

# Amplifier Transistors

## PNP Silicon

**BC327,-16,-25**  
**BC328,-16,-25**



CASE 29-04, STYLE 17  
TO-92 (TO-226AA)

### MAXIMUM RATINGS

Rating	Symbol	BC327	BC328	Unit
Collector–Emitter Voltage	$V_{CEO}$	-45	-25	Vdc
Collector–Base Voltage	$V_{CBO}$	-50	-30	Vdc
Emitter–Base Voltage	$V_{EBO}$	-5.0		Vdc
Collector Current — Continuous	$I_C$	-800		mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	625	5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.5	12	Watt 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	$^\circ\text{C}/\text{W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ( $I_C = -10\text{ mA}, I_B = 0$ )	BC327 BC328	$V_{(BR)CEO}$	-45 -25	— —	— —	Vdc
Collector–Emitter Breakdown Voltage ( $I_C = -100\ \mu\text{A}, I_E = 0$ )	BC327 BC328	$V_{(BR)CES}$	-50 -30	— —	— —	Vdc
Emitter–Base Breakdown Voltage ( $I_E = -10\ \mu\text{A}, I_C = 0$ )		$V_{(BR)EBO}$	-5.0	—	—	Vdc
Collector Cutoff Current ( $V_{CB} = -30\text{ V}, I_E = 0$ ) ( $V_{CB} = -20\text{ V}, I_E = 0$ )	BC327 BC328	$I_{CBO}$	— —	— —	-100 -100	nAdc
Collector Cutoff Current ( $V_{CE} = -45\text{ V}, V_{BE} = 0$ ) ( $V_{CE} = -25\text{ V}, V_{BE} = 0$ )	BC327 BC328	$I_{CES}$	— —	— —	-100 -100	nAdc
Emitter Cutoff Current ( $V_{EB} = -4.0\text{ V}, I_C = 0$ )		$I_{EBO}$	—	—	-100	nAdc

# BC327,-16,-25 BC328,-16,-25

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

Characteristic	Symbol	Min	Typ	Max	Unit
<b>ON CHARACTERISTICS</b>					
DC Current Gain ( $I_C = -100\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )	$h_{FE}$	BC327/BC328	100	—	630
		BC327-16/BC328-16	100	—	250
		BC327-25/BC328-25	160	—	400
( $I_C = -300\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )		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

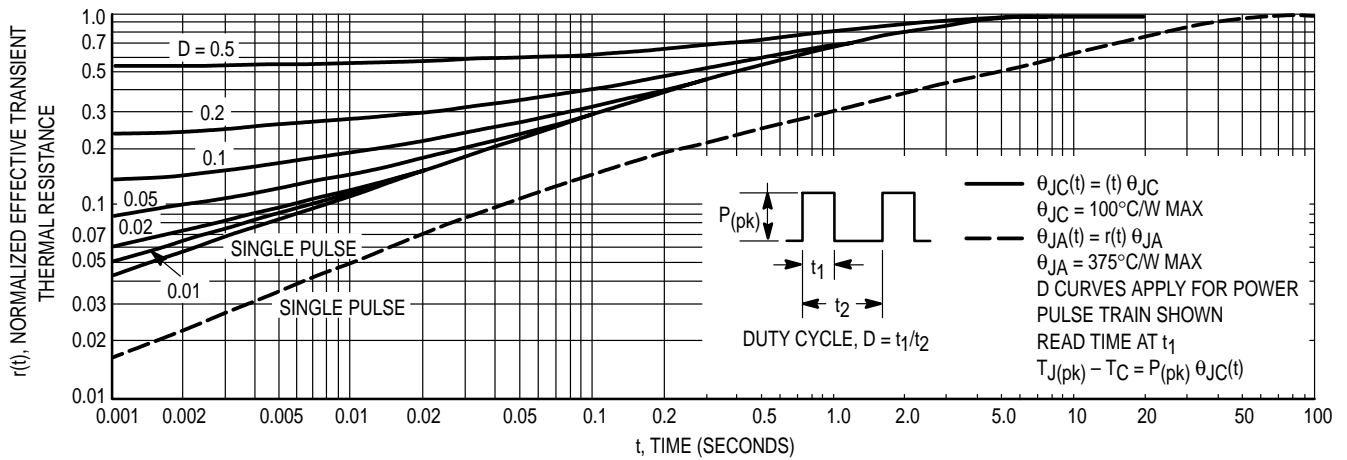


Figure 1. Thermal Response

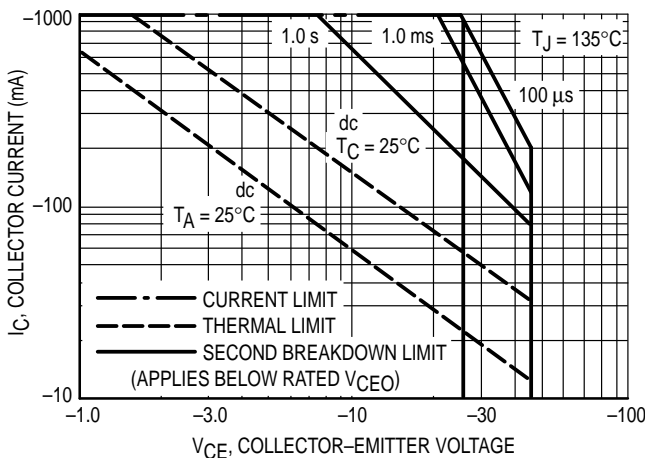


Figure 2. Active Region — Safe Operating Area

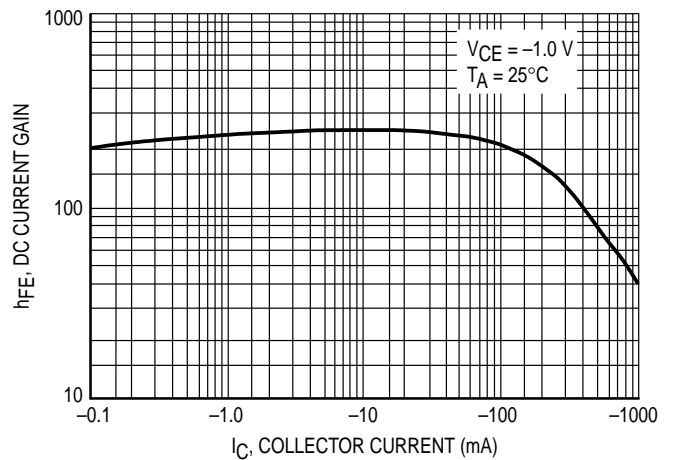


Figure 3. DC Current Gain

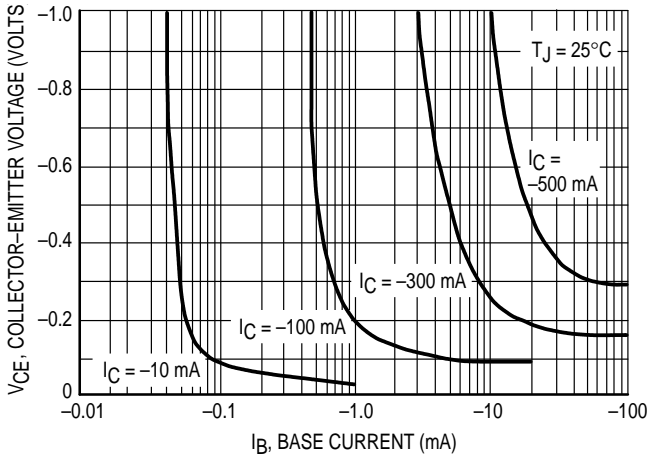


Figure 4. Saturation Region

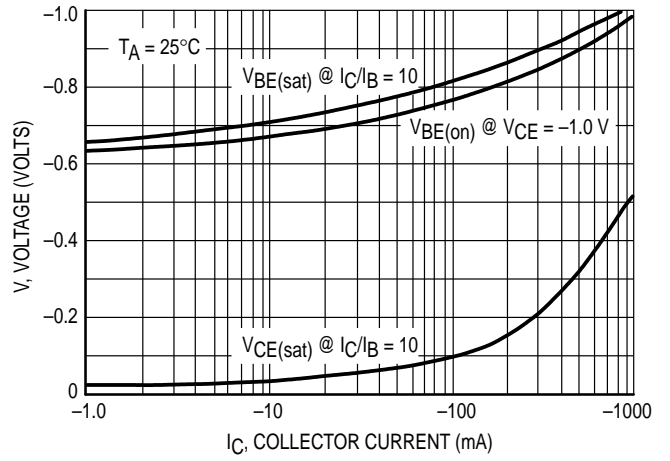


Figure 5. "On" Voltages

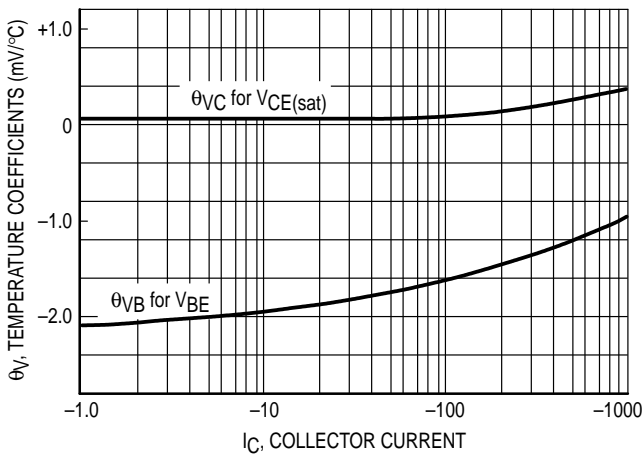


Figure 6. Temperature Coefficients

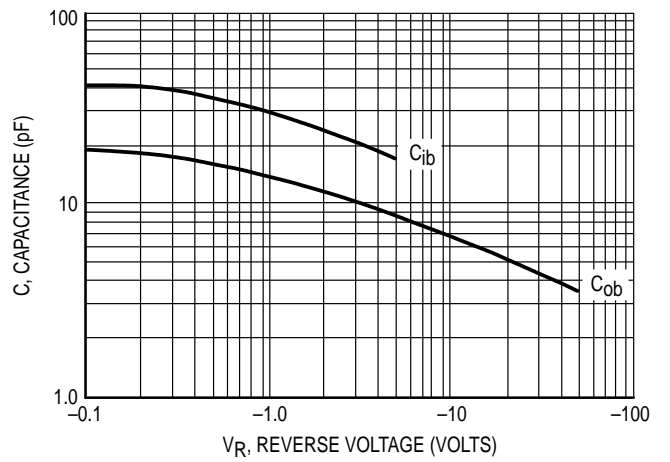


Figure 7. Capacitances

PACKAGE DIMENSIONS



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
  4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K. MINIMUM 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	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
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	—

CASE 029-04  
(TO-226AA)  
ISSUE AD

STYLE 17:  
PIN 1. COLLECTOR  
2. BASE  
3. EMITTER

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