



**THE DATASHEET OF
MSB92ASWT1G**



MSB92ASWT1G, MSB92AS1WT1G

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

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

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
ESD Rating: Human Body Model Machine Model	ESD	Class 1C Class C	–

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

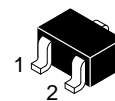
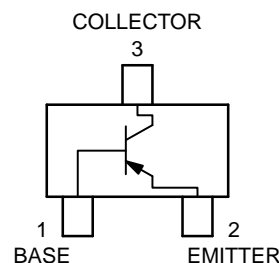
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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



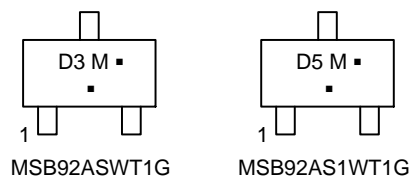
ON Semiconductor®

www.onsemi.com



SC-70 (SOT-323)
CASE 419
STYLE 3

MARKING DIAGRAM



- 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)	3000/Tape & Reel
MSB92AS1WT1G	SC-70 (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.

MSB92ASWT1G, MSB92AS1WT1G

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 ($I_C = -100$ μ Adc, $I_E = 0$)	$V_{(BR)CBO}$	-300	-	Vdc
Emitter-Base Breakdown Voltage ($I_E = -100$ μ Adc, $I_C = 0$)	$V_{(BR)EBO}$	-5.0	-	Vdc
Collector-Base Cutoff Current ($V_{CB} = 300$ Vdc, $I_E = 0$)	I_{CBO}	-	-0.25	μ A
Emitter-Base Cutoff Current ($V_{EB} = -3.0$ Vdc, $I_B = 0$)	I_{EBO}	-	-0.1	μ A
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}	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

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 μ s, D.C. $\leq 2\%$.

MSB92ASWT1G, MSB92AS1WT1G

TYPICAL CHARACTERISTICS

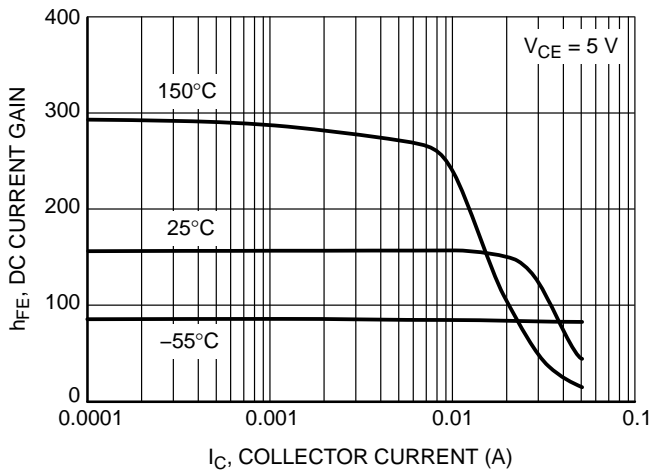


Figure 1. DC Current Gain

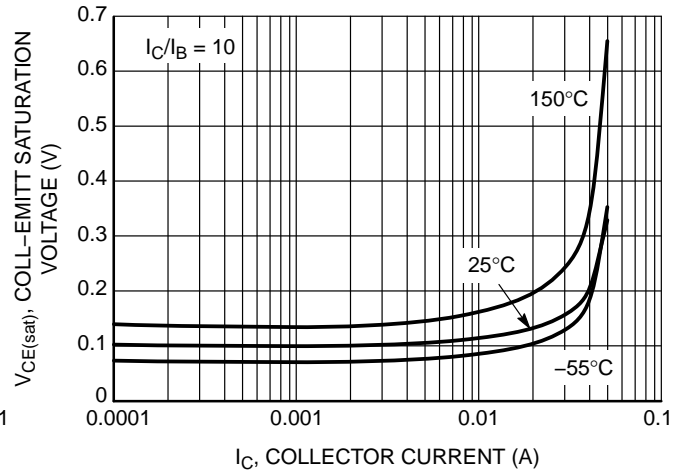


Figure 2. $V_{CE(sat)}$ Curve

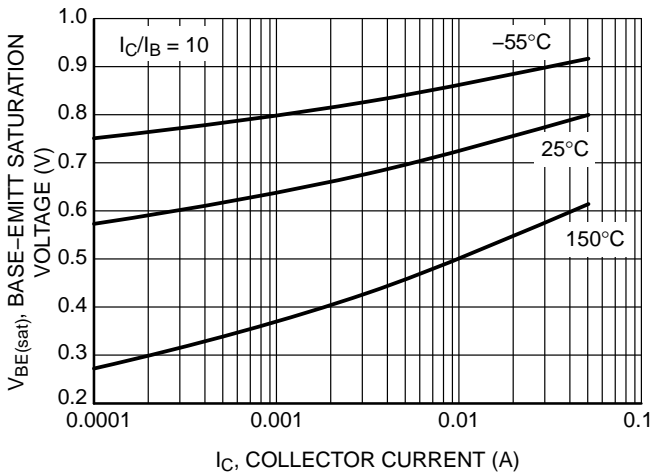


Figure 3. $V_{BE(sat)}$ Curve

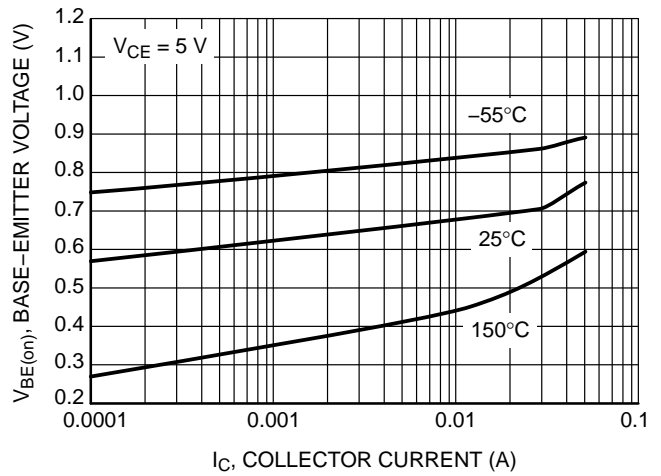


Figure 4. $V_{BE(on)}$ Curve

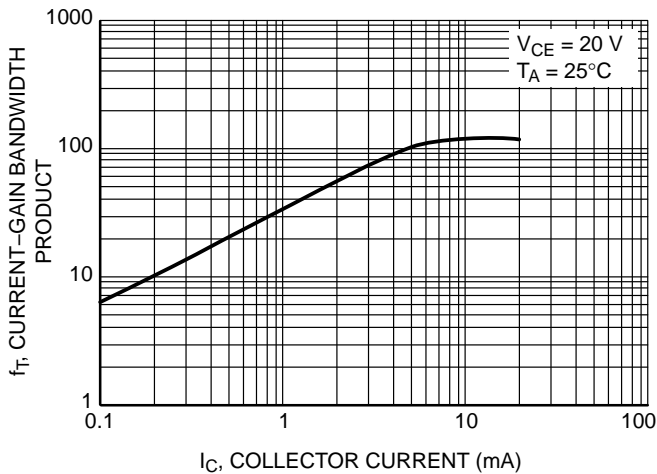


Figure 5. Current-Gain Bandwidth Product

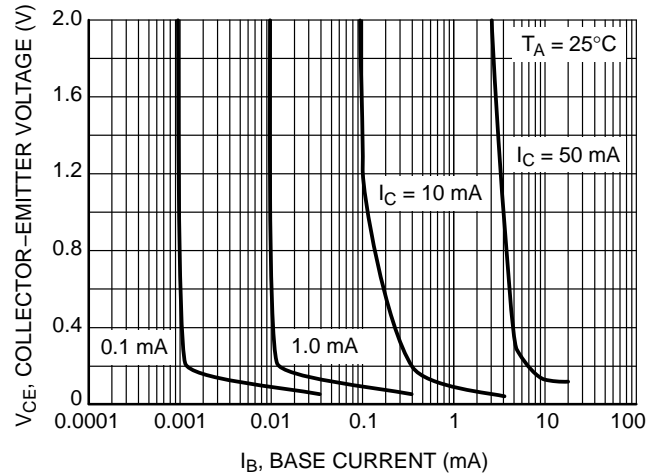


Figure 6. Drain-to-Source Leakage Current vs. Voltage

MSB92ASWT1G, MSB92AS1WT1G

TYPICAL CHARACTERISTICS

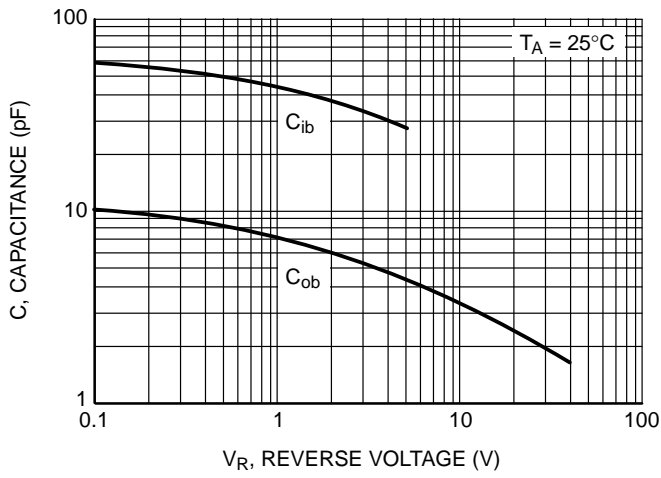


Figure 7. Capacitance

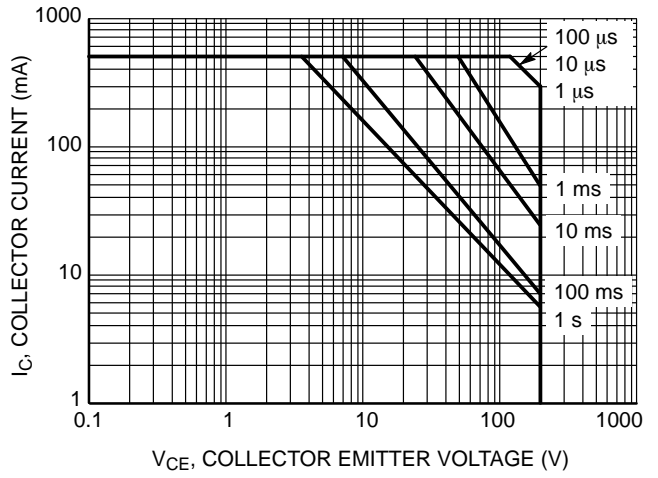
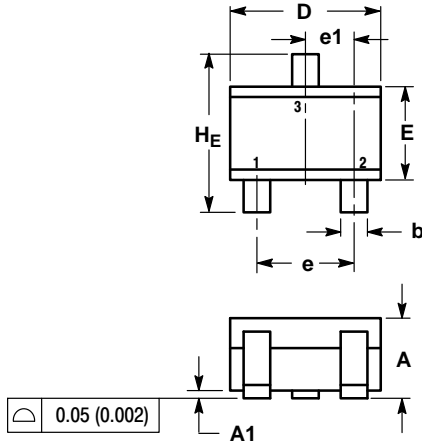


Figure 8. Safe Operating Area

MSB92ASWT1G, MSB92AS1WT1G

PACKAGE DIMENSIONS

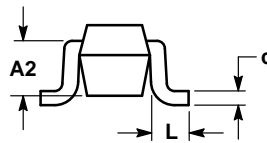
SC-70 (SOT-323)
CASE 419-04
ISSUE N



NOTES:

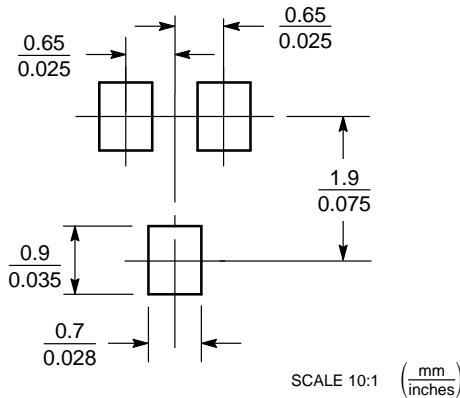
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	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 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	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095



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

SOLDERING 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.

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com
Order Literature: <http://www.onsemi.com/orderlit>
For additional information, please contact your local Sales Representative

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View MSB92ASWT1G on WIN SOURCE](#)

 [ON Semiconductor](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management