

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

Amplifier Transistors

PNP Silicon

Features

- These are Pb-Free Devices*

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	-45	Vdc
Collector-Emitter Voltage	V_{CES}	-50	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current - Continuous	I_C	-800	mAdc
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

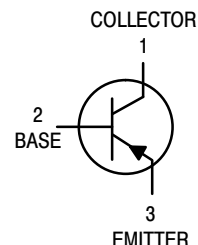
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

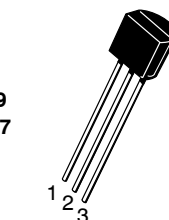


ON Semiconductor®

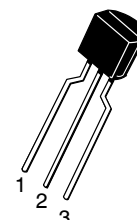
<http://onsemi.com>



TO-92
CASE 29
STYLE 17

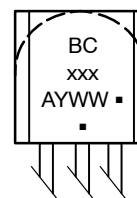


STRAIGHT LEAD
BULK PACK



BENT LEAD
TAPE & REEL
AMMO PACK

MARKING DIAGRAM



BCxxx = 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																														
OFF CHARACTERISTICS																																			
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																														
ON CHARACTERISTICS																																			
DC Current Gain ($I_C = -100\text{ mA}$, $V_{CE} = -1.0\text{ V}$)	<table style="margin: auto; border: none;"> <tr><td style="padding: 0 10px;">BC327</td><td style="text-align: center;">h_{FE}</td><td style="text-align: center;">100</td><td style="text-align: center;">-</td><td style="text-align: center;">630</td><td style="text-align: center;">-</td></tr> <tr><td style="padding: 0 10px;">BC327-16</td><td style="text-align: center;">h_{FE}</td><td style="text-align: center;">100</td><td style="text-align: center;">-</td><td style="text-align: center;">250</td><td style="text-align: center;">-</td></tr> <tr><td style="padding: 0 10px;">BC327-25</td><td style="text-align: center;">h_{FE}</td><td style="text-align: center;">160</td><td style="text-align: center;">-</td><td style="text-align: center;">400</td><td style="text-align: center;">-</td></tr> <tr><td style="padding: 0 10px;">BC327-40</td><td style="text-align: center;">h_{FE}</td><td style="text-align: center;">250</td><td style="text-align: center;">-</td><td style="text-align: center;">630</td><td style="text-align: center;">-</td></tr> <tr><td style="padding: 0 10px;">BC327-40</td><td style="text-align: center;">h_{FE}</td><td style="text-align: center;">40</td><td style="text-align: center;">-</td><td style="text-align: center;">-</td><td style="text-align: center;">-</td></tr> </table>	BC327	h_{FE}	100	-	630	-	BC327-16	h_{FE}	100	-	250	-	BC327-25	h_{FE}	160	-	400	-	BC327-40	h_{FE}	250	-	630	-	BC327-40	h_{FE}	40	-	-	-	100	-	630	-
BC327		h_{FE}	100	-	630	-																													
BC327-16		h_{FE}	100	-	250	-																													
BC327-25		h_{FE}	160	-	400	-																													
BC327-40		h_{FE}	250	-	630	-																													
BC327-40	h_{FE}	40	-	-	-																														
($I_C = -300\text{ mA}$, $V_{CE} = -1.0\text{ V}$)	250	-	630	-																															
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																														
SMALL-SIGNAL CHARACTERISTICS																																			
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																														

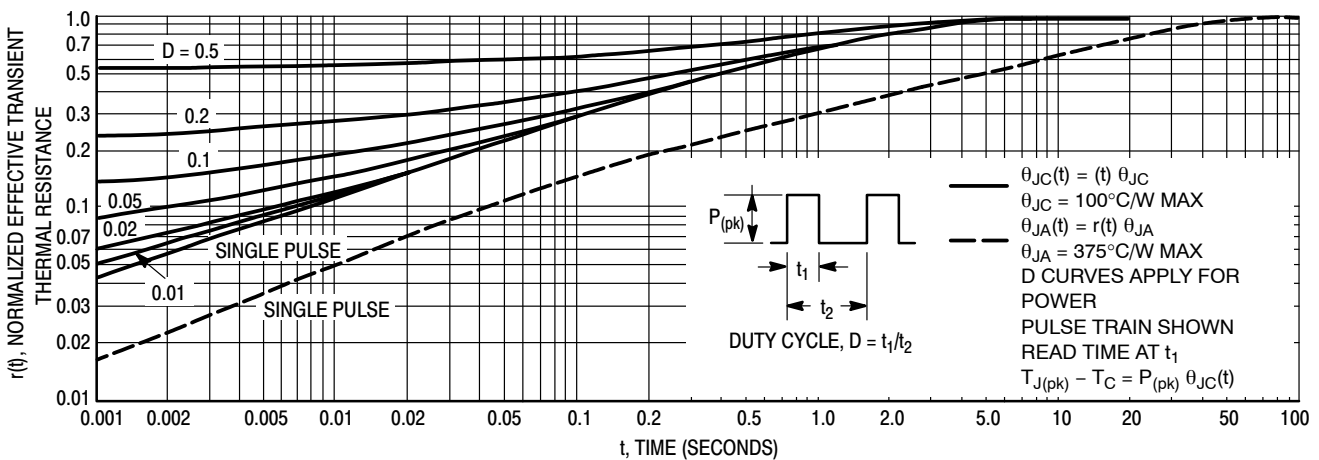


Figure 1. Thermal Response

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

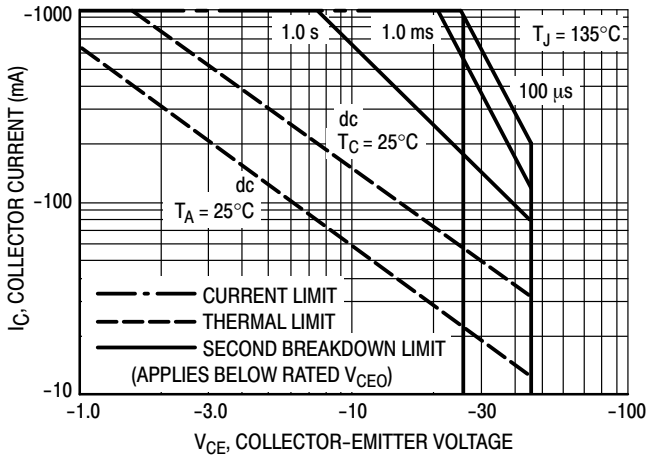


Figure 2. Active Region - Safe Operating Area

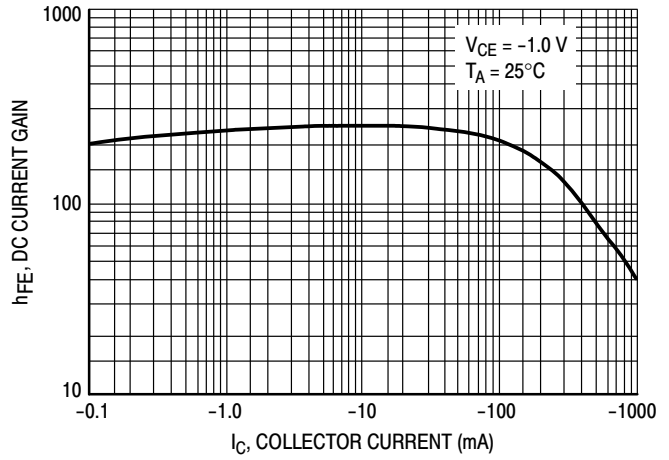


Figure 3. DC Current Gain

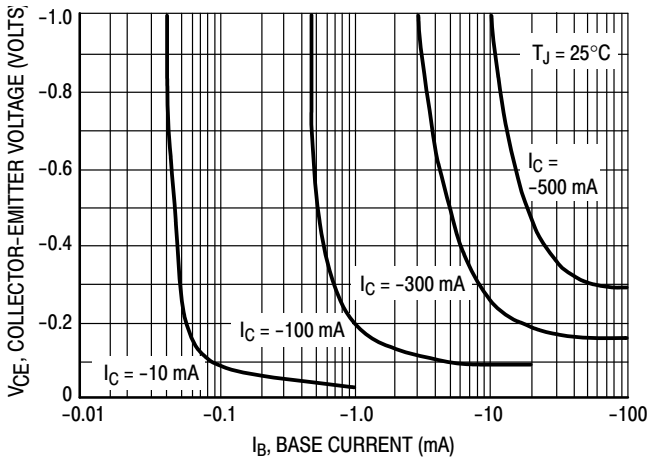


Figure 4. Saturation Region

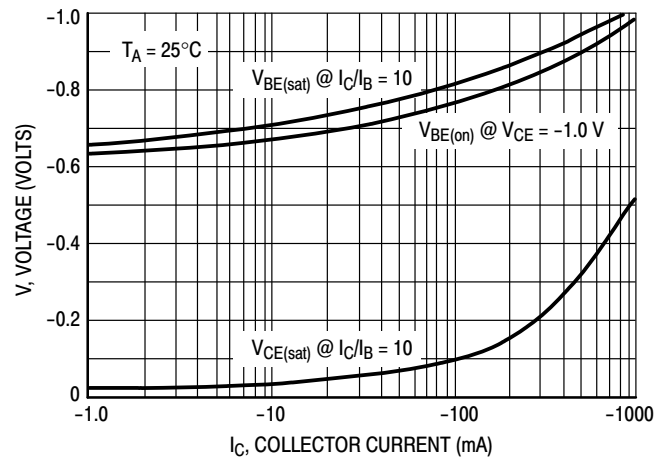


Figure 5. "On" Voltages

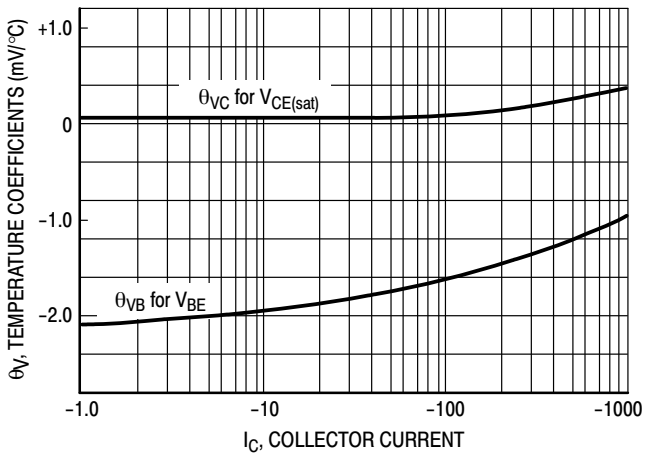


Figure 6. Temperature Coefficients

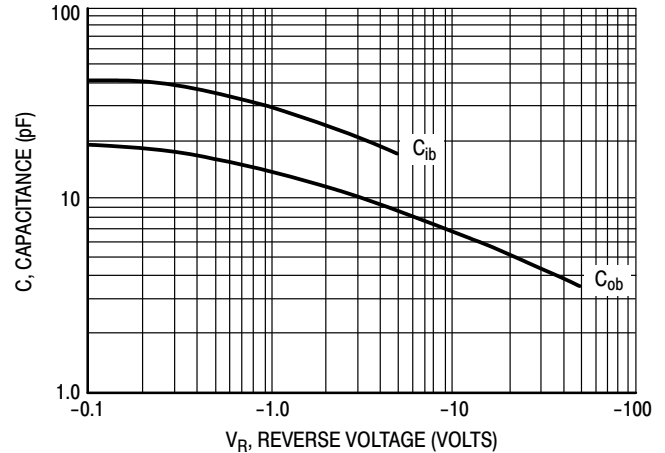


Figure 7. Capacitances

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

ORDERING INFORMATION

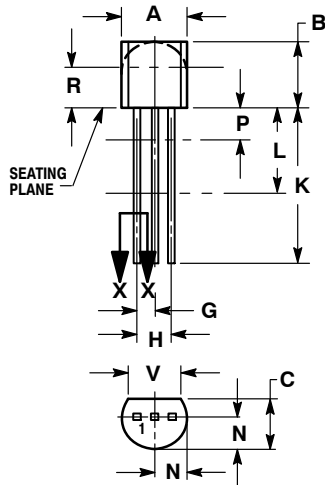
Device Order Number	Specific Device Marking	Package Type	Shipping†
BC327G	7	TO-92 Straight Lead (Pb-Free)	5000 Units / Bulk
BC327RL1G	327	TO-92 Bent Lead (Pb-Free)	2000 / Tape & Reel
BC327-025G	327	TO-92 Straight Lead (Pb-Free)	5000 Units / Bulk
BC327-25RL1G	7-25	TO-92 Bent Lead (Pb-Free)	2000 / Tape & Reel
BC327-25ZL1G	32725	TO-92 Bent Lead (Pb-Free)	2000 / Tape & Ammo Box
BC327-40ZL1G	7-40	TO-92 Bent Lead (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.

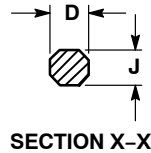
BC327, BC327-16, BC327-25, BC327-40

PACKAGE DIMENSIONS

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



STRAIGHT LEAD
BULK PACK

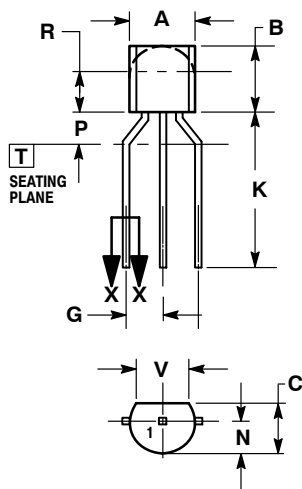


SECTION X-X

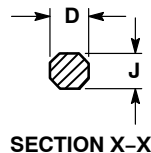
NOTES:

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	---



BENT LEAD
TAPE & REEL
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	MILLIMETERS	
	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

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