MUN5114DW1, NSBA114YDXV6, NSBA114YDP6

Dual PNP Bias Resistor Transistors
R1 = 10 kΩ, R2 = 47 kΩ

PNP Transistors with Monolithic Bias Resistor Network

This series of digital transistors is designed to replace a single device and its external resistor bias network. The Bias Resistor Transistor (BRT) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a base−emitter resistor. The BRT eliminates these individual components by integrating them into a single device. The use of a BRT can reduce both system cost and board space.

Features

- S and NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

(T_A = 25°C, common for Q1 and Q2, unless otherwise noted)

Rating	Symbol	Max	Unit
Collector−Base Voltage	V_{CBO}	50	Vdc
Collector−Emitter Voltage	V_{CEO}	50	Vdc
Collector Current – Continuous	I_C	100	mAdc
Input Forward Voltage	$V_{IN(fwd)}$	40	Vdc
Input Reverse Voltage	$V_{IN(rev)}$	6	Vdc

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.

ORDERING INFORMATION

| Device	Package	Shipping†
MUN5114DW1T1G, SMUN5114DW1T1G	SOT−363	3,000 / Tape & Reel
NSBA114YDXV6T1G	SOT−563	4,000 / Tape & Reel
NSBA114YDP6T5G	SOT−963	8,000 / 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.
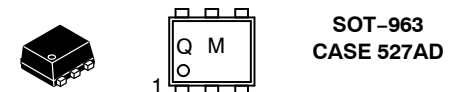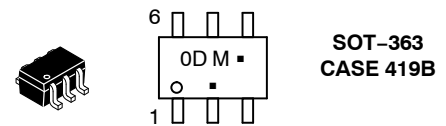
ON Semiconductor®

PIN CONNECTIONS

MARKING DIAGRAMS

SOT−363
CASE 419B

SOT−563
CASE 463A

SOT−963
CASE 527AD
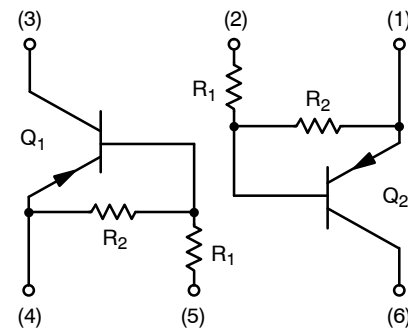
0D/Q	=	Specific Device Code
M	=	Date Code*
▪	=	Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

June, 2017 – Rev. 1

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
MUN5114DW1 (SOT−363) One Junction Heated			

Total Device Dissipation
   T_A = 25°C   (Note 1)
       (Note 2)
  Derate above 25°C   (Note 1)
       (Note 2)
	P_D	187
		256
		1.5
		2.0
			mW
			
			mW/°C

Thermal Resistance, (Note 1) Junction to Ambient (Note 2)	$R_{\theta JA}$	670 490	°C/W
MUN5114DW1 (SOT−363) Both Junction Heated (Note 3)			

Total Device Dissipation
   T_A = 25°C   (Note 1)
       (Note 2)
  Derate above 25°C   (Note 1)
       (Note 2)
	P_D	250
		385
		2.0
		3.0
			mW
			
			mW/°C

Thermal Resistance, (Note 1) Junction to Ambient (Note 2)	$R_{\theta JA}$	493 325	°C/W
Thermal Resistance, (Note 1) Junction to Lead (Note 2)	$R_{\theta JL}$	188 208	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C
NSBA114YDXV6 (SOT−563) One Junction Heated			

Total Device Dissipation
   T_A = 25°C   (Note 1)
  Derate above 25°C   (Note 1)
	P_D	357
		2.9
			mW
			mW/°C

Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	350	°C/W
NSBA114YDXV6 (SOT−563) Both Junction Heated (Note 3)			

Total Device Dissipation
   T_A = 25°C   (Note 1)
  Derate above 25°C   (Note 1)
	P_D	500
		4.0
			mW
			mW/°C

Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	250	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C
NSBA114YDP6 (SOT−963) One Junction Heated			

Total Device Dissipation
   T_A = 25°C   (Note 4)
       (Note 5)
  Derate above 25°C   (Note 4)
       (Note 5)
	P_D	231
		269
		1.9
		2.2
			mW
			
			mW/°C

Thermal Resistance, (Note 4) Junction to Ambient (Note 5)	$R_{\theta JA}$	540 464	°C/W
NSBA114YDP6 (SOT−963) Both Junction Heated (Note 3)			

Total Device Dissipation
   T_A = 25°C   (Note 4)
       (Note 5)
  Derate above 25°C   (Note 4)
       (Note 5)
	P_D	339
		408
		2.7
		3.3
			mW
			
			mW/°C

Thermal Resistance, (Note 4) Junction to Ambient (Note 5)	$R_{\theta JA}$	369 306	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

1. FR−4 @ Minimum Pad.
2. FR−4 @ 1.0 x 1.0 Inch Pad.
3. Both junction heated values assume total power is sum of two equally powered channels.
4. FR−4 @ 100 mm^2, 1 oz. copper traces, still air.
5. FR−4 @ 500 mm^2, 1 oz. copper traces, still air.

ELECTRICAL CHARACTERISTICS (T_A = 25°C, common for Q_1 and Q_2, unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Base Cutoff Current (V_{CB} = 50 V, I_E = 0)	I_{CBO}	–	–	100	nAdc
Collector–Emitter Cutoff Current (V_{CE} = 50 V, I_B = 0)	I_{CEO}	–	–	500	nAdc
Emitter–Base Cutoff Current (V_{EB} = 6.0 V, I_C = 0)	I_{EBO}	–	–	0.2	mAdc
Collector–Base Breakdown Voltage (I_C = 10 µA, I_E = 0)	$V_{(BR)CBO}$	50	–	–	Vdc
Collector–Emitter Breakdown Voltage (Note 6) (I_C = 2.0 mA, I_B = 0)	$V_{(BR)CEO}$	50	–	–	Vdc
ON CHARACTERISTICS					
DC Current Gain (Note 6) (I_C = 5.0 mA, V_{CE} = 10 V)	h_{FE}	80	140	–	
Collector–Emitter Saturation Voltage (Note 6) (I_C = 10 mA, I_B = 0.3 mA)	$V_{CE(sat)}$	–	–	0.25	Vdc
Input Voltage (off) (V_{CE} = 5.0 V, I_C = 100 µA)	$V_{i(off)}$	–	0.7	–	Vdc
Input Voltage (on) (V_{CE} = 0.2 V, I_C = 1.0 mA)	$V_{i(on)}$	–	0.9	–	Vdc
Output Voltage (on) (V_{CC} = 5.0 V, V_B = 2.5 V, R_L = 1.0 kΩ)	V_{OL}	–	–	0.2	Vdc
Output Voltage (off) (V_{CC} = 5.0 V, V_B = 0.5 V, R_L = 1.0 kΩ)	V_{OH}	4.9	–	–	Vdc
Input Resistor	R1	7.0	10	13	kΩ
Resistor Ratio	R_1/R_2	0.17	0.21	0.25	

6. Pulsed Condition: Pulse Width = 300 msec, Duty Cycle ≤ 2%.
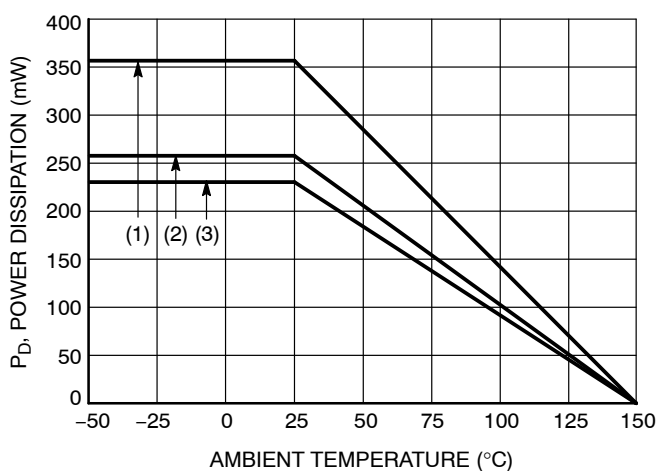
(1) SOT−363; 1.0 x 1.0 inch Pad
(2) SOT−563; Minimum Pad
(3) SOT−963; 100 mm^2, 1 oz. copper trace

Figure 1. Derating Curve

TYPICAL CHARACTERISTICS
MUN5114DW1, NSBA114YDXV6
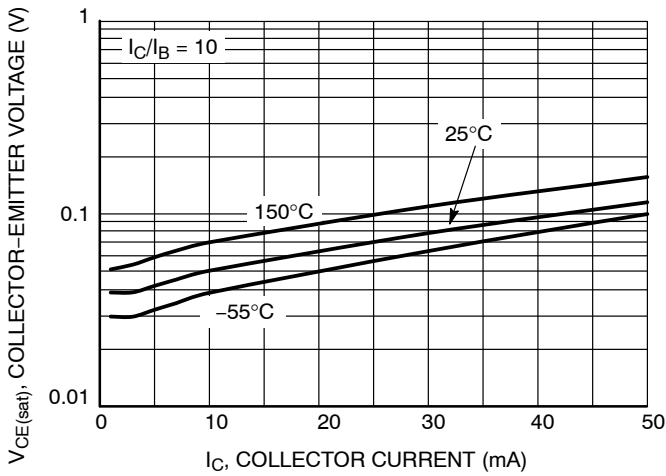
Figure 2. V_CE(sat) vs. I_C
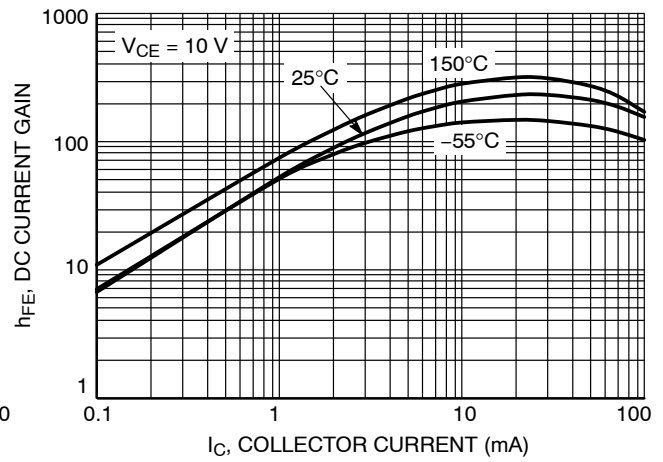
Figure 3. DC Current Gain
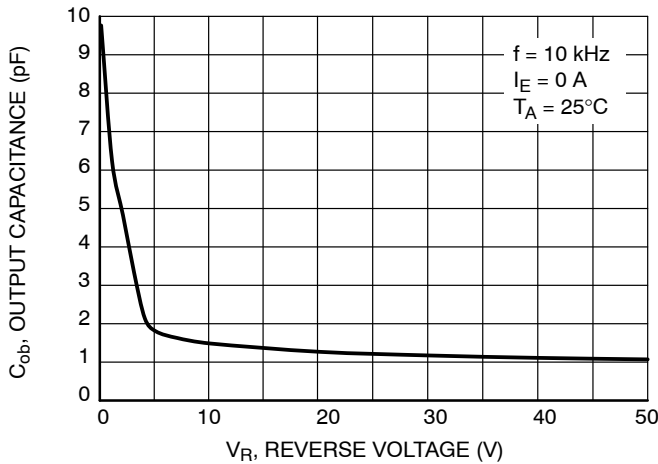
Figure 4. Output Capacitance
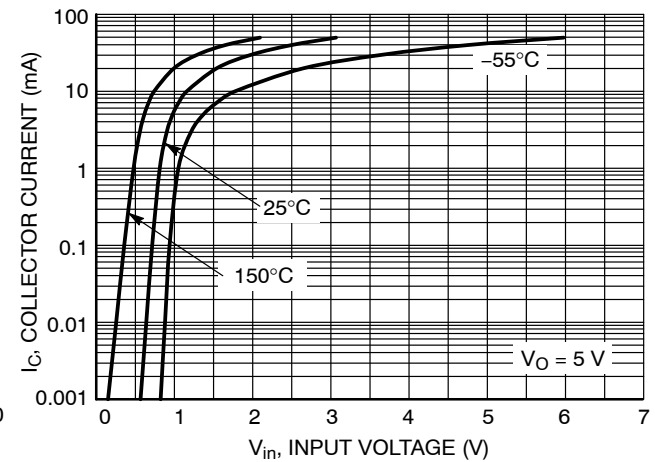
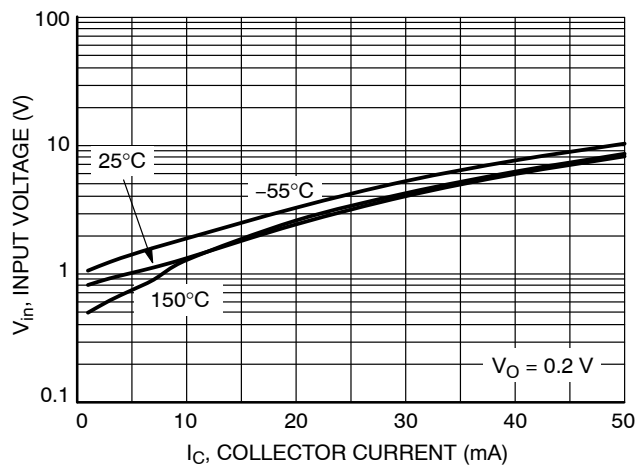Figure 5. Output Current vs. Input Voltage

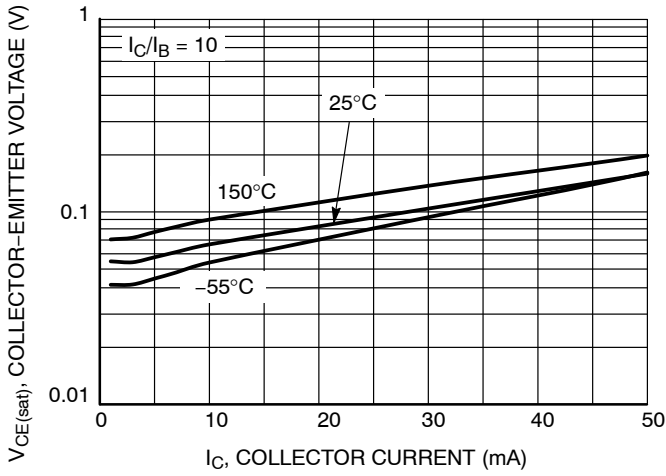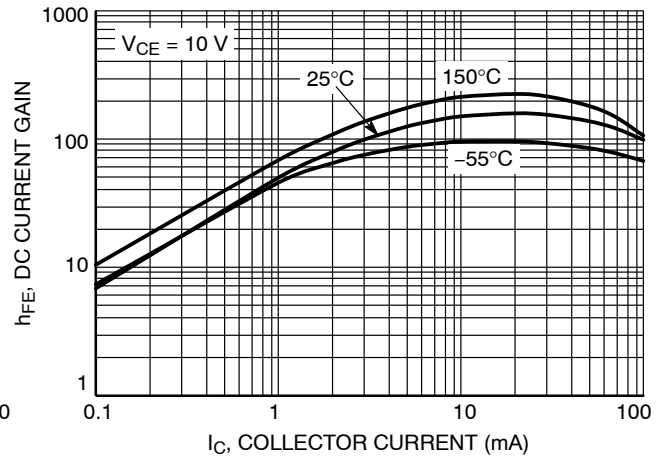Figure 6. Input Voltage vs. Output Current

TYPICAL CHARACTERISTICS
NSBA114YDP6

Figure 7. $V_{CE(sat)}$ vs. I_C
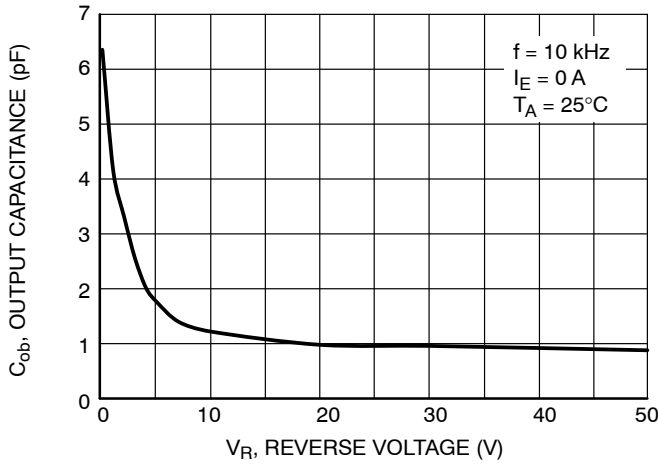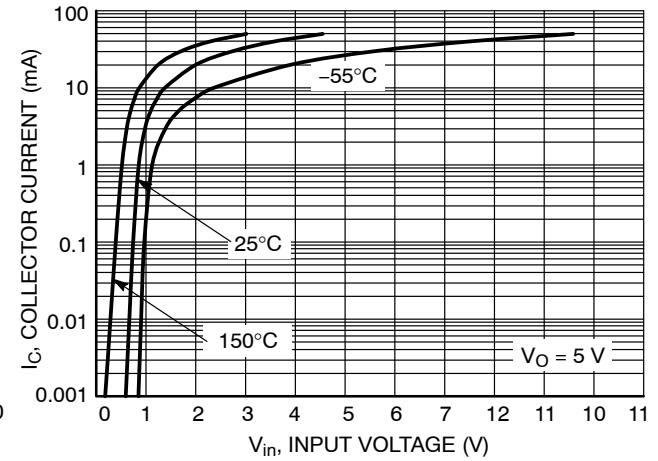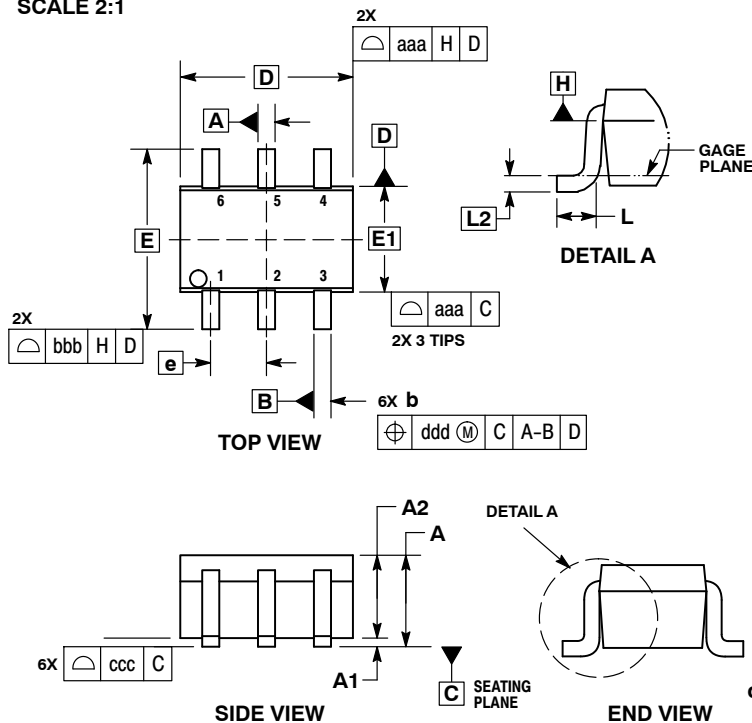
Figure 8. DC Current Gain

Figure 9. Output Capacitance

Figure 10. Output Current vs. Input Voltage
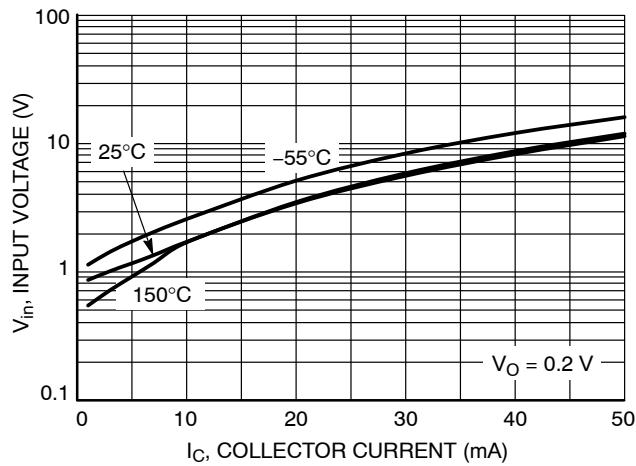
Figure 11. Input Voltage vs. Output Current

1
SCALE 2:1

SC−88/SC70−6/SOT−363
CASE 419B−02
ISSUE Y

DATE 11 DEC 2012

TOP VIEW

2X

aaa H D

A

D

D

E

E1

2X

bbb H D

e

B

6X b

2X 3 TIPS

aaa C

ddd M C A−B D

DETAIL A

H

GAGE PLANE

L2

L

SIDE VIEW

A2

A

6X ccc C

A1

C SEATING PLANE

DETAIL A

END VIEW

c

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER END.
4. DIMENSIONS D AND E1 AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY AND DATUM H.
5. DATUMS A AND B ARE DETERMINED AT DATUM H.
6. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08 AND 0.15 FROM THE TIP.
7. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 TOTAL IN EXCESS OF DIMENSION b AT MAXIMUM MATERIAL CONDITION. THE DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OF THE FOOT.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	−−−	−−−	1.10	−−−	−−−	0.043
A1	0.00	−−−	0.10	0.000	−−−	0.004
A2	0.70	0.90	1.00	0.027	0.035	0.039
b	0.15	0.20	0.25	0.006	0.008	0.010
C	0.08	0.15	0.22	0.003	0.006	0.009
D	1.80	2.00	2.20	0.070	0.078	0.086
E	2.00	2.10	2.20	0.078	0.082	0.086
E1	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.26	0.36	0.46	0.010	0.014	0.018
L2	0.15 BSC			0.006 BSC		
aaa	0.15			0.006		
bbb	0.30			0.012		
ccc	0.10			0.004		
ddd	0.10			0.004		

RECOMMENDED SOLDERING FOOTPRINT*
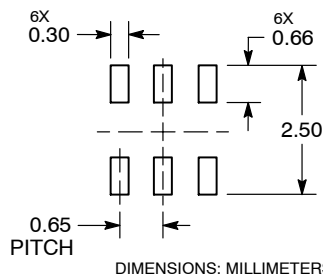
6X
0.30

6X
0.66

2.50

0.65
PITCH

DIMENSIONS: MILLIMETERS

*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*

6

XXXM■

1

XXX = Specific Device Code
M = Date Code*
■ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or position may vary depending upon manufacturing 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.

STYLES ON PAGE 2

DOCUMENT NUMBER:	98ASB42985B	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−88/SC70−6/SOT−363		PAGE 1 OF 2

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

STYLE 2:
CANCELLED

STYLE 3:
CANCELLED

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. COLLECTOR
4. EMITTER
5. BASE
6. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. COLLECTOR
4. EMITTER
5. BASE
6. CATHODE

STYLE 6:
PIN 1. ANODE 2
2. N/C
3. CATHODE 1
4. ANODE 1
5. N/C
6. CATHODE 2

STYLE 7:
PIN 1. SOURCE 2
2. DRAIN 2
3. GATE 1
4. SOURCE 1
5. DRAIN 1
6. GATE 2

STYLE 8:
CANCELLED

STYLE 9:
PIN 1. EMITTER 2
2. EMITTER 1
3. COLLECTOR 1
4. BASE 1
5. BASE 2
6. COLLECTOR 2

STYLE 10:
PIN 1. SOURCE 2
2. SOURCE 1
3. GATE 1
4. DRAIN 1
5. DRAIN 2
6. GATE 2

STYLE 11:
PIN 1. CATHODE 2
2. CATHODE 2
3. ANODE 1
4. CATHODE 1
5. CATHODE 1
6. ANODE 2

STYLE 12:
PIN 1. ANODE 2
2. ANODE 2
3. CATHODE 1
4. ANODE 1
5. ANODE 1
6. CATHODE 2

STYLE 13:
PIN 1. ANODE
2. N/C
3. COLLECTOR
4. EMITTER
5. BASE
6. CATHODE

STYLE 14:
PIN 1. VREF
2. GND
3. GND
4. IOUT
5. VEN
6. VCC

STYLE 15:
PIN 1. ANODE 1
2. ANODE 2
3. ANODE 3
4. CATHODE 3
5. CATHODE 2
6. CATHODE 1

STYLE 16:
PIN 1. BASE 1
2. EMITTER 2
3. COLLECTOR 2
4. BASE 2
5. EMITTER 1
6. COLLECTOR 1

STYLE 17:
PIN 1. BASE 1
2. EMITTER 1
3. COLLECTOR 2
4. BASE 2
5. EMITTER 2
6. COLLECTOR 1

STYLE 18:
PIN 1. VIN1
2. VCC
3. VOUT2
4. VIN2
5. GND
6. VOUT1

STYLE 19:
PIN 1. I OUT
2. GND
3. GND
4. V CC
5. V EN
6. V REF

STYLE 20:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR

STYLE 21:
PIN 1. ANODE 1
2. N/C
3. ANODE 2
4. CATHODE 2
5. N/C
6. CATHODE 1

STYLE 22:
PIN 1. D1 (i)
2. GND
3. D2 (i)
4. D2 (c)
5. VBUS
6. D1 (c)

STYLE 23:
PIN 1. Vn
2. CH1
3. Vp
4. N/C
5. CH2
6. N/C

STYLE 24:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

STYLE 25:
PIN 1. BASE 1
2. CATHODE
3. COLLECTOR 2
4. BASE 2
5. EMITTER
6. COLLECTOR 1

STYLE 26:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 27:
PIN 1. BASE 2
2. BASE 1
3. COLLECTOR 1
4. EMITTER 1
5. EMITTER 2
6. COLLECTOR 2

STYLE 28:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 29:
PIN 1. ANODE
2. ANODE
3. COLLECTOR
4. EMITTER
5. BASE/ANODE
6. CATHODE

STYLE 30:
PIN 1. SOURCE 1
2. DRAIN 2
3. DRAIN 2
4. SOURCE 2
5. GATE 1
6. DRAIN 1

Note: Please refer to datasheet for style callout. If style type is not called out in the datasheet refer to the device datasheet pinout or pin assignment.

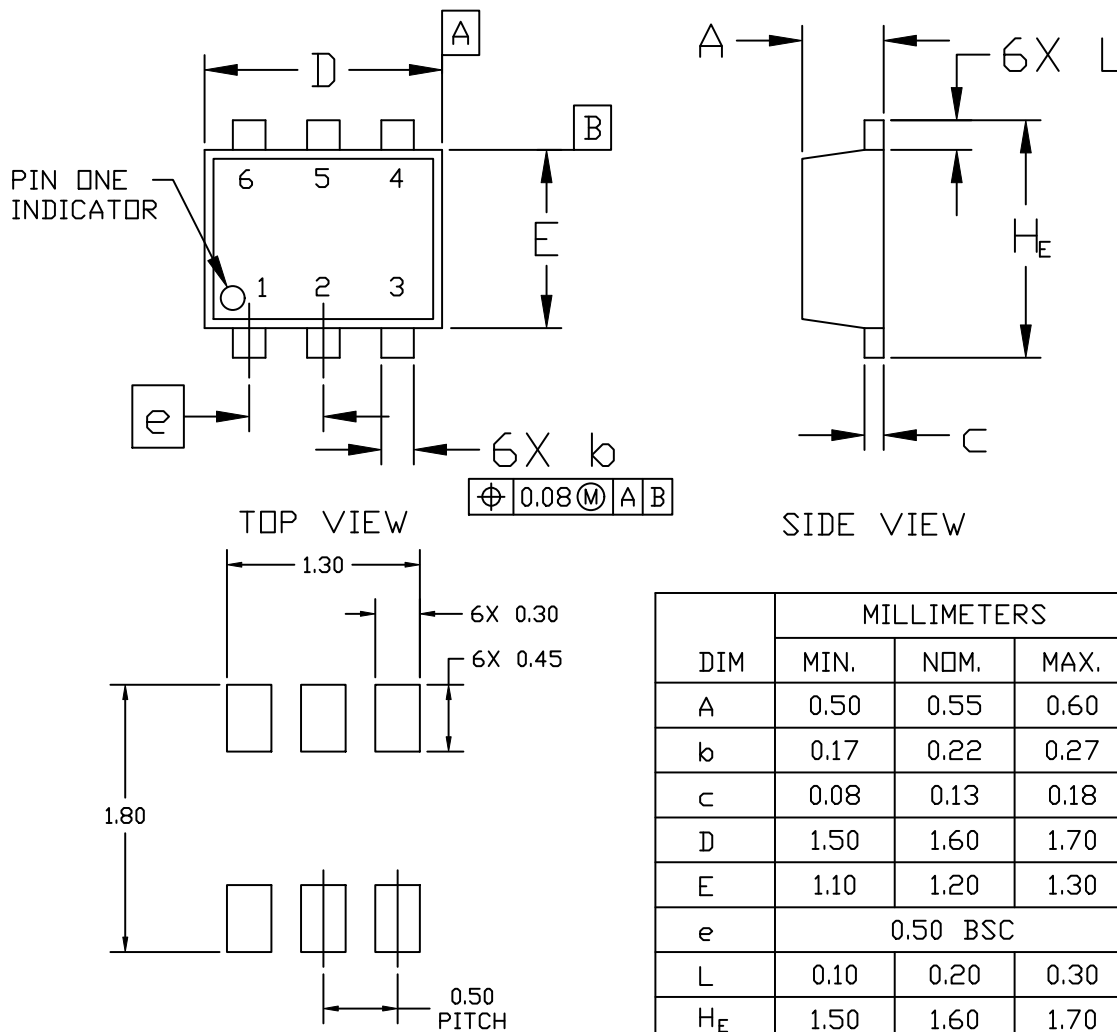| DOCUMENT NUMBER:	98ASB42985B	
DESCRIPTION:	SC−88/SC70−6/SOT−363	PAGE 2 OF 2

SOT−563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

6

1

SCALE 4:1

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

TOP VIEW

PIN ONE INDICATOR

6X b

$\oplus$ | 0.08 (M) | A | B

SIDE VIEW

6X L

H_E

A

c

1.30

6X 0.30

6X 0.45

1.80

0.50 PITCH

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.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
E	1.10	1.20	1.30
e	0.50 BSC		
L	0.10	0.20	0.30
H_E	1.50	1.60	1.70

DOCUMENT NUMBER:	98AON11126D	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	
DESCRIPTION:	**SOT−563, 6 LEAD**		PAGE 1 OF 2

SOT−563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

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

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

STYLE 3:
PIN 1. CATHODE 1
    2. CATHODE 1
    3. ANODE/ANODE 2
    4. CATHODE 2
    5. CATHODE 2
    6. ANODE/ANODE 1

STYLE 4:
PIN 1. COLLECTOR
    2. COLLECTOR
    3. BASE
    4. EMITTER
    5. COLLECTOR
    6. COLLECTOR

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

STYLE 6:
PIN 1. CATHODE
    2. ANODE
    3. CATHODE
    4. CATHODE
    5. CATHODE
    6. CATHODE

STYLE 7:
PIN 1. CATHODE
    2. ANODE
    3. CATHODE
    4. CATHODE
    5. ANODE
    6. CATHODE

STYLE 8:
PIN 1. DRAIN
    2. DRAIN
    3. GATE
    4. SOURCE
    5. DRAIN
    6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
    2. GATE 1
    3. DRAIN 2
    4. SOURCE 2
    5. GATE 2
    6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
    2. N/C
    3. CATHODE 2
    4. ANODE 2
    5. N/C
    6. ANODE 1

STYLE 11:
PIN 1. EMITTER 2
    2. BASE 2
    3. COLLECTOR 1
    4. EMITTER 1
    5. BASE 1
    6. COLLECTOR 2

GENERIC
MARKING DIAGRAM*
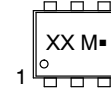
XX = Specific Device Code
M = Month Code
▪ = Pb−Free Package

*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.

SOT−963
CASE 527AD−01
ISSUE E

DATE 09 FEB 2010

SCALE 4:1
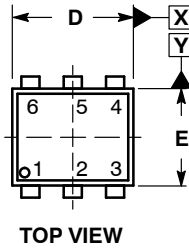
TOP VIEW
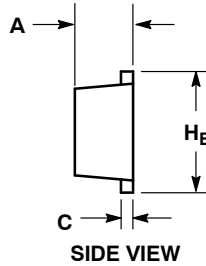
SIDE VIEW

BOTTOM VIEW

$\bigoplus$ | 0.08 | X | Y

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.34	0.37	0.40
b	0.10	0.15	0.20
C	0.07	0.12	0.17
D	0.95	1.00	1.05
E	0.75	0.80	0.85
e	0.35 BSC		
H_E	0.95	1.00	1.05
L	0.19 REF		
L2	0.05	0.10	0.15

GENERIC MARKING DIAGRAM*

XM
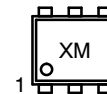
X = Specific Device Code
M = Month Code

*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.

RECOMMENDED MOUNTING FOOTPRINT

6X 0.20
6X 0.35
PACKAGE OUTLINE
1.20
0.35 PITCH
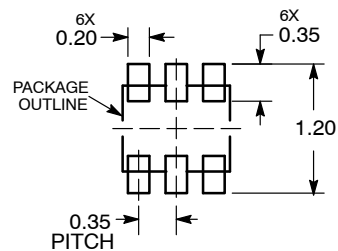
DIMENSIONS: MILLIMETERS

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

STYLE 2:
PIN 1. EMITTER 1
   2. EMITTER2
   3. BASE 2
   4. COLLECTOR 2
   5. BASE 1
   6. COLLECTOR 1

STYLE 3:
PIN 1. CATHODE 1
   2. CATHODE 1
   3. ANODE/ANODE 2
   4. CATHODE 2
   5. CATHODE 2
   6. ANODE/ANODE 1

STYLE 4:
PIN 1. COLLECTOR
   2. COLLECTOR
   3. BASE
   4. EMITTER
   5. COLLECTOR
   6. COLLECTOR

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

STYLE 6:
PIN 1. CATHODE
   2. ANODE
   3. CATHODE
   4. CATHODE
   5. CATHODE
   6. CATHODE

STYLE 7:
PIN 1. CATHODE
   2. ANODE
   3. CATHODE
   4. CATHODE
   5. ANODE
   6. CATHODE

STYLE 8:
PIN 1. DRAIN
   2. DRAIN
   3. GATE
   4. SOURCE
   5. DRAIN
   6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
   2. GATE 1
   3. DRAIN 2
   4. SOURCE 2
   5. GATE 2
   6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
   2. N/C
   3. CATHODE 2
   4. ANODE 2
   5. N/C
   6. ANODE 1

DOCUMENT NUMBER:	98AON26456D	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	SOT−963, 1X1, 0.35P	PAGE 1 OF 1

PUBLICATION ORDERING INFORMATION

◊

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bipolar Transistors - Pre-Biased *category:*

Click to view products by ON Semiconductor *manufacturer:*

Other Similar products are found below :

RN1607(TE85L,F) DTA144WETL DTA144WKAT146 DTC113EET1G DTC115TKAT146 DTC144ECA-TP DTC144VUAT106 MUN5241T1G BCR158WH6327XTSA1 NSBA114TDP6T5G NSBA143ZF3T5G NSBC114YF3T5G NSBC123TF3T5G SMUN5235T1G SMUN5330DW1T1G SSVMUN5312DW1T2G RN1303(TE85L,F) RN4605(TE85L,F) TTEPROTOTYPE79 DDTC114EUAQ-7-F EMH15T2R SMUN2214T3G NSBC114TF3T5G NSBC143ZPDP6T5G NSVMUN5113DW1T3G SMUN5230DW1T1G SMUN5133T1G SMUN2214T1G DTC114EUA-TP NSBA144EF3T5G NSVDTA114EET1G 2SC2223-T1B-A 2SC3912-TB-E SMUN5237DW1T1G SMUN5213DW1T1G SMUN5114DW1T1G SMUN2111T1G NSVDTC144EM3T5G DTC124ECA-TP DTC123TM3T5G DTA114ECA-TP DTA113EM3T5G DCX115EK-7-F DTC113EM3T5G NSVMUN5135DW1T1G NSVDTC143ZM3T5G SMUN5335DW1T2G SMUN5216DW1T1G NSVMUN5312DW1T2G NSVMUN5215DW1T1G