

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

NSBA114EDXV6T1, NSBA114EDXV6T5

Preferred Devices

Dual Bias Resistor Transistors

PNP Silicon Surface Mount Transistors with Monolithic Bias Resistor Network

The BRT (Bias Resistor Transistor) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a base-emitter resistor. These digital transistors are designed to replace a single device and its external resistor bias network. The BRT eliminates these individual components by integrating them into a single device. In the NSBA114EDXV6T1 series, two BRT devices are housed in the SOT-563 package which is ideal for low-power surface mount applications where board space is at a premium.

- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count
- Available in 8 mm, 7 inch Tape and Reel
- Lead Free Solder Plating

MAXIMUM RATINGS

($T_A = 25^\circ\text{C}$ unless otherwise noted, common for Q_1 and Q_2)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	Vdc
Collector-Emitter Voltage	V_{CEO}	-50	Vdc
Collector Current	I_C	-100	mA _{dc}

THERMAL CHARACTERISTICS

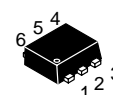
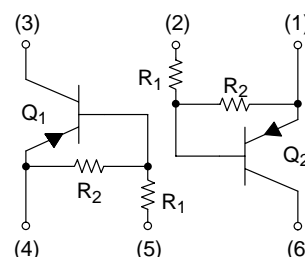
Characteristic (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$	P_D	357 (Note 1)	mW
Derate above 25°C		2.9 (Note 1)	mW/ $^\circ\text{C}$
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	350 (Note 1)	$^\circ\text{C}/\text{W}$
Characteristic (Both Junctions Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$	P_D	500 (Note 1)	mW
Derate above 25°C		4.0 (Note 1)	mW/ $^\circ\text{C}$
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	250 (Note 1)	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

1. FR-4 @ Minimum Pad



ON Semiconductor®

<http://onsemi.com>



SOT-563
CASE 463A
PLASTIC

MARKING DIAGRAM



xx = Specific Device Code
(see table on page 2)
D = Date Code

ORDERING INFORMATION

Device	Package	Shipping
NSBA114EDXV6T1	SOT-563	4 mm pitch 4000/Tape & Reel
NSBA114EDXV6T5	SOT-563	2 mm pitch 8000/Tape & Reel

DEVICE MARKING INFORMATION

See specific marking information in the device marking table on page 2 of this data sheet.

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

NSBA114EDXV6T1, NSBA114EDXV6T5

DEVICE MARKING AND RESISTOR VALUES

Device	Package	Marking	R1 (kΩ)	R2 (kΩ)
NSBA114EDXV6T1	SOT-563	0A	10	10
NSBA124EDXV6T1	SOT-563	0B	22	22
NSBA144EDXV6T1	SOT-563	0C	47	47
NSBA114YDXV6T1	SOT-563	0D	10	47
NSBA114TDXV6T1 (Notes 2)	SOT-563	0E	10	∞
NSBA143TDXV6T1 (Notes 2)	SOT-563	0F	4.7	∞
NSBA113EDXV6T1 (Notes 2)	SOT-563	0G	1.0	1.0
NSBA123EDXV6T1 (Notes 2)	SOT-563	0H	2.2	2.2
NSBA143EDXV6T1 (Notes 2)	SOT-563	0J	4.7	4.7
NSBA143ZDXV6T1 (Notes 2)	SOT-563	0K	4.7	47
NSBA124XDXV6T1 (Notes 2)	SOT-563	0L	22	47
NSBA123JDXV6T1 (Notes 2)	SOT-563	0M	2.2	47
NSBA115EDXV6T1 (Notes 2)	SOT-563	0N	100	100
NSBA144WDXV6T1 (Notes 2)	SOT-563	0P	47	22

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, common for Q₁ and Q₂)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Base Cutoff Current ($V_{CB} = -50\text{ V}$, $I_E = 0$)	I_{CBO}	-	-	-100	nAdc
Collector-Emitter Cutoff Current ($V_{CE} = -50\text{ V}$, $I_B = 0$)	I_{CEO}	-	-	-500	nAdc
Emitter-Base Cutoff Current ($V_{EB} = -6.0\text{ V}$, $I_C = 0$)	I_{EBO}	-	-	-0.5	mAdc
	NSBA114EDXV6T1	-	-	-0.2	
	NSBA124EDXV6T1	-	-	-0.1	
	NSBA144EDXV6T1	-	-	-0.2	
	NSBA114YDXV6T1	-	-	-0.9	
	NSBA114TDXV6T1	-	-	-1.9	
	NSBA143TDXV6T1	-	-	-4.3	
	NSBA113EDXV6T1	-	-	-2.3	
	NSBA123EDXV6T1	-	-	-1.5	
	NSBA143EDXV6T1	-	-	-0.18	
	NSBA143ZDXV6T1	-	-	-0.13	
	NSBA124XDXV6T1	-	-	-0.2	
	NSBA123JDXV6T1	-	-	-0.05	
	NSBA115EDXV6T1	-	-	-0.13	
	NSBA144WDXV6T1	-	-		
Collector-Base Breakdown Voltage ($I_C = -10\ \mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	-50	-	-	Vdc
Collector-Emitter Breakdown Voltage (Note 3) ($I_C = -2.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	-50	-	-	Vdc
ON CHARACTERISTICS (Note 3)					
Collector-Emitter Saturation Voltage ($I_C = -10\text{ mA}$, $I_E = -0.3\text{ mA}$) ($I_C = -10\text{ mA}$, $I_B = -5\text{ mA}$) NSBA113EDXV6T1/NSBA123EDXV6T1 ($I_C = -10\text{ mA}$, $I_B = -1\text{ mA}$) NSBA114TDXV6T1/NSBA143TDXV6T1 NSBA143EDXV6T1/NSBA143ZDXV6T1/NSBA124XDXV6T1	$V_{CE(sat)}$	-	-	-0.25	Vdc

2. New resistor combinations. Updated curves to follow in subsequent data sheets.

3. Pulse Test: Pulse Width < 300 μs, Duty Cycle < 2.0%

NSBA114EDXV6T1, NSBA114EDXV6T5

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

Characteristic	Symbol	Min	Typ	Max	Unit	
ON CHARACTERISTICS (Note 3) (continued)						
DC Current Gain (V _{CE} = -10 V, I _C = -5.0 mA)	NSBA114EDXV6T1 NSBA124EDXV6T1 NSBA144EDXV6T1 NSBA114YDXV6T1 NSBA114TDXV6T1 NSBA143TDXV6T1 NSBA113EDXV6T1 NSBA123EDXV6T1 NSBA143EDXV6T1 NSBA143ZDXV6T1 NSBA124XDXV6T1 NSBA123JDXV6T1 NSBA115EDXV6T1 NSBA144WDXV6T1	h _{FE}	35 60 80 80 160 160 3.0 8.0 15 80 80 80 80 80	60 100 140 140 250 250 5.0 15 27 140 130 140 130 140	- - - - - - - - - - - - - -	
Output Voltage (on) (V _{CC} = -5.0 V, V _B = -2.5 V, R _L = 1.0 kΩ)	NSBA114EDXV6T1 NSBA124EDXV6T1 NSBA114YDXV6T1 NSBA114TDXV6T1 NSBA143TDXV6T1 NSBA113EDXV6T1 NSBA123EDXV6T1 NSBA143EDXV6T1 NSBA143ZDXV6T1 NSBA124XDXV6T1 NSBA123JDXV6T1 (V _{CC} = -5.0 V, V _B = -3.5 V, R _L = 1.0 kΩ) (V _{CC} = -5.0 V, V _B = -5.5 V, R _L = 1.0 kΩ) (V _{CC} = -5.0 V, V _B = -4.0 V, R _L = 1.0 kΩ)	V _{OL}	- - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - -	-0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2	V _{dc}
Output Voltage (off) (V _{CC} = -5.0 V, V _B = -0.5 V, R _L = 1.0 kΩ) (V _{CC} = -5.0 V, V _B = -0.05 V, R _L = 1.0 kΩ) (V _{CC} = -5.0 V, V _B = -0.25 V, R _L = 1.0 kΩ)	NSBA113EDXV6T1 NSBA114TDXV6T1 NSBA143TDXV6T1 NSBA123EDXV6T1 NSBA143ZDXV6T1	V _{OH}	-4.9	-	-	V _{dc}
Input Resistor	NSBA114EDXV6T1 NSBA124EDXV6T1 NSBA144EDXV6T1 NSBA114YDXV6T1 NSBA114TDXV6T1 NSBA143TDXV6T1 NSBA113EDXV6T1 NSBA123EDXV6T1 NSBA143EDXV6T1 NSBA143ZDXV6T1 NSBA124XDXV6T1 NSBA123JDXV6T1 NSBA115EDXV6T1 NSBA144WDXV6T1	R ₁	7.0 15.4 32.9 7.0 7.0 3.3 0.7 1.5 3.3 3.3 15.4 1.54 70 32.9	10 22 47 10 10 4.7 1.0 2.2 4.7 4.7 22 2.2 100 47	13 28.6 61.1 13 13 6.1 1.3 2.9 6.1 6.1 28.6 2.86 130 61.1	k Ω
Resistor Ratio	NSBA114EDXV6T1/NSBA124EDXV6T1/ NSBA144EDXV6T1/NSBA115EDXV6T1 NSBA114YDXV6T1 NSBA114TDXV6T1/NSBA143TDXV6T1 NSBA113EDXV6T1/NSBA123EDXV6T1/NSBA143EDXV6T1 NSBA143ZDXV6T1 NSBA124XDXV6T1 NSBA123JDXV6T1 NSBA144WDXV6T1	R ₁ /R ₂	0.8 0.17 - 0.8 0.055 0.38 0.038 1.7	1.0 0.21 - 1.0 0.1 0.47 0.047 2.1	1.2 0.25 - 1.2 0.185 0.56 0.056 2.6	

2. New resistor combinations. Updated curves to follow in subsequent data sheets.
3. Pulse Test: Pulse Width < 300 μs, Duty Cycle < 2.0%

NSBA114EDXV6T1, NSBA114EDXV6T5

ALL NSBA114EDXV6T1 SERIES DEVICES

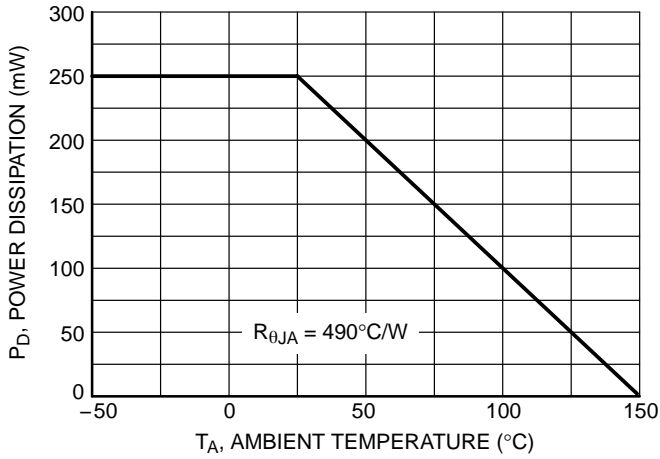


Figure 1. Derating Curve – ALL DEVICES

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA114EDXV6T1

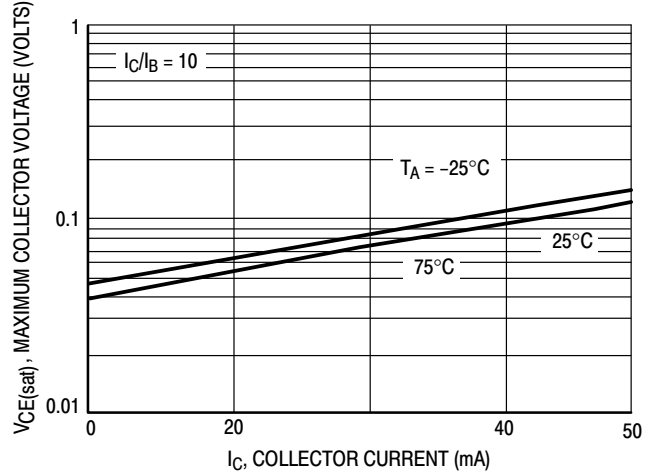


Figure 2. V_{CE(sat)} versus I_C

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA114EDXV6T1

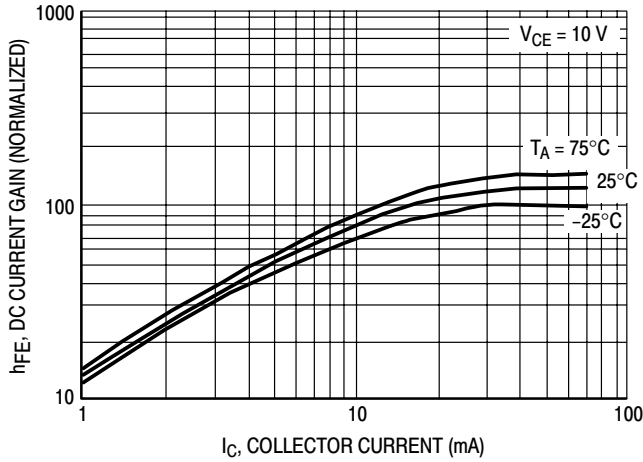


Figure 3. DC Current Gain

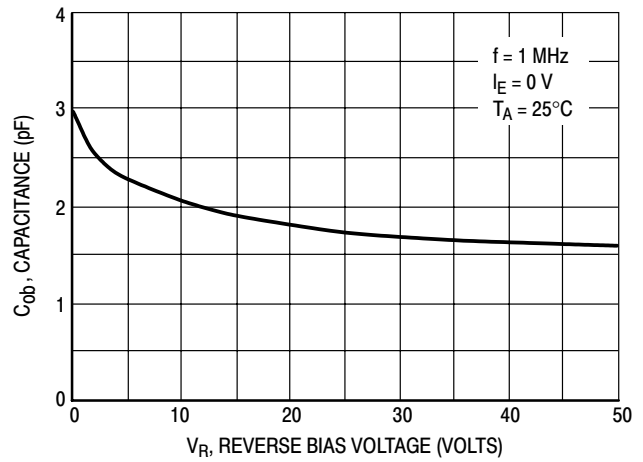


Figure 4. Output Capacitance

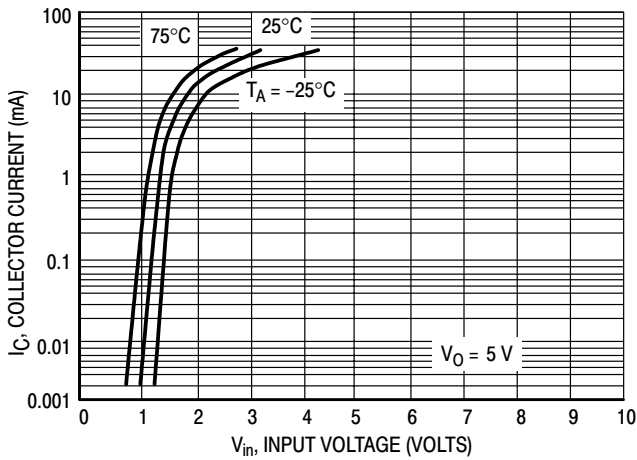


Figure 5. Output Current versus Input Voltage

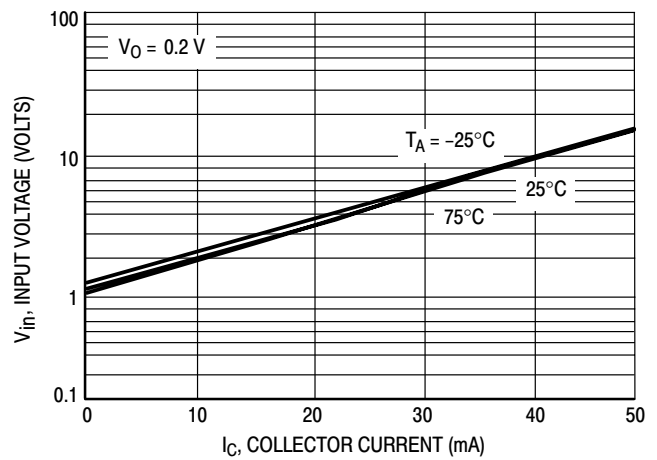


Figure 6. Input Voltage versus Output Current

NSBA114EDXV6T1, NSBA114EDXV6T5

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA124EDXV6T1

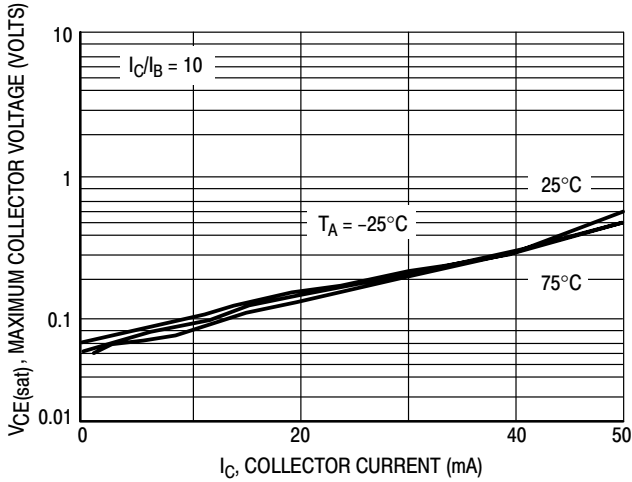


Figure 7. $V_{CE(sat)}$ versus I_C

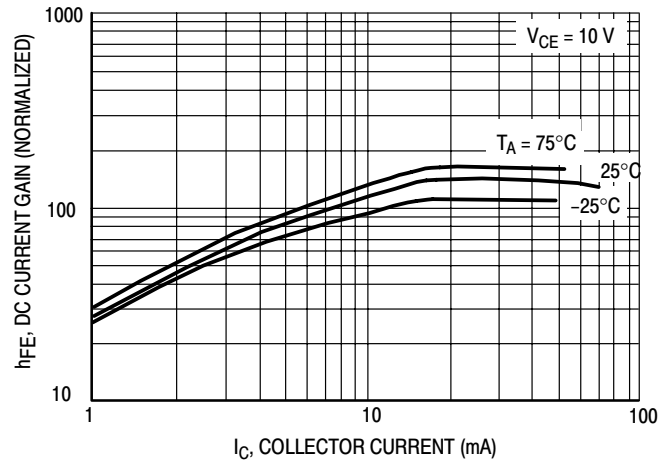


Figure 8. DC Current Gain

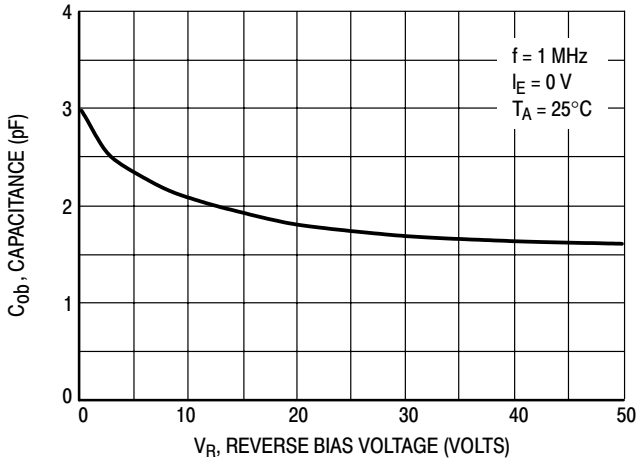


Figure 9. Output Capacitance

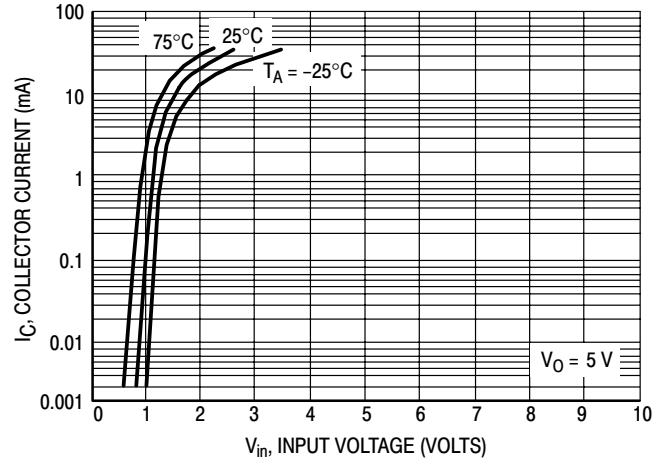


Figure 10. Output Current versus Input Voltage

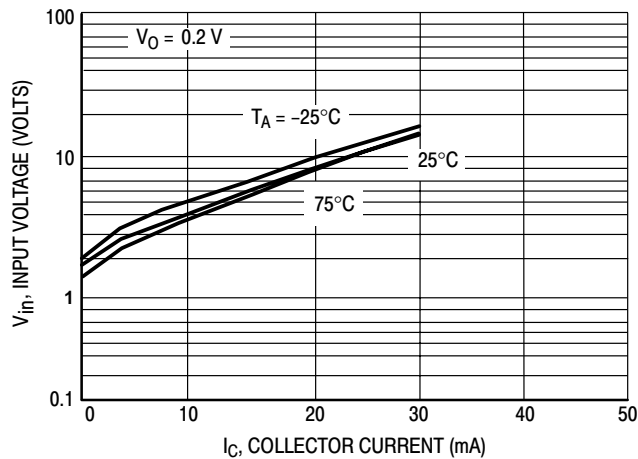


Figure 11. Input Voltage versus Output Current

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA114EDXV6T1

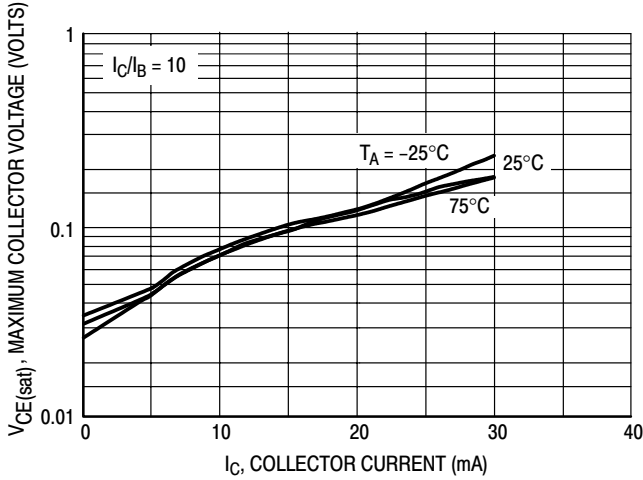


Figure 12. $V_{CE(sat)}$ versus I_C

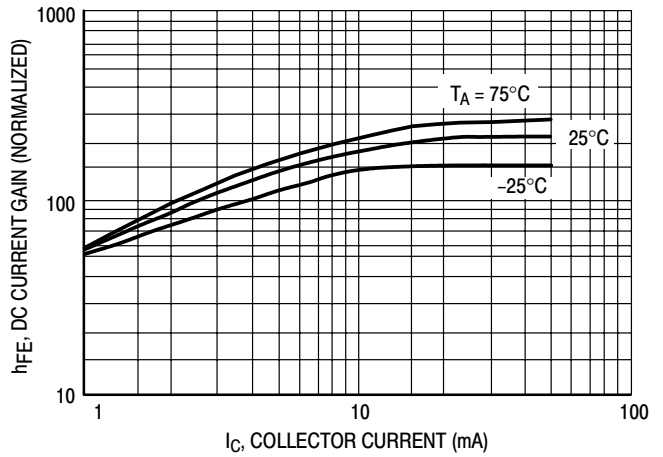


Figure 13. DC Current Gain

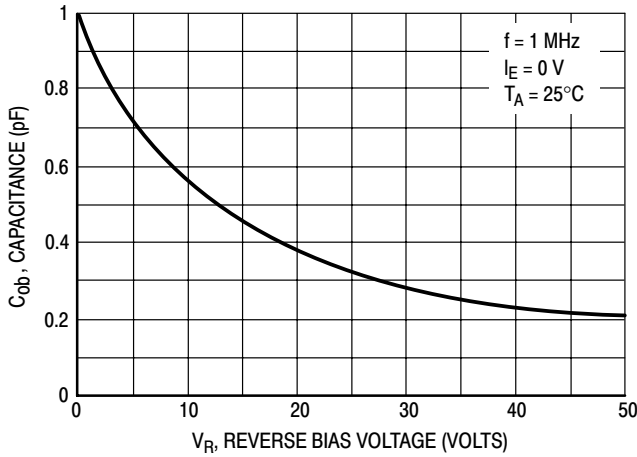


Figure 14. Output Capacitance

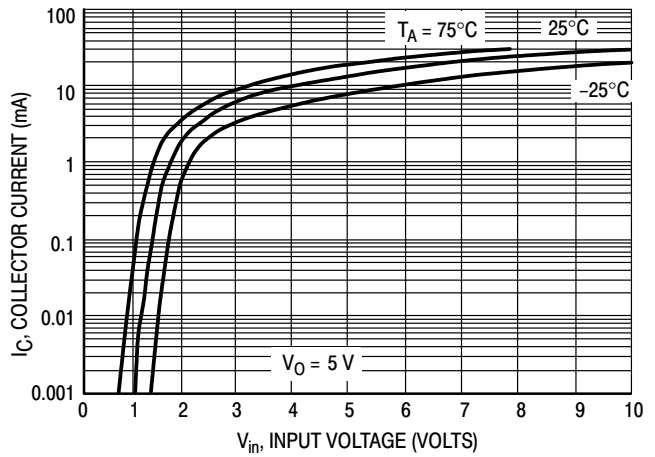


Figure 15. Output Current versus Input Voltage

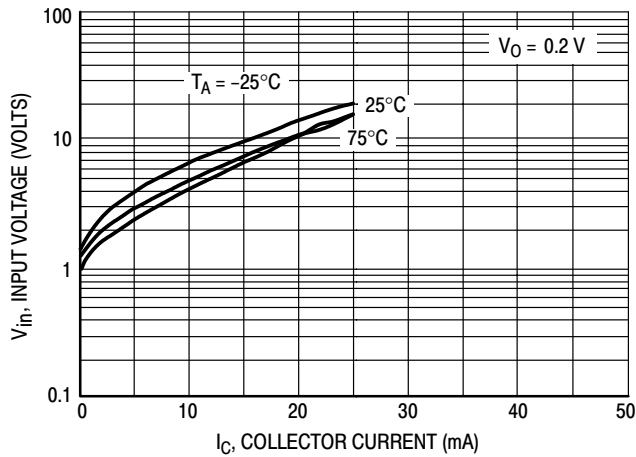


Figure 16. Input Voltage versus Output Current

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA114YDXV6T1

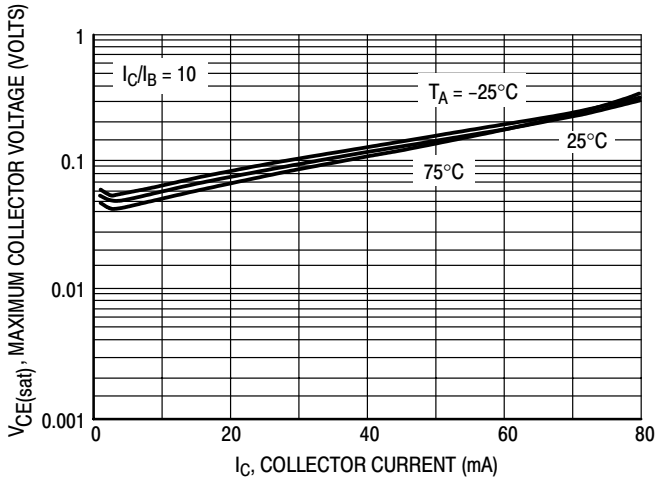


Figure 17. $V_{CE(sat)}$ versus I_C

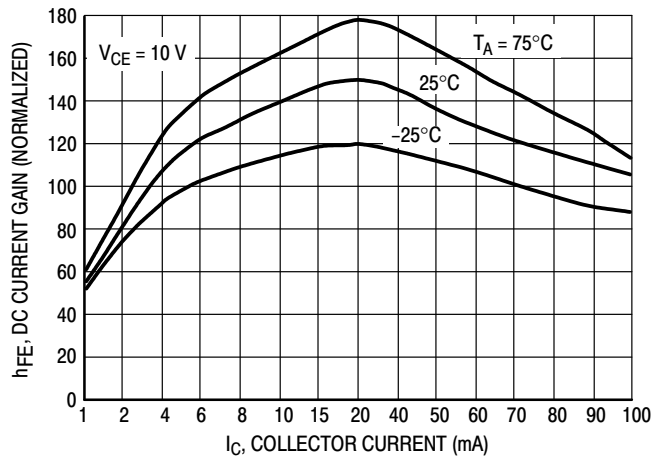


Figure 18. DC Current Gain

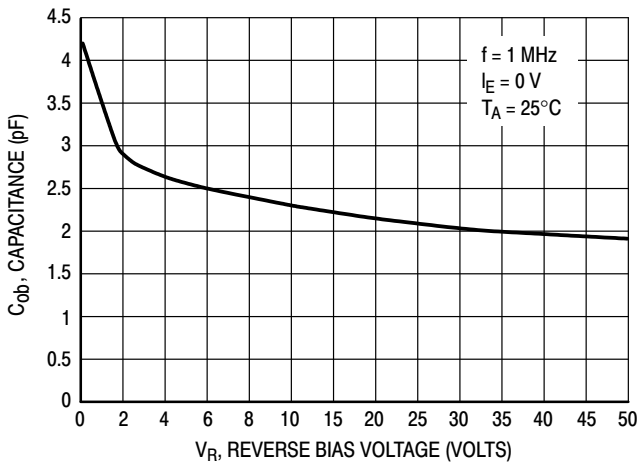


Figure 19. Output Capacitance

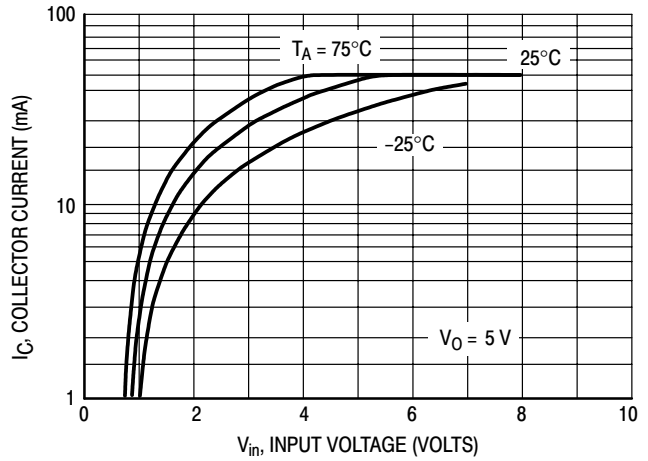


Figure 20. Output Current versus Input Voltage

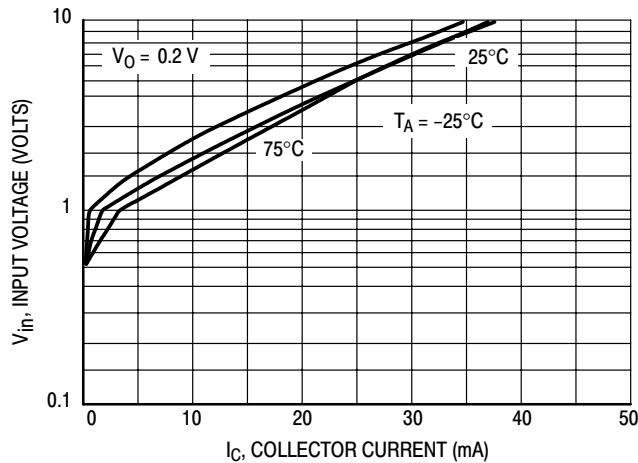


Figure 21. Input Voltage versus Output Current

NSBA114EDXV6T1, NSBA114EDXV6T5

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA114TDXV6T1

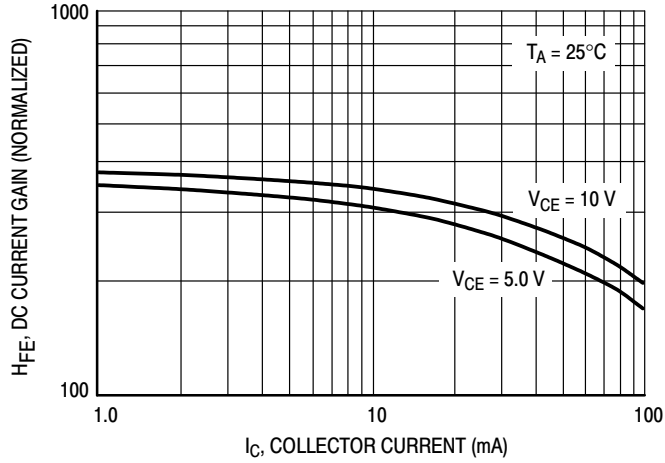


Figure 22. DC Current Gain

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA143TDXV6T1

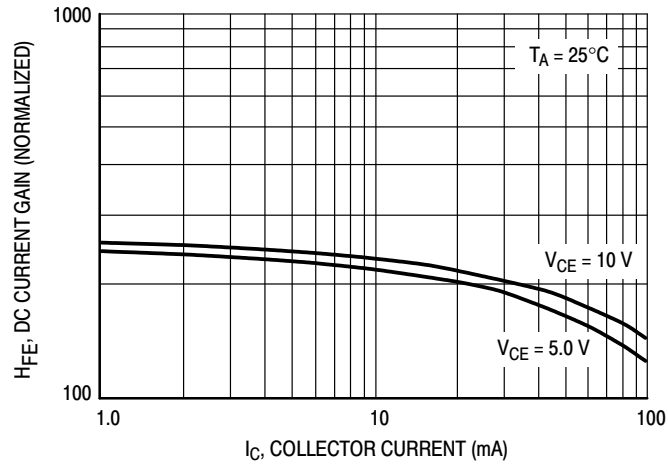


Figure 23. DC Current Gain

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA115EDXV6T1

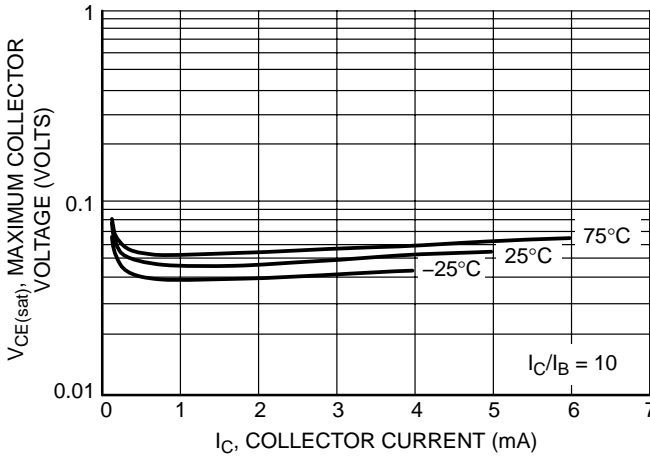


Figure 24. Maximum Collector Voltage versus Collector Current

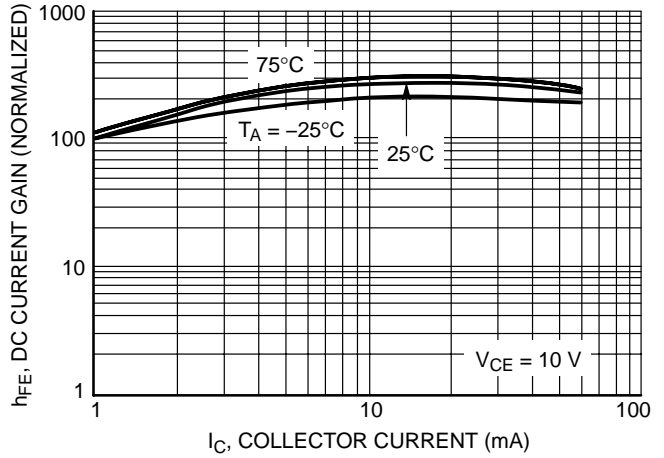


Figure 25. DC Current Gain

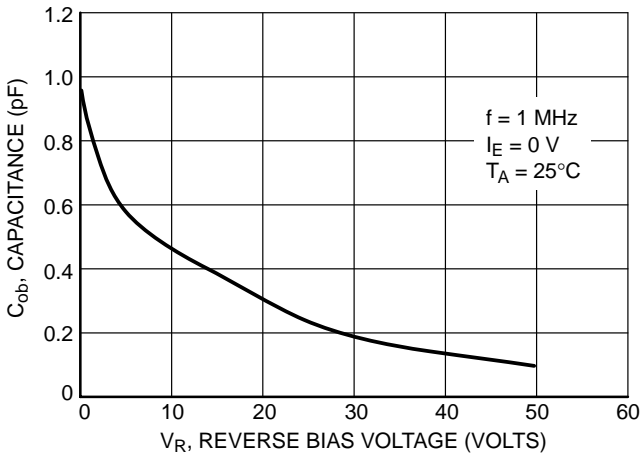


Figure 26. Output Capacitance

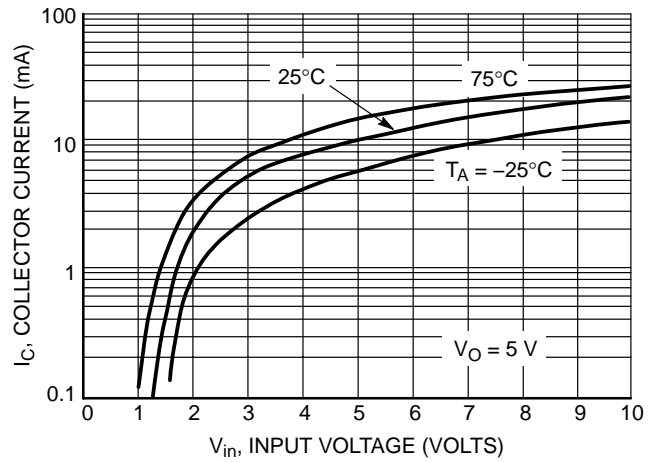


Figure 27. Output Current versus Input Voltage

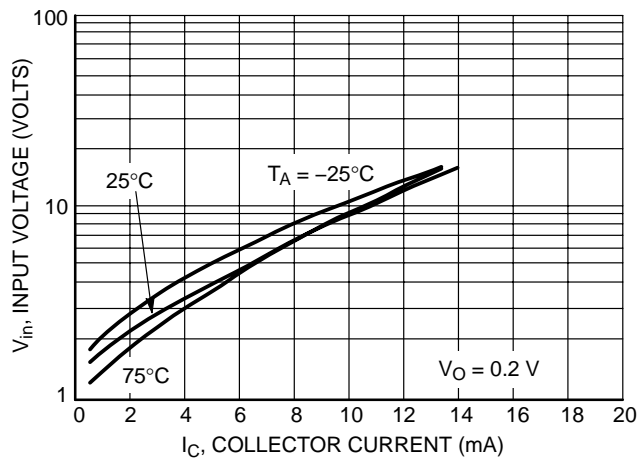


Figure 28. Input Voltage versus Output Current

TYPICAL ELECTRICAL CHARACTERISTICS — NSBA144WDXV6T1

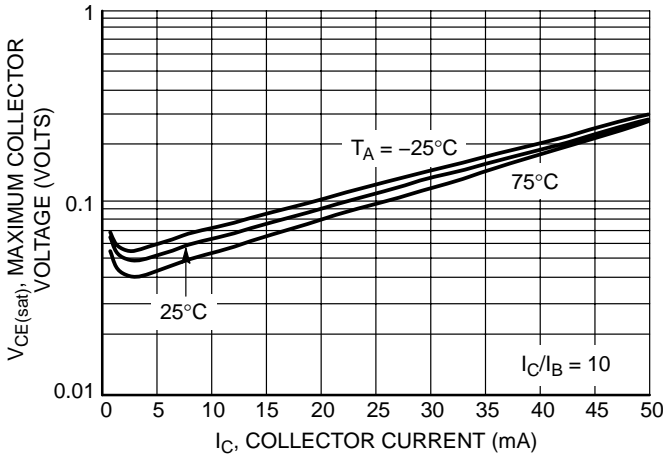


Figure 29. Maximum Collector Voltage versus Collector Current

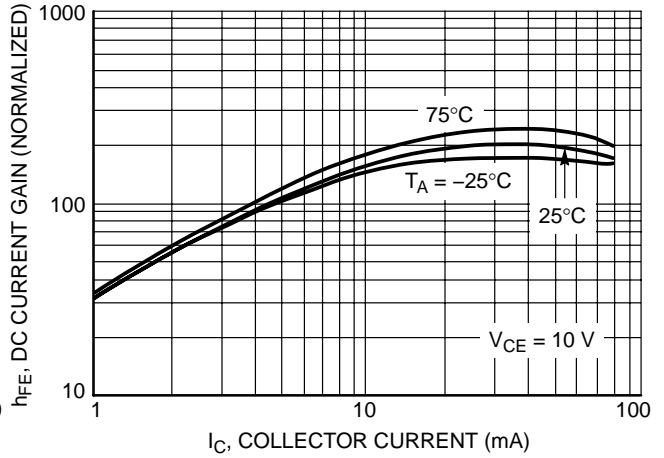


Figure 30. DC Current Gain

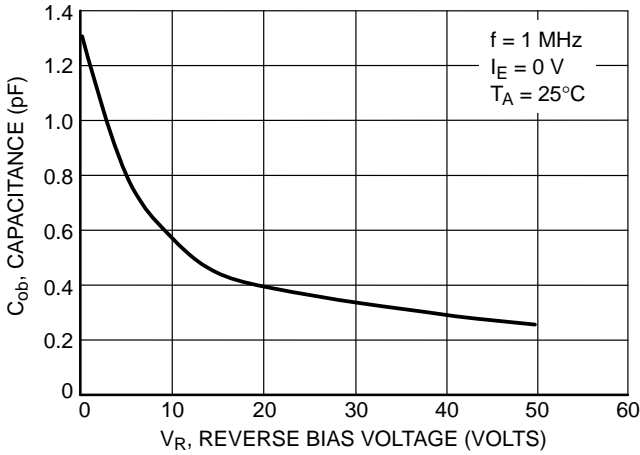


Figure 31. Output Capacitance

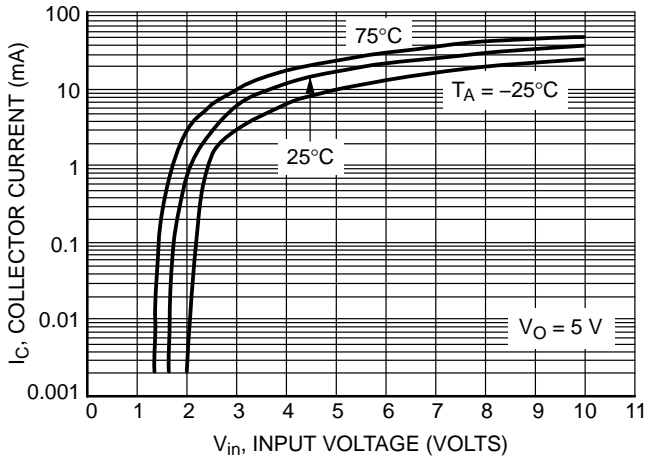


Figure 32. Output Current versus Input Voltage

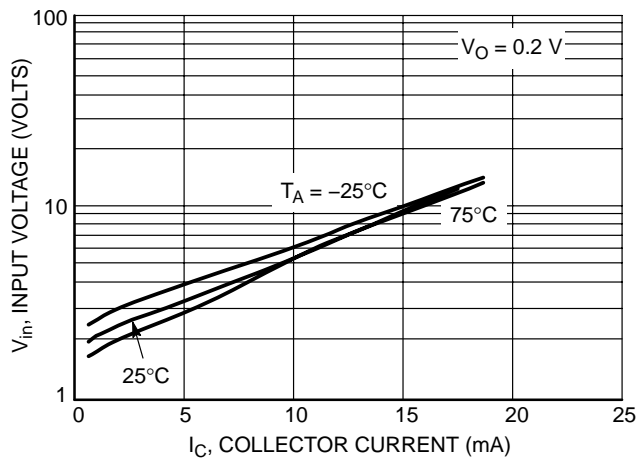
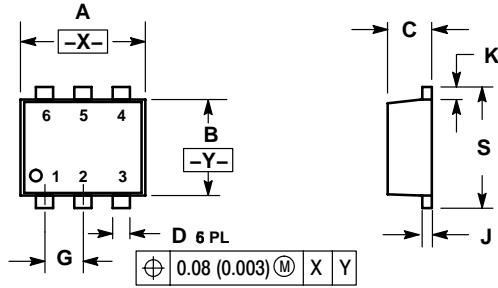


Figure 33. Input Voltage versus Output Current

NSBA114EDXV6T1, NSBA114EDXV6T5

PACKAGE DIMENSIONS

SOT-563, 6 LEAD
CASE 463A-01
ISSUE O



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

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

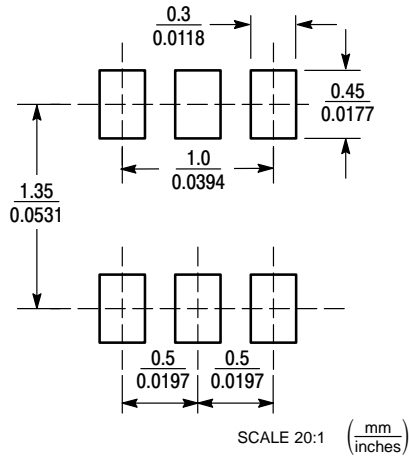
STYLE 3:

- 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

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.

NSBA114EDXV6T1, NSBA114EDXV6T5

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.

NSBA114EDXV6/D