

MSD42WT1, MSD42T1

Preferred Device

NPN Silicon General Purpose High Voltage Transistors

This NPN Silicon Planar Transistor is designed for general purpose amplifier applications. This device is housed in the SC-70/SOT-323 and SC-59 packages which are designed for low power surface mount applications.

Features

- Pb-Free Package is 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}	6.0	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

ELECTRICAL CHARACTERISTICS

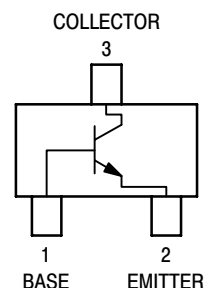
Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I _C = 1.0 mAdc, I _B = 0)	V _{(BR)CEO}	300	-	Vdc
Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0)	V _{(BR)CBO}	300	-	Vdc
Emitter-Base Breakdown Voltage (I _E = 100 μAdc, I _E = 0)	V _{(BR)EBO}	6.0	-	Vdc
Collector-Base Cutoff Current (V _{CB} = 200 Vdc, I _E = 0)	I _{CBO}	-	0.1	μA
Emitter-Base Cutoff Current (V _{EB} = 6.0 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 = 30 mAdc)	h _{FE1} h _{FE2}	25 40	- -	-
Collector-Emitter Saturation Voltage (Note 2) (I _C = 20 mAdc, I _B = 2.0 mAdc)	V _{CE(sat)}	-	0.5	Vdc

- Device mounted on a FR-4 glass epoxy printed circuit board using the minimum recommended footprint.
- Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.



ON Semiconductor®

<http://onsemi.com>

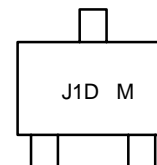
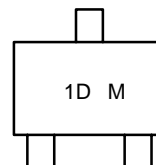


SC-70 (SOT-323)
CASE 419
(SCALE 2:1)



SC-59
CASE 318D
(SCALE 2:1)

MARKING DIAGRAMS



1D = Device Marking Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
MSD42WT1	SC-70/SOT-323	3000/Tape & Reel
MSD42WT1G	SC-70/SOT-323	3000/Tape & Reel
MSD42T1	SC-59	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.

MSD42WT1, MSD42T1

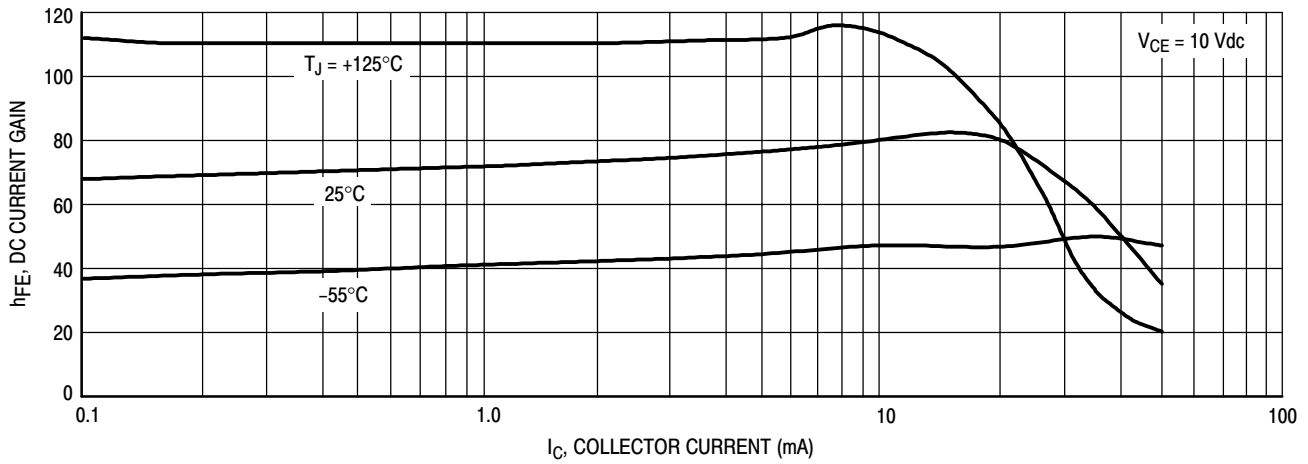


Figure 1. DC Current Gain

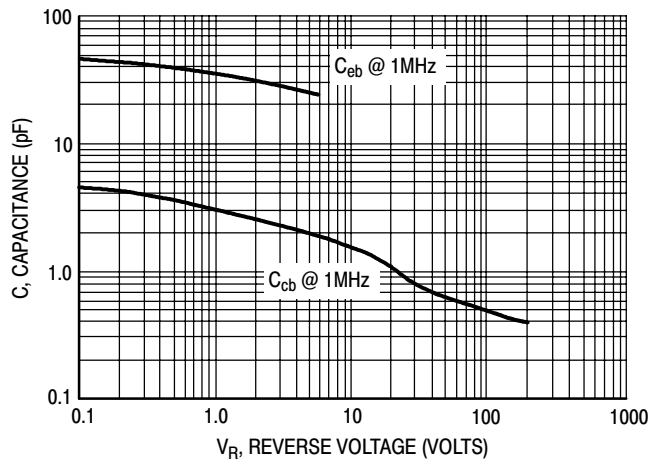


Figure 2. Capacitance

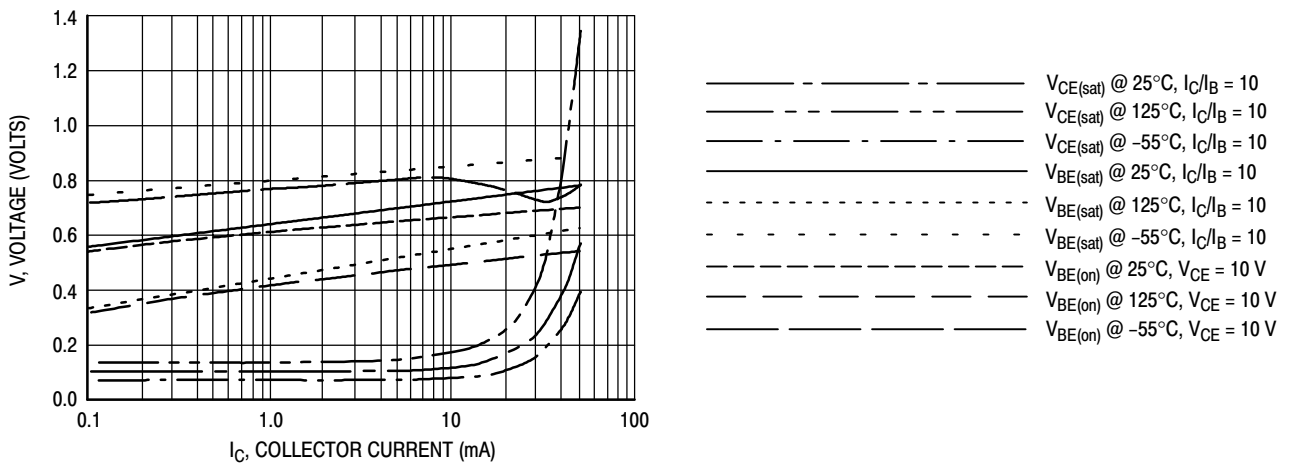
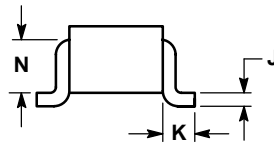
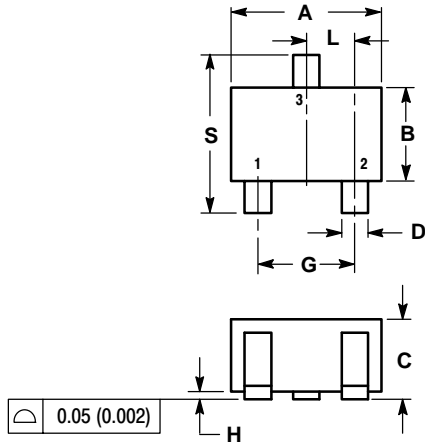


Figure 3. "ON" Voltages

MSD42WT1, MSD42T1

PACKAGE DIMENSIONS

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



NOTES:

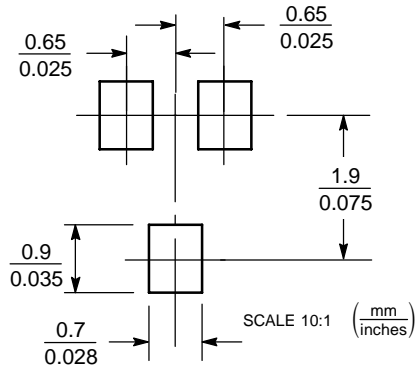
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40

STYLE 3:

- PIN 1. BASE
- EMITTER
- COLLECTOR

SOLDERING FOOTPRINT*



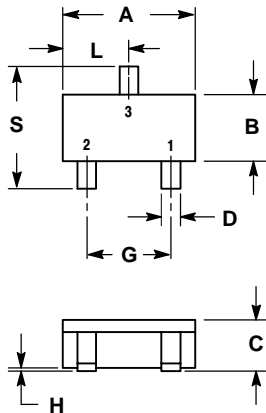
SC-70/SOT-323

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

MSD42WT1, MSD42T1

PACKAGE DIMENSIONS

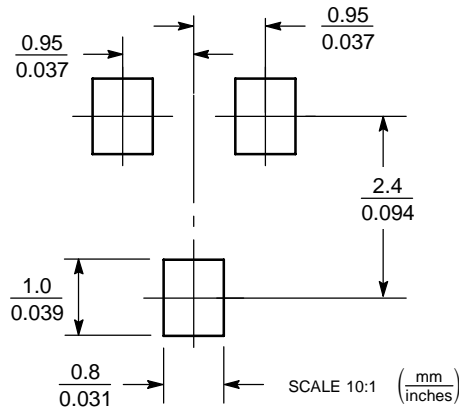
SC-59
CASE 318D-04
ISSUE F



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


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.70	3.10	0.1063	0.1220
B	1.30	1.70	0.0512	0.0669
C	1.00	1.30	0.0394	0.0511
D	0.35	0.50	0.0138	0.0196
G	1.70	2.10	0.0670	0.0826
H	0.013	0.100	0.0005	0.0040
J	0.09	0.18	0.0034	0.0070
K	0.20	0.60	0.0079	0.0236
L	1.25	1.65	0.0493	0.0649
S	2.50	3.00	0.0985	0.1181

SOLDERING FOOTPRINT*



SC-59

*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 registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC 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. "Typical" parameters which may be provided in SCILLC 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. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC 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 SCILLC was negligent regarding the design or manufacture of the part. SCILLC 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
P.O. Box 5163, Denver, Colorado 80217 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

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.

MSD42WT1/D