

BC237, BC237B, BC237C, BC239C

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage ($I_C = 2.0\text{ mA}$, $I_B = 0$)	BC237 BC239 $V_{(BR)CEO}$	45 25	– –	– –	V
Emitter–Base Breakdown Voltage ($I_E = 100\text{ }\mu\text{A}$, $I_C = 0$)	BC237 BC239 $V_{(BR)EBO}$	6.0 5.0	– –	– –	V
Collector Cutoff Current ($V_{CE} = 30\text{ V}$, $V_{BE} = 0$) ($V_{CE} = 50\text{ V}$, $V_{BE} = 0$) ($V_{CE} = 30\text{ V}$, $V_{BE} = 0$) $T_A = 125^\circ\text{C}$ ($V_{CE} = 50\text{ V}$, $V_{BE} = 0$) $T_A = 125^\circ\text{C}$	BC239 BC237 BC239 BC237	– – – –	0.2 0.2 0.2 0.2	15 15 4.0 4.0	nA μA
ON CHARACTERISTICS					
DC Current Gain ($I_C = 10\text{ }\mu\text{A}$, $V_{CE} = 5.0\text{ V}$) ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$) ($I_C = 100\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	BC237B BC237C/239C BC237 BC237B BC237C/239C BC237B BC237C/239C	– – 120 200 380 – –	150 270 – 290 500 180 300	– – 800 460 800 – –	–
Collector–Emitter On Voltage ($I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$) ($I_C = 100\text{ mA}$, $I_B = 5.0\text{ mA}$)	BC237/BC239 BC237/BC239	– –	0.07 0.2	0.2 0.6	V
Base–Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$) ($I_C = 100\text{ mA}$, $I_B = 5.0\text{ mA}$)		– –	0.6 –	0.83 1.05	V
Base–Emitter On Voltage ($I_C = 100\text{ }\mu\text{A}$, $V_{CE} = 5.0\text{ V}$) ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$) ($I_C = 100\text{ mA}$, $V_{CE} = 5.0\text{ V}$)		– 0.55 –	0.5 0.62 0.83	– 0.7 –	V
DYNAMIC CHARACTERISTICS					
Current–Gain — Bandwidth Product ($I_C = 0.5\text{ mA}$, $V_{CE} = 3.0\text{ V}$, $f = 100\text{ MHz}$) ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 100\text{ MHz}$)	BC237 BC239 BC237 BC239	– – 150 150	100 140 200 280	– – – –	MHz
Collector–Base Capacitance ($V_{CB} = 10\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)		–	–	4.5	pF
Emitter–Base Capacitance ($V_{EB} = 0.5\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)		–	8.0	–	pF
Noise Figure ($I_C = 0.2\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $R_S = 2.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$) ($I_C = 0.2\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $R_S = 2.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $\Delta f = 200\text{ Hz}$)	BC239 BC237 BC239	– – –	2.0 2.0 2.0	4.0 10 4.0	dB

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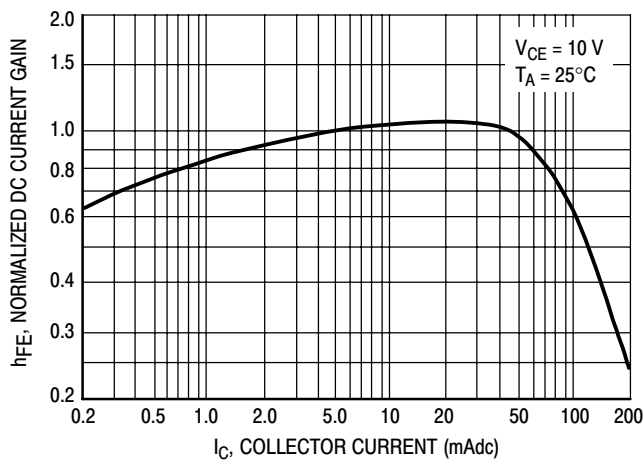


Figure 1. Normalized DC Current Gain

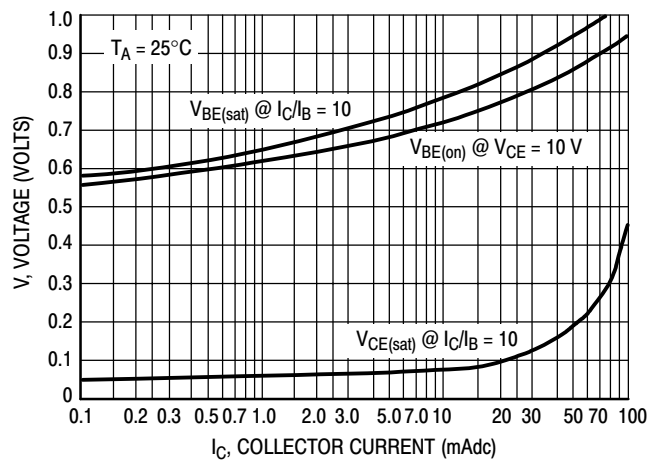


Figure 2. "Saturation" and "On" Voltages

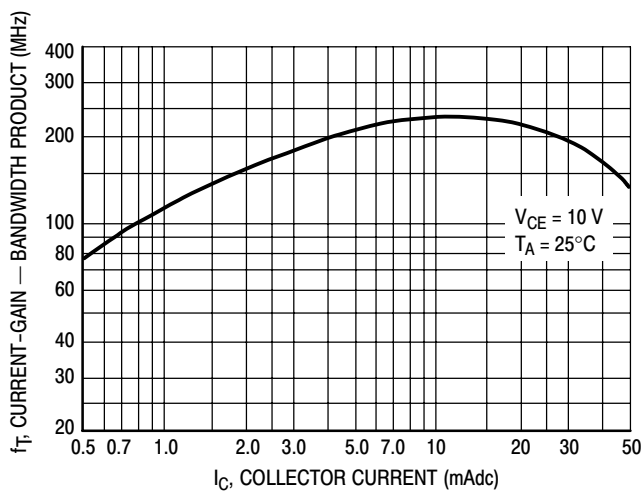


Figure 3. Current-Gain — Bandwidth Product

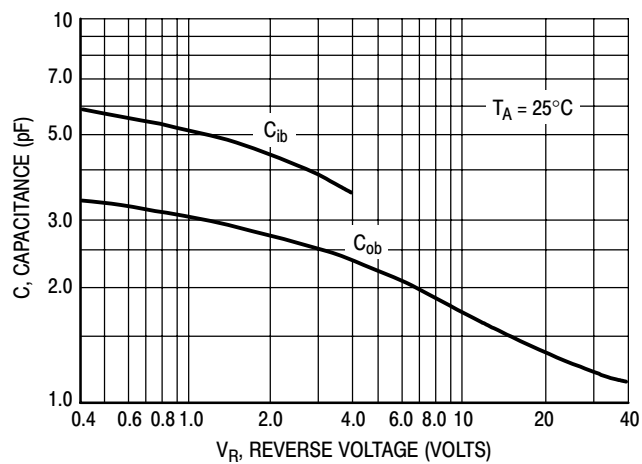


Figure 4. Capacitances

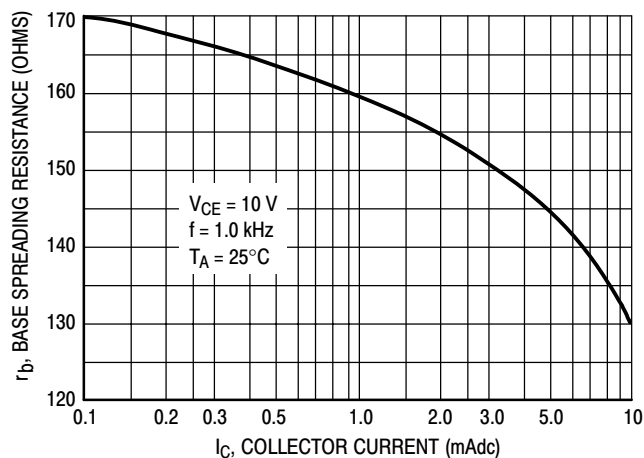


Figure 5. Base Spreading Resistance

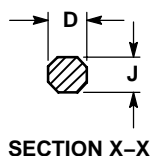
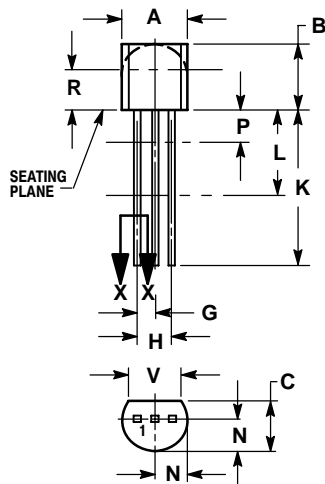
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PACKAGE DIMENSIONS

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
E	0.045	0.055	1.15	1.39
F	0.095	0.105	2.42	2.66
G	0.015	0.020	0.39	0.50
H	0.500	---	12.70	---
I	0.250	---	6.35	---
J	0.080	0.105	2.04	2.66
K	---	0.100	---	2.54
L	0.115	---	2.93	---
M	0.135	---	3.43	---

STYLE 17:

1. COLLECTOR
2. BASE
3. EMITTER

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