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

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

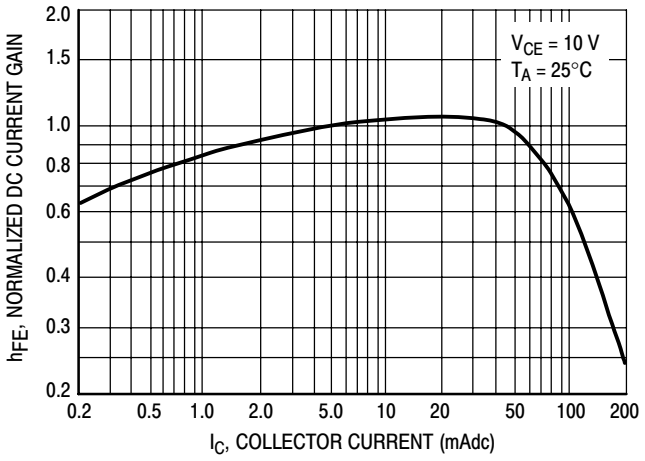


Figure 1. Normalized DC Current Gain

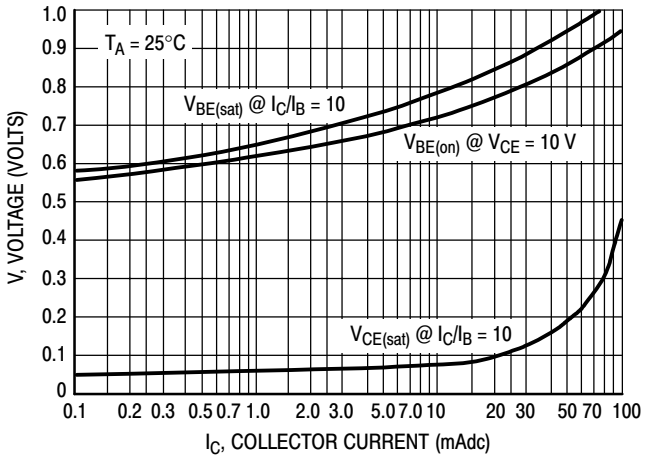


Figure 2. “Saturation” and “On” Voltages

Figure 3. Current−Gain — Bandwidth Product

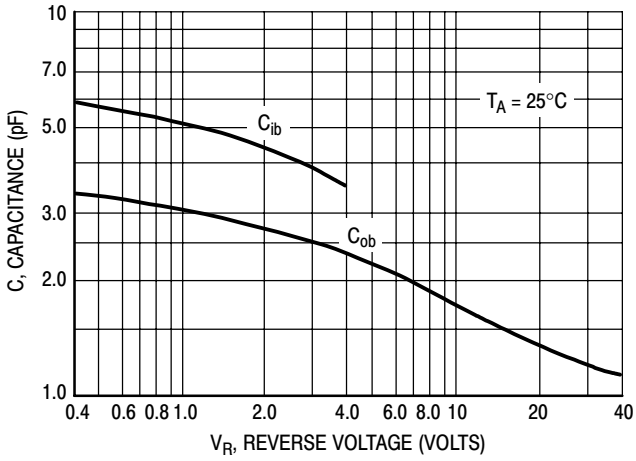


Figure 4. Capacitances

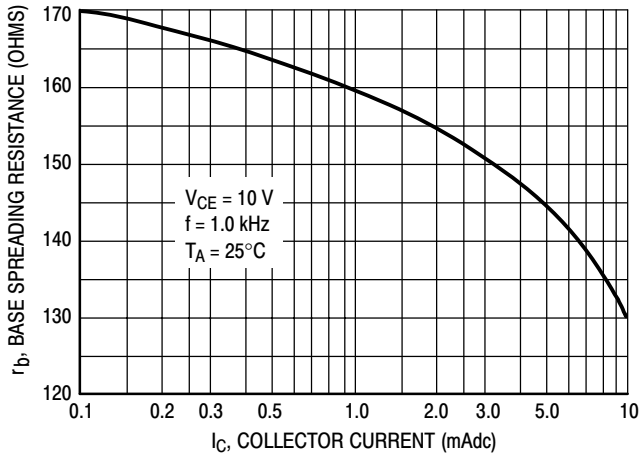
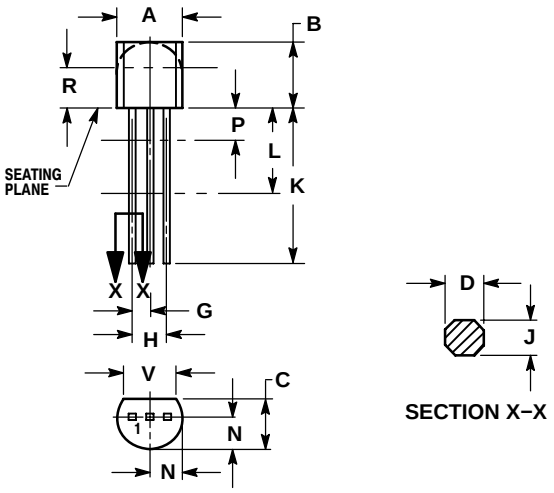


Figure 5. Base Spreading Resistance

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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