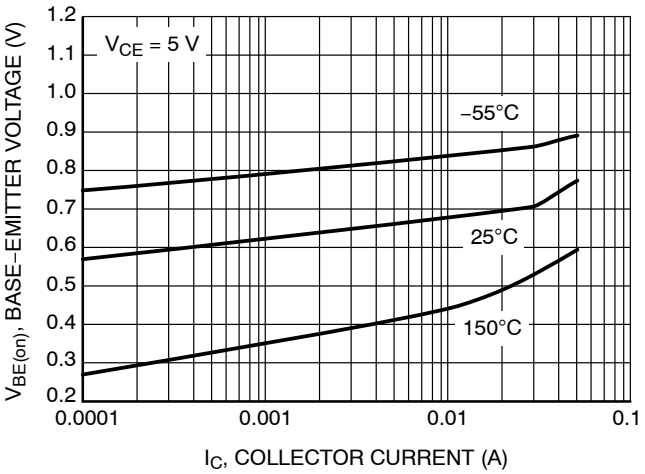


Figure 4. $V_{BE(on)}$ Curve

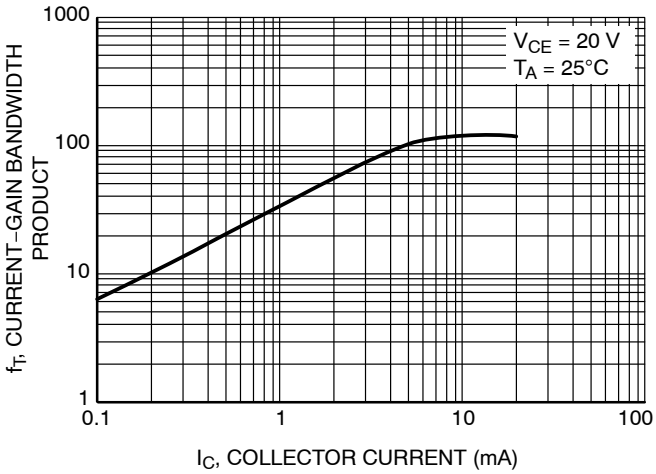


Figure 5. Current−Gain Bandwidth Product

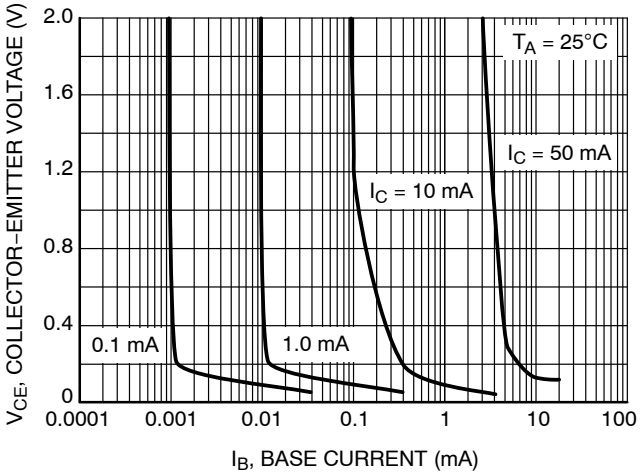


Figure 6. Drain−to−Source Leakage Current vs. Voltage

MSB92ASWT1G, MSB92AS1WT1G

TYPICAL CHARACTERISTICS (continued)

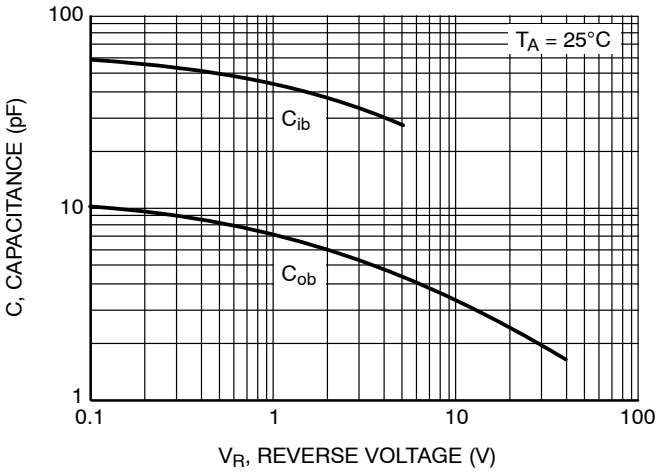


Figure 7. Capacitance

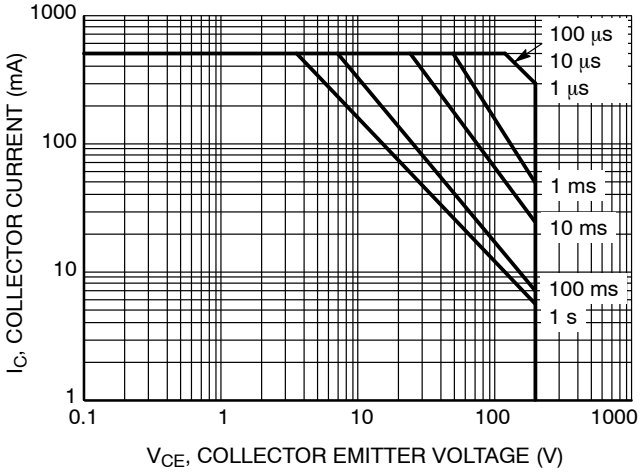
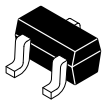


Figure 8. Safe Operating Area

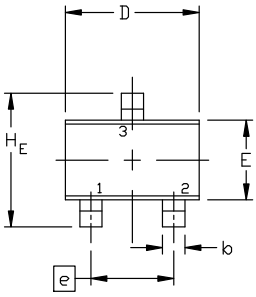
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS



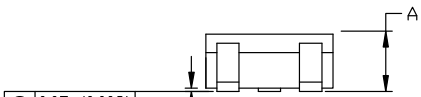
SCALE 4:1

SC−70 (SOT−323)
CASE 419
ISSUE R

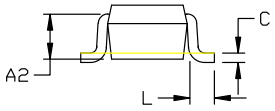
DATE 11 OCT 2022



TOP VIEW



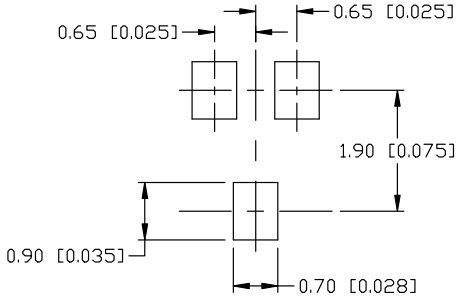
SIDE VIEW



END VIEW

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

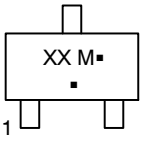
	MILLIMETERS			INCHES		
DIM	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70 REF			0.028 BSC		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.00	2.20	0.071	0.080	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
H_E	2.00	2.10	2.40	0.079	0.083	0.095



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

SOLDERING FOOTPRINT

GENERIC MARKING DIAGRAM



XX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

*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:
CANCELLED

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

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

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

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

STYLE 6:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 7:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE−ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE−CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

DOCUMENT NUMBER:	**98ASB42819B**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red.	
DESCRIPTION:	**SC−70 (SOT−323)**		**PAGE 1 OF 1**

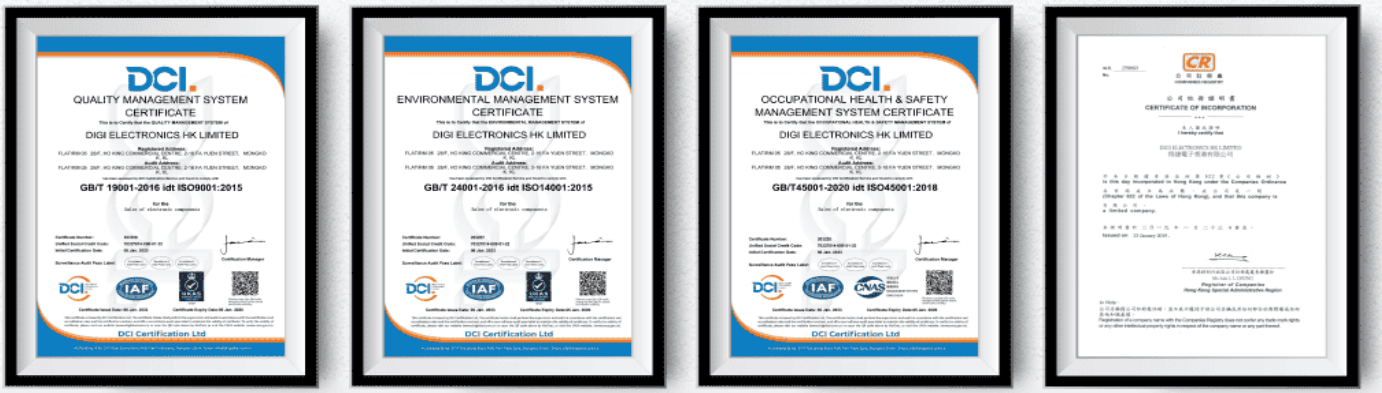
ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we striciy control the quality of products and services. Welcome your RFQ to Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.