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

Amplifier Transistors

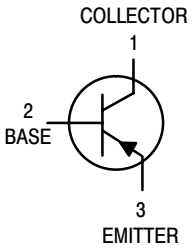
PNP Silicon

ON Semiconductor®

http://onsemi.com

Features

- Pb−Free Packages are Available*



MAXIMUM RATINGS

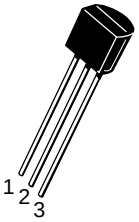
Rating	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	−45	Vdc
Collector−Base Voltage	V_{CES}	−50	Vdc
Collector−Emitter Voltage	V_{EBO}	−5.0	Vdc
Collector Current − Continuous	I_C	−800	mAdc
Total Power Dissipation @ T_A = 25°C Derate above T_A = 25°C	P_D	625 5.0	mW mW/°C
Total Power Dissipation @ T_A = 25°C Derate above T_A = 25°C	P_D	1.5 12	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

THERMAL CHARACTERISTICS

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

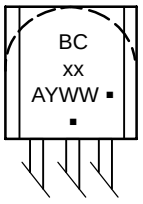
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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

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



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.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

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

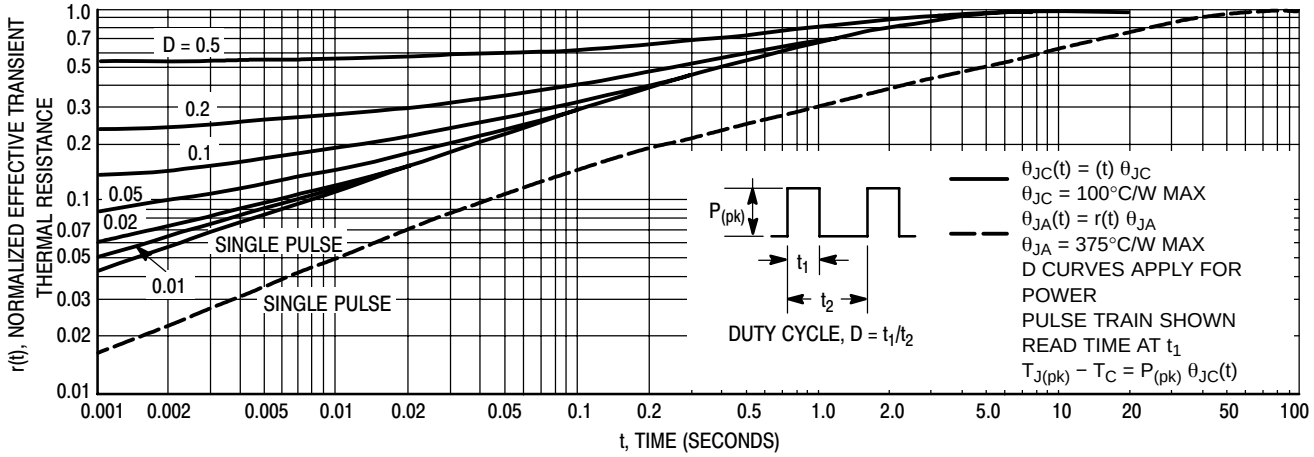


Figure 1. Thermal Response

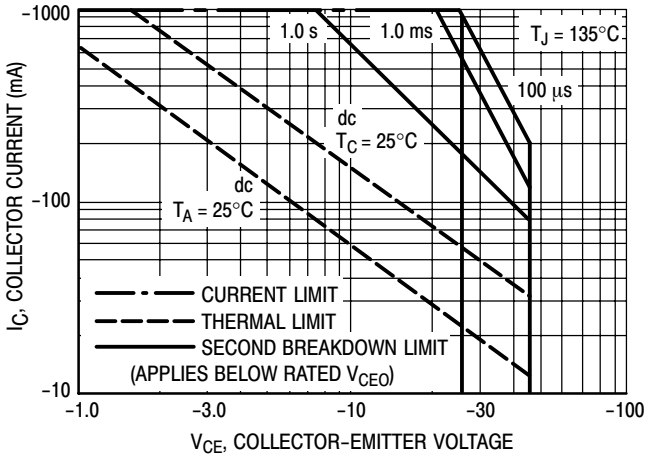


Figure 2. Active Region − Safe Operating Area

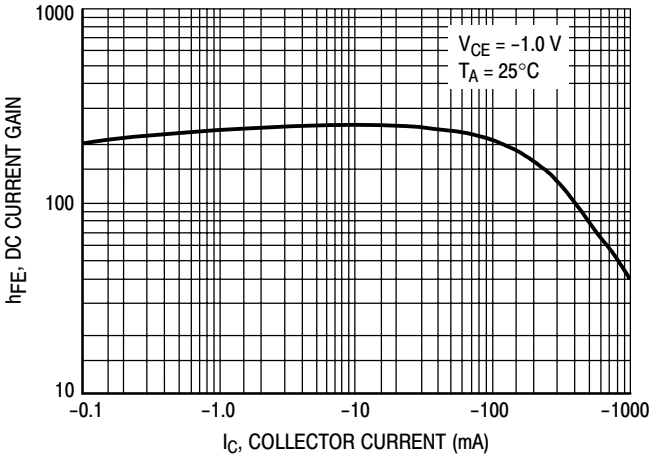


Figure 3. DC Current Gain

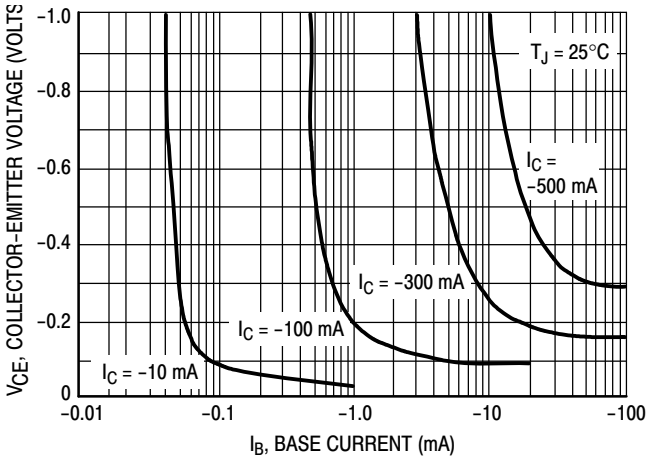


Figure 4. Saturation Region

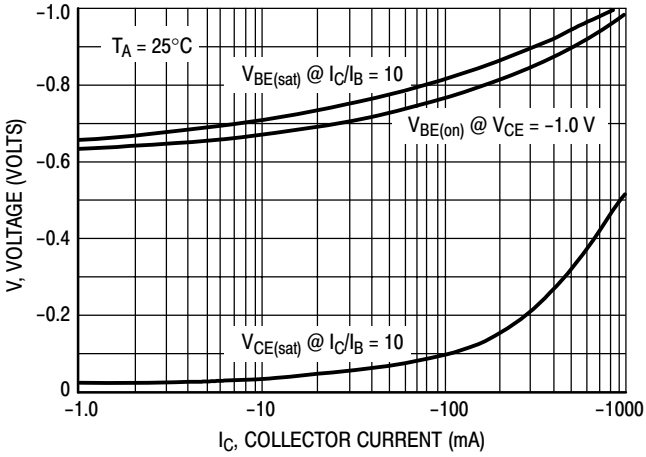


Figure 5. “On” Voltages

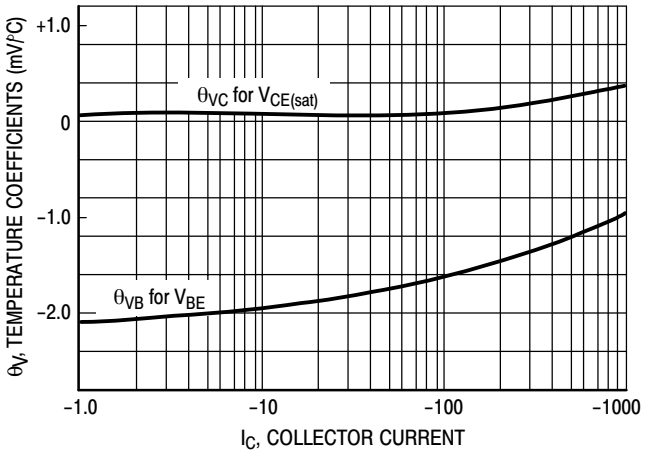


Figure 6. Temperature Coefficients

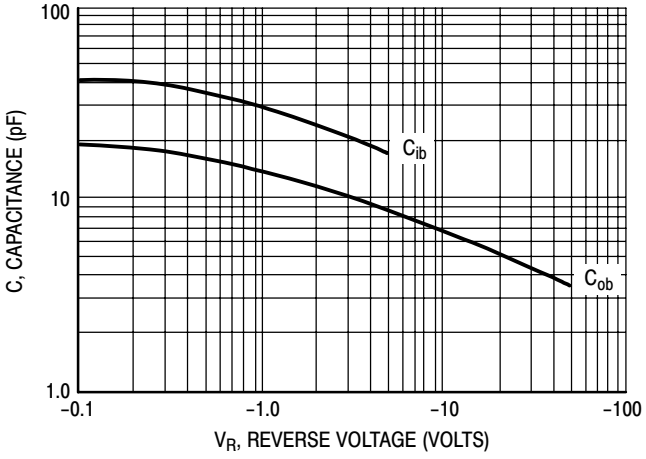


Figure 7. Capacitances

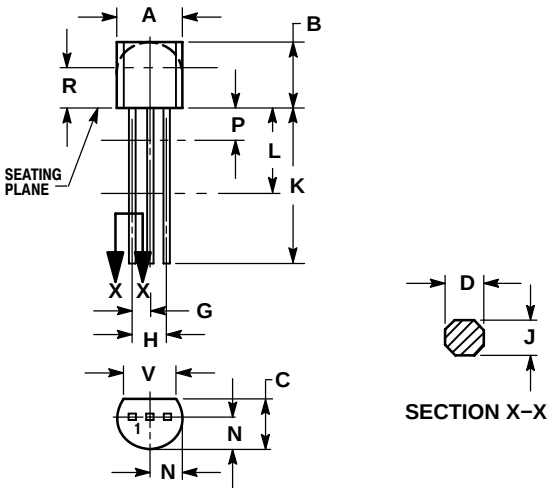
ORDERING INFORMATION

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.

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.

	INCHES		MILLIMETERS	
DIM	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
2. BASE
3. EMITTER

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