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# BC327, BC327-16, BC327-25, BC327-40

## Amplifier Transistors

### PNP Silicon

#### Features

- Pb-Free Packages are Available\*

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	–45	Vdc
Collector–Base Voltage	$V_{CES}$	–50	Vdc
Collector–Emitter Voltage	$V_{EBO}$	–5.0	Vdc
Collector Current – Continuous	$I_C$	–800	mA <sub>dc</sub>
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$	$P_D$	625 5.0	mW mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$	$P_D$	1.5 12	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	–55 to +150	$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

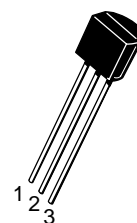
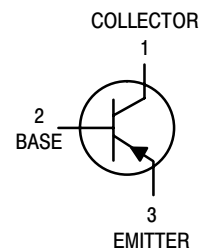
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.



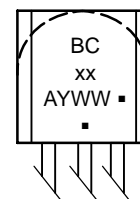
ON Semiconductor®

<http://onsemi.com>



TO-92  
CASE 29  
STYLE 17

#### MARKING DIAGRAM



BCxx = Device Code  
A = Assembly Location  
Y = Year  
WW = Work Week  
■ = Pb-Free Package

(Note: Microdot may be in either location)

#### ORDERING INFORMATION

See detailed ordering, marking, and shipping information in the package dimensions section on page 4 of this data sheet.

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

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## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage ( $I_C = -10\text{ mA}$ , $I_B = 0$ )	$V_{(BR)CEO}$	-45	-	-	Vdc
Collector-Emitter Breakdown Voltage ( $I_C = -100\ \mu\text{A}$ , $I_E = 0$ )	$V_{(BR)CES}$	-50	-	-	Vdc
Emitter-Base Breakdown Voltage ( $I_E = -10\ \mu\text{A}$ , $I_C = 0$ )	$V_{(BR)EBO}$	-5.0	-	-	Vdc
Collector Cutoff Current ( $V_{CB} = -30\text{ V}$ , $I_E = 0$ )	$I_{CBO}$	-	-	-100	nAdc
Collector Cutoff Current ( $V_{CE} = -45\text{ V}$ , $V_{BE} = 0$ )	$I_{CES}$	-	-	-100	nAdc
Emitter Cutoff Current ( $V_{EB} = -4.0\text{ V}$ , $I_C = 0$ )	$I_{EBO}$	-	-	-100	nAdc
<b>ON CHARACTERISTICS</b>					
DC Current Gain ( $I_C = -100\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )	$h_{FE}$	100	-	630	-
	BC327	100	-	250	
	BC327-16	160	-	400	
	BC327-25	250	-	630	
	BC327-40	40	-	-	
		-	-	-	-
Base-Emitter On Voltage ( $I_C = -300\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )	$V_{BE(on)}$	-	-	-1.2	Vdc
Collector-Emitter Saturation Voltage ( $I_C = -500\text{ mA}$ , $I_B = -50\text{ mA}$ )	$V_{CE(sat)}$	-	-	-0.7	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>					
Output Capacitance ( $V_{CB} = -10\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ob}$	-	11	-	pF
Current-Gain-Bandwidth Product ( $I_C = -10\text{ mA}$ , $V_{CE} = -5.0\text{ V}$ , $f = 100\text{ MHz}$ )	$f_T$	-	260	-	MHz

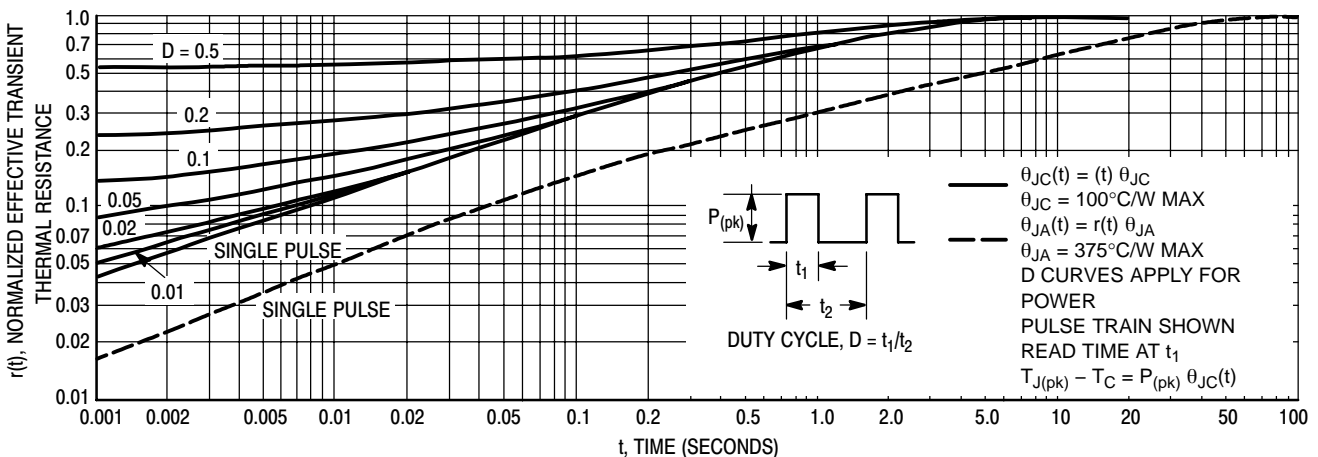


Figure 1. Thermal Response

BC327, BC327-16, BC327-25, BC327-40

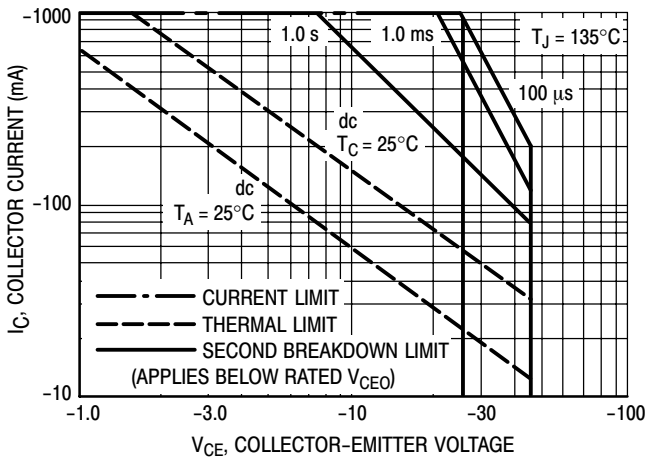


Figure 2. Active Region – Safe Operating Area

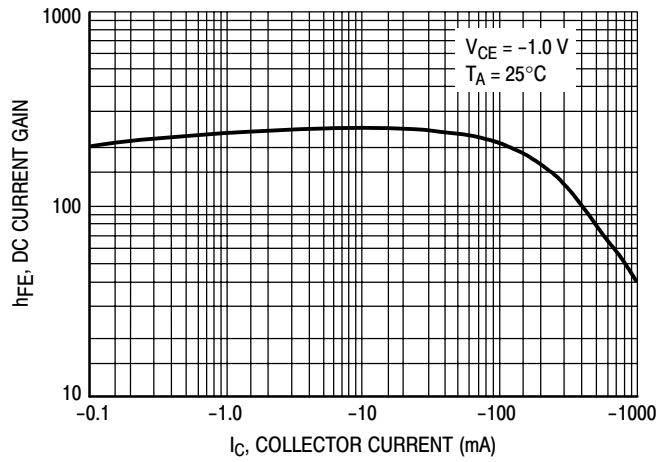


Figure 3. DC Current Gain

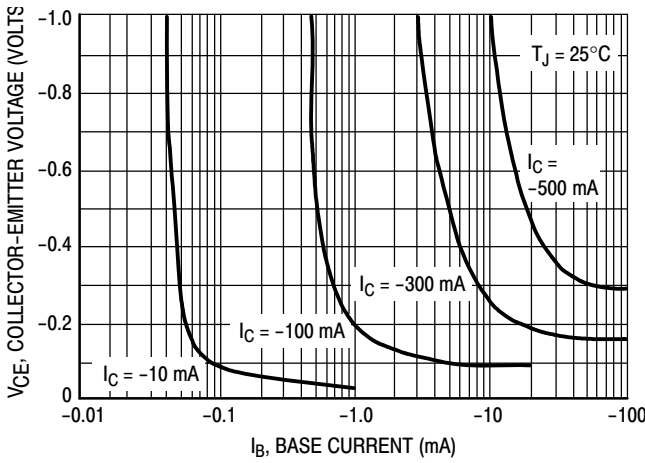


Figure 4. Saturation Region

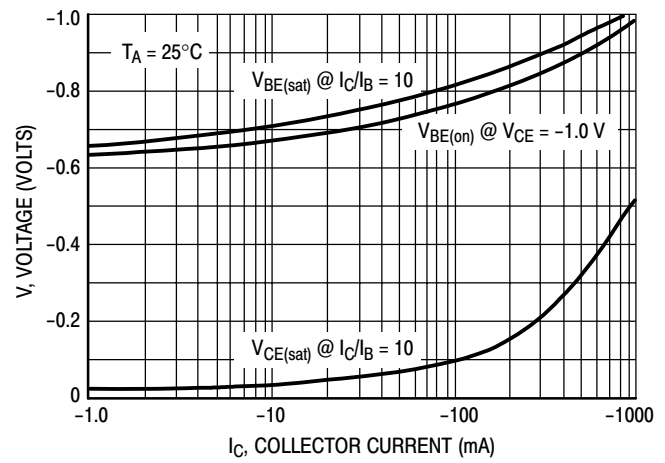


Figure 5. "On" Voltages

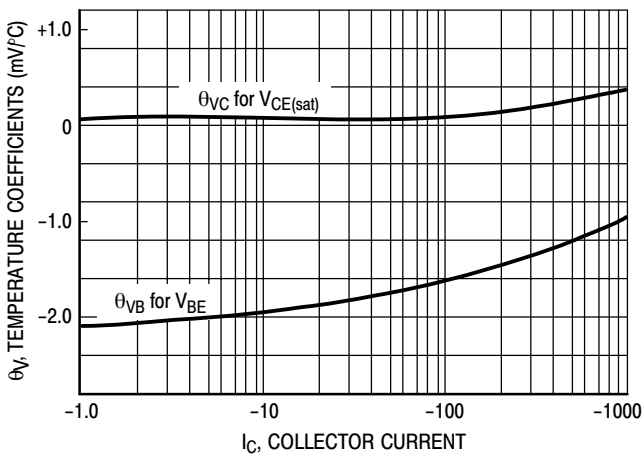


Figure 6. Temperature Coefficients

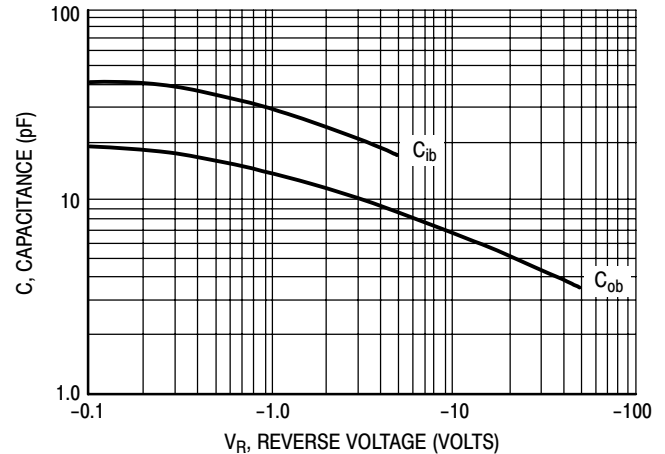


Figure 7. Capacitances

## BC327, BC327-16, BC327-25, BC327-40

### ORDERING INFORMATION

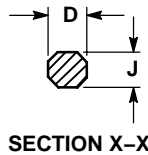
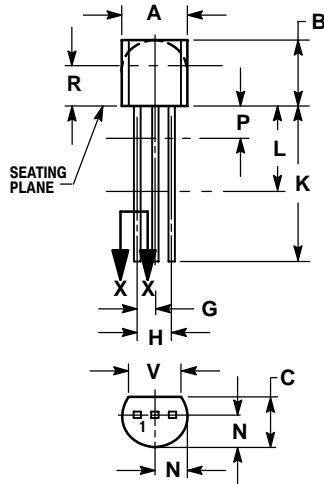
Device Order Number	Specific Device Marking	Package Type	Shipping†
BC327	7	TO-92	5000 Units / Bulk
BC327G	7	TO-92 (Pb-Free)	5000 Units / Bulk
BC327RL1	327	TO-92	2000 / Tape & Reel
BC327RL1G	327	TO-92 (Pb-Free)	2000 / Tape & Reel
BC327ZL1	327	TO-92	2000 / Tape & Ammo Box
BC327ZL1G	327	TO-92 (Pb-Free)	2000 / Tape & Ammo Box
BC327-016	327	TO-92	5000 Units / Bulk
BC327-016G	327	TO-92 (Pb-Free)	5000 Units / Bulk
BC327-016ZL1	32716	TO-92	2000 / Tape & Ammo Box
BC327-016ZL1G	32716	TO-92 (Pb-Free)	2000 / Tape & Ammo Box
BC327-25RL1	7-25	TO-92	2000 / Tape & Reel
BC327-25RL1G	7-25	TO-92 (Pb-Free)	2000 / Tape & Reel
BC327-25ZL1	32725	TO-92	2000 / Tape & Ammo Box
BC327-25ZL1G	32725	TO-92 (Pb-Free)	2000 / Tape & Ammo Box
BC327-040	327	TO-92	2000 / Tape & Reel
BC327-040G	327	TO-92 (Pb-Free)	2000 / Tape & Reel
BC327-40ZL1	7-40	TO-92	2000 / Tape & Ammo Box
BC327-40ZL1G	7-40	TO-92 (Pb-Free)	2000 / Tape & Ammo Box

†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.

# BC327, BC327-16, BC327-25, BC327-40

## PACKAGE DIMENSIONS

TO-92 (TO-226)  
CASE 29-11  
ISSUE AL



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

**STYLE 17:**

- PIN 1. COLLECTOR
- BASE
- EMITTER

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