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[BC337-40](#)

**EN**

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**DE**

Dieses Datenblatt wird vom  
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**FR**

Cette fiche technique est  
présentée par le fabricant

# Amplifier Transistors

## NPN Silicon

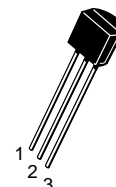
### MAXIMUM RATINGS

Rating	Symbol	BC337	BC338	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/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.5	12	Watt mW/°C
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	–55 to +150		°C

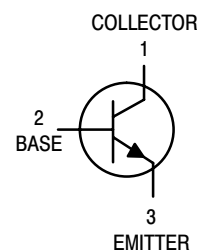
### THERMAL CHARACTERISTICS

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

**BC337,  
BC337-16,  
BC337-25,  
BC337-40,  
BC338-25**



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



### 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 ( $I_C = 10\text{ mA}$ , $I_B = 0$ )	BC337 BC338	$V_{(BR)CEO}$	45 25	– –	– –	Vdc
Collector–Emitter Breakdown Voltage ( $I_C = 100\text{ }\mu\text{A}$ , $I_E = 0$ )	BC337 BC338	$V_{(BR)CES}$	50 30	– –	– –	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 10\text{ }\mu\text{A}$ , $I_C = 0$ )		$V_{(BR)EBO}$	5.0	–	–	Vdc
Collector Cutoff Current ( $V_{CB} = 30\text{ V}$ , $I_E = 0$ ) ( $V_{CB} = 20\text{ V}$ , $I_E = 0$ )	BC337 BC338	$I_{CBO}$	– –	– –	100 100	nAdc
Collector Cutoff Current ( $V_{CE} = 45\text{ V}$ , $V_{BE} = 0$ ) ( $V_{CE} = 25\text{ V}$ , $V_{BE} = 0$ )	BC337 BC338	$I_{CES}$	– –	– –	100 100	nAdc
Emitter Cutoff Current ( $V_{EB} = 4.0\text{ V}$ , $I_C = 0$ )		$I_{EBO}$	–	–	100	nAdc

# BC337, BC337-16, BC337-25, BC337-40, BC338-25

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

Characteristic	Symbol	Min	Typ	Max	Unit	
ON CHARACTERISTICS						
DC Current Gain (I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 1.0 V)	h <sub>FE</sub>	BC337	100	—	630	—
		BC337–16	100	—	250	
		BC337–25/BC338–25	160	—	400	
		BC337–40	250	—	630	
(I <sub>C</sub> = 300 mA, V <sub>CE</sub> = 1.0 V)			60	—	—	
Base–Emitter On Voltage (I <sub>C</sub> = 300 mA, V <sub>CE</sub> = 1.0 V)	V <sub>BE(on)</sub>	—	—	1.2	Vdc	
Collector–Emitter Saturation Voltage (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA)	V <sub>CE(sat)</sub>	—	—	0.7	Vdc	

## SMALL-SIGNAL CHARACTERISTICS

Output Capacitance ( $V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ob}$	—	15	—	pF
Current-Gain – Bandwidth Product ( $I_C = 10\text{ mA}$ , $V_{CE} = 5.0\text{ V}$ , $f = 100\text{ MHz}$ )	$f_T$	—	210	—	MHz

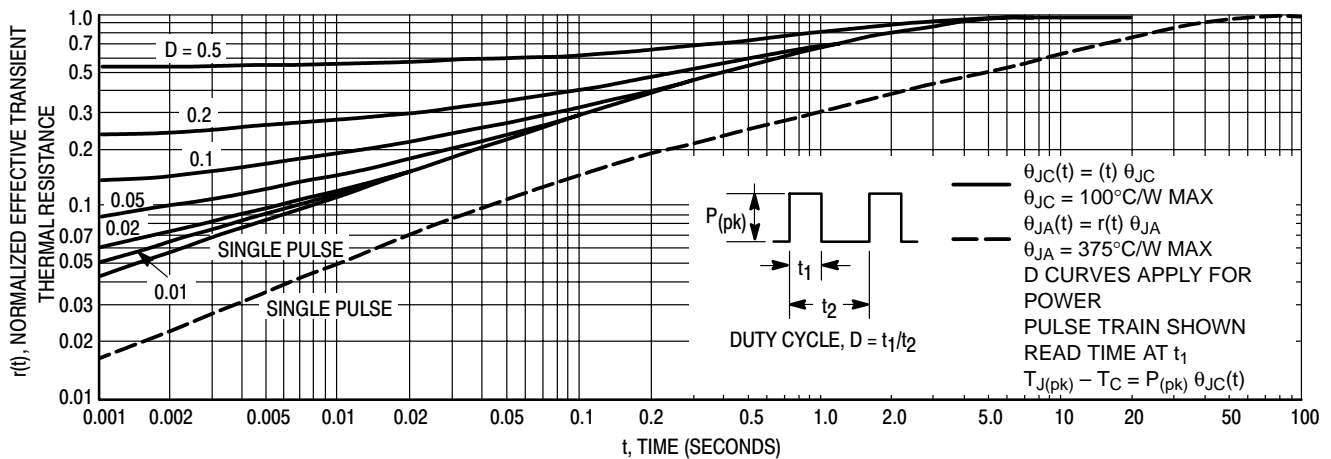


Figure 1. Thermal Response

# BC337, BC337-16, BC337-25, BC337-40, BC338-25

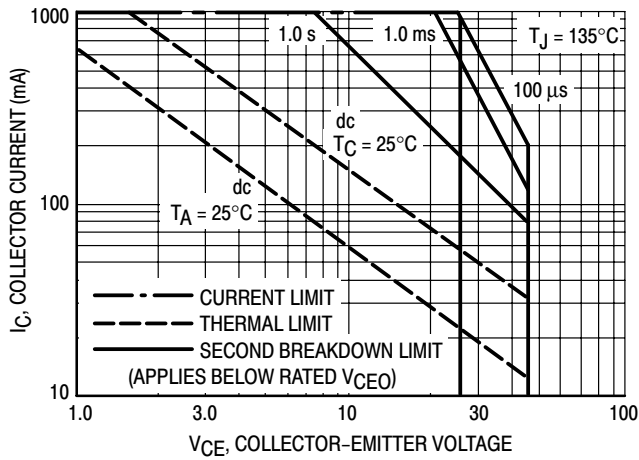


Figure 2. Active Region – Safe Operating Area

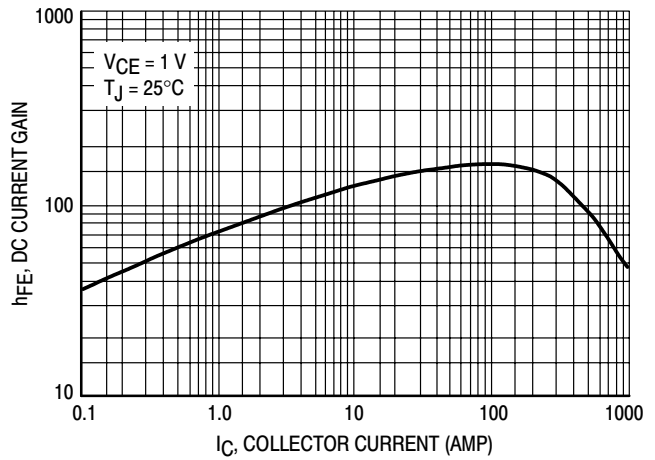


Figure 3. DC Current Gain

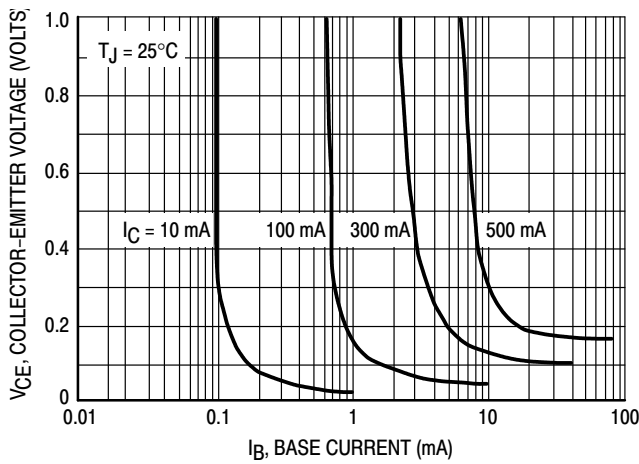


Figure 4. Saturation Region

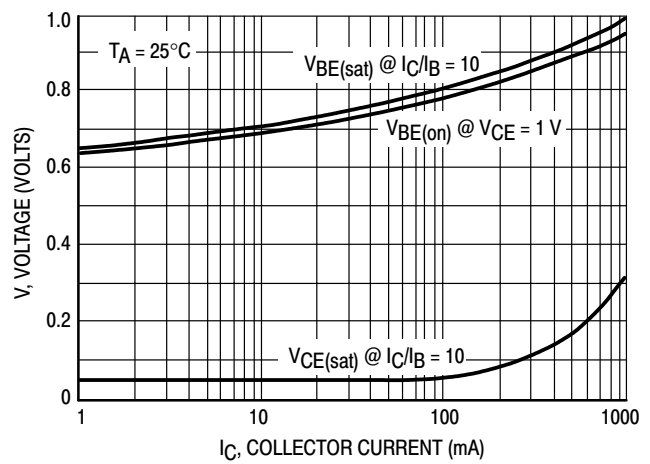


Figure 5. "On" Voltages

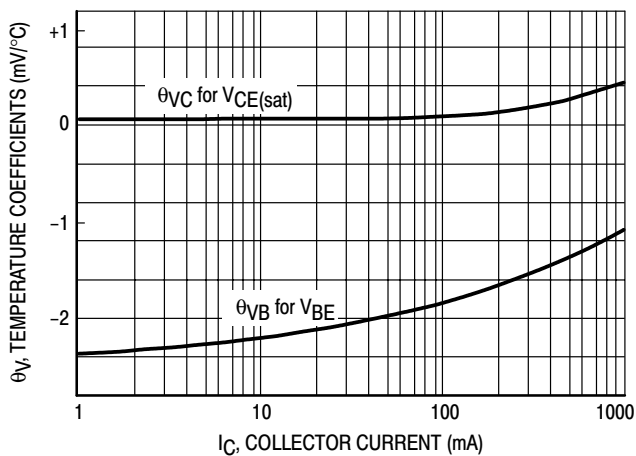


Figure 6. Temperature Coefficients

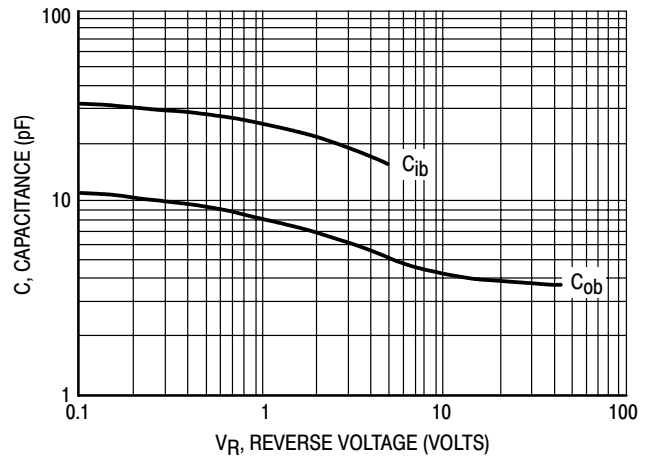
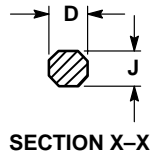
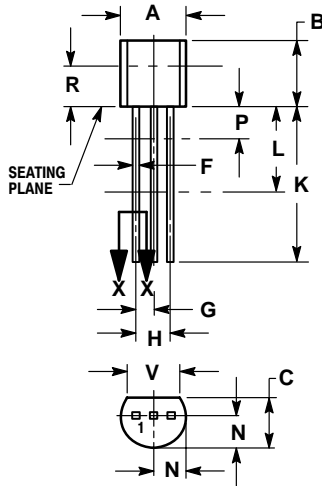


Figure 7. Capacitances

## PACKAGE DIMENSIONS


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

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

## 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	---

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