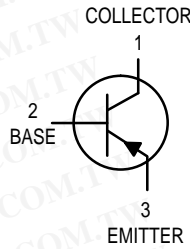


Amplifier Transistors

PNP Silicon

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BC307
BC307B
BC307C
BC308C



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

MAXIMUM RATINGS

Rating	Symbol	BC307, B, C	BC308C	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	-100		mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350	2.8	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0	8.0	Watts 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	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	$^\circ\text{C}/\text{W}$

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 ($I_C = -2.0$ mAdc, $I_B = 0$)	BC307,B,C BC308C	$V_{(BR)CEO}$	-45 -25	— —	— —	Vdc
Emitter–Base Breakdown Voltage ($I_E = -100$ μ Adc, $I_C = 0$)	BC307,B,C BC308C	$V_{(BR)EBO}$	-5.0 -5.0	— —	— —	Vdc
Collector–Emitter Leakage Current ($V_{CES} = -50$ V, $V_{BE} = 0$) ($V_{CES} = -30$ V, $V_{BE} = 0$) ($V_{CES} = -50$ V, $V_{BE} = 0$) $T_A = 125^\circ\text{C}$ ($V_{CES} = -30$ V, $V_{BE} = 0$) $T_A = 125^\circ\text{C}$	BC307,B,C BC308C BC307,B,C BC308C	I_{CES}	— — — —	-0.2 -0.2 -0.2 -0.2	-15 -15 -4.0 -4.0	nAdc μA

BC307 BC307B BC307C BC308C

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

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS					
DC Current Gain (I _C = -10 μAdc, V _{CE} = -5.0 Vdc)	h _{FE}	—	150	—	—
	BC307B	—	270	—	—
	BC307C/308C	—	—	—	—
(I _C = -2.0 mAdc, V _{CE} = -5.0 Vdc)	BC307	120	—	800	—
	BC307B/308B	200	290	460	—
	BC307C/308C	420	500	800	—
(I _C = -100 mAdc, V _{CE} = -5.0 Vdc)	BC307B	—	180	—	—
	BC307C/308C	—	300	—	—
Collector–Emitter Saturation Voltage (I _C = -10 mAdc, I _B = -0.5 mAdc) (I _C = -10 mAdc, I _B = see Note 1) (I _C = -100 mAdc, I _B = -5.0 mAdc)	V _{CE(sat)}	—	-0.10	-0.3	Vdc
		—	-0.30	-0.6	
		—	-0.25	—	
Base–Emitter Saturation Voltage (I _C = -10 mAdc, I _B = -0.5 mAdc) (I _C = -100 mAdc, I _B = -5.0 mAdc)	V _{BE(sat)}	—	-0.7	—	Vdc
		—	-1.0	—	
Base–Emitter On Voltage (I _C = -2.0 mAdc, V _{CE} = -5.0 Vdc)	V _{BE(on)}	-0.55	-0.62	-0.7	Vdc

DYNAMIC CHARACTERISTICS

Current–Gain — Bandwidth Product (I _C = -10 mAdc, V _{CE} = -5.0 Vdc, f = 100 MHz)	f _T	—	280	—	MHz
	BC307,B,C	—	320	—	
	BC308C	—	—	—	
Common Base Capacitance (V _{CB} = -10 Vdc, I _C = 0, f = 1.0 MHz)	C _{cbo}	—	—	6.0	pF
Noise Figure (I _C = -0.2 mAdc, V _{CE} = -5.0 Vdc, R _S = 2.0 kΩ, f = 1.0 kHz)	NF	—	2.0	10	dB
(I _C = -0.2 mAdc, V _{CE} = -5.0 Vdc, R _S = 2.0 kΩ, f = 1.0 kHz, f = 200 Hz)	BC307,B,C	—	2.0	10	
	BC308C	—	2.0	10	

1. I_C = -10 mAdc on the constant base current characteristic, which yields the point I_C = -11 mAdc, V_{CE} = -1.0 V.

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TYPICAL CHARACTERISTICS

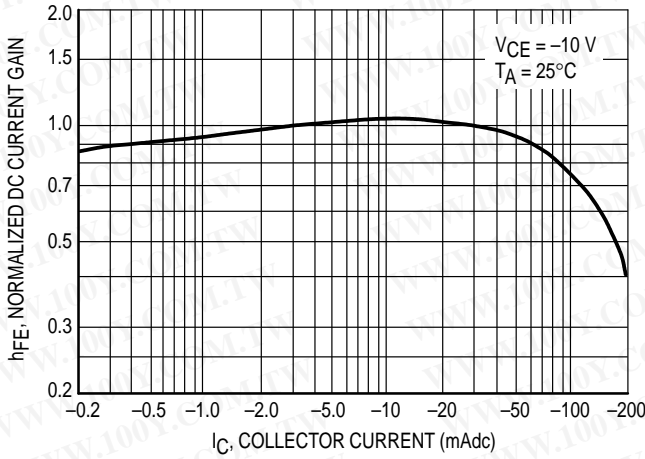


Figure 1. Normalized DC Current Gain

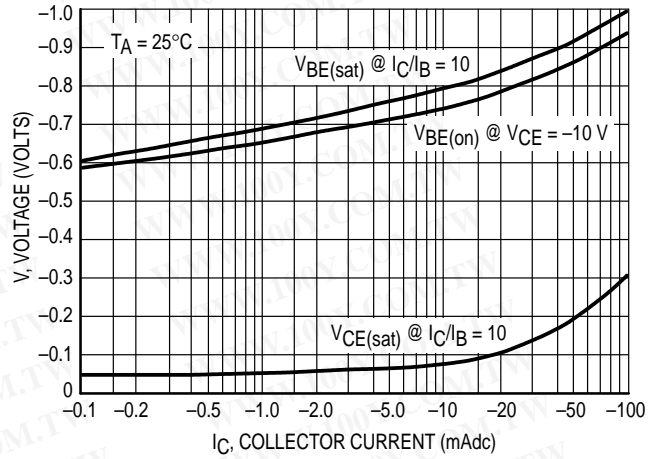


Figure 2. "Saturation" and "On" Voltages

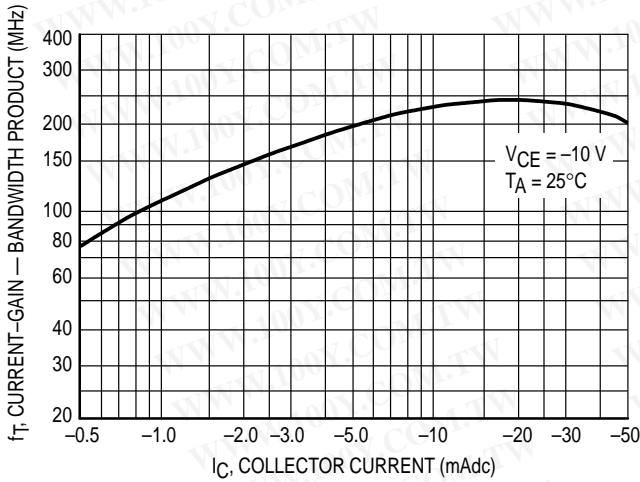


Figure 3. Current-Gain — Bandwidth Product

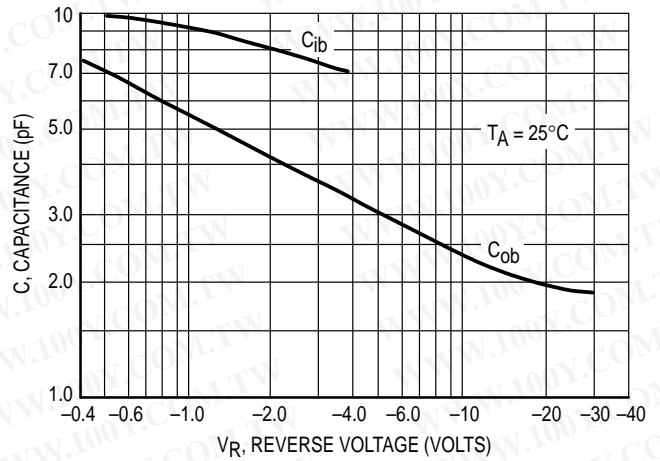


Figure 4. Capacitances

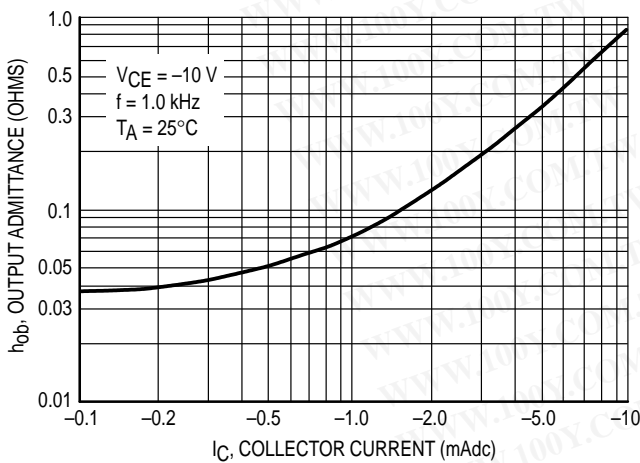


Figure 5. Output Admittance

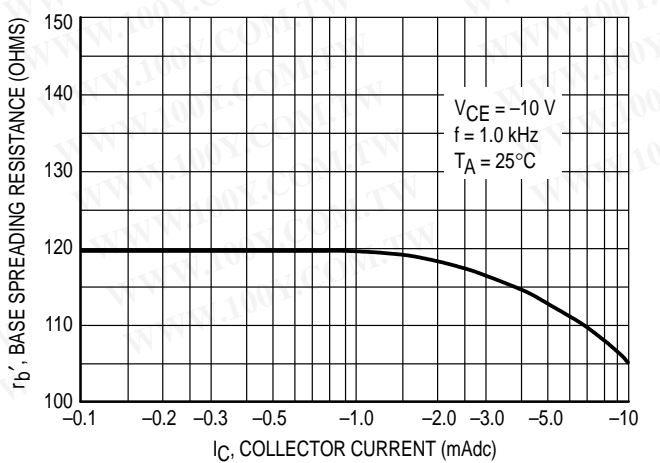
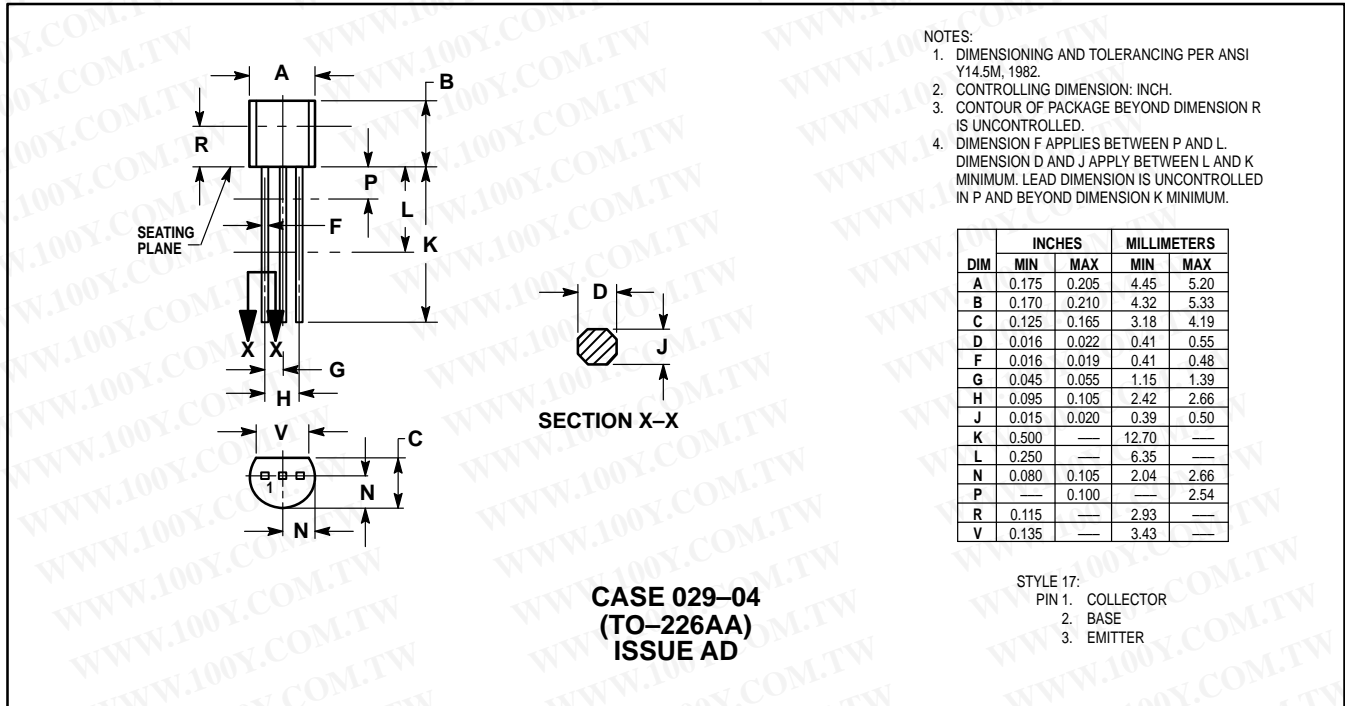


Figure 6. Base Spreading Resistance

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PACKAGE DIMENSIONS



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