

Amplifier Transistors NPN Silicon

MAXIMUM RATINGS

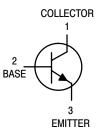
Rating	Symbol	BC337	BC338	Unit
Collector–Emitter Voltage	VCEO	45	25	Vdc
Collector–Base Voltage	VCBO	50	30	Vdc
Emitter-Base Voltage	VEBO	5.0		Vdc
Collector Current – Continuous	IC	800		mAdc
Total Device Dissipation @ T _A = 25°C Derate above 25°C	PD	625 5.0		mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	PD	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	$R_{ heta}$ JC	83.3	°C/W

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





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

Characteristic		Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS						
Collector–Emitter Breakdown Voltage (I _C = 10 mA, I _B = 0)	BC337 BC338	V(BR)CEO	45 25	_ _	_ _	Vdc
Collector–Emitter Breakdown Voltage ($I_C = 100 \mu A, I_E = 0$)	BC337 BC338	V(BR)CES	50 30	_ _	_ _	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10 \mu A, I_C = 0$)		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	ICBO	- -	- -	100 100	nAdc
Collector Cutoff Current (VCE = 45 V, VBE = 0) (VCE = 25 V, VBE = 0)	BC337 BC338	ICES	- -	- -	100 100	nAdc
Emitter Cutoff Current (VEB = 4.0 V, I _C = 0)		I _{EBO}	-	-	100	nAdc

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

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

Characteristic		Symbol	Min	Тур	Max	Unit
ON CHARACTERISTICS		•	•	•		
DC Current Gain (I _C = 100 mA, V _{CE} = 1.0 V) (I _C = 300 mA, V _{CF} = 1.0 V)	BC337 BC337–16 BC337–25/BC338–25 BC337–40	h _{FE}	100 100 160 250 60	- - - -	630 250 400 630	_
Base–Emitter On Voltage (I _C = 300 mA, V _{CE} = 1.0 V)		V _{BE(on)}	_	_	1.2	Vdc
Collector–Emitter Saturation Voltage (I _C = 500 mA, I _B = 50 mA)		VCE(sat)	_	_	0.7	Vdc
SMALL-SIGNAL CHARACTERISTICS						•
Output Capacitance (V _{CB} = 10 V, I _E = 0, f = 1.0 MHz)		C _{ob}	-	15	-	pF
Current–Gain – Bandwidth Product (I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz)		fŢ	_	210	_	MHz

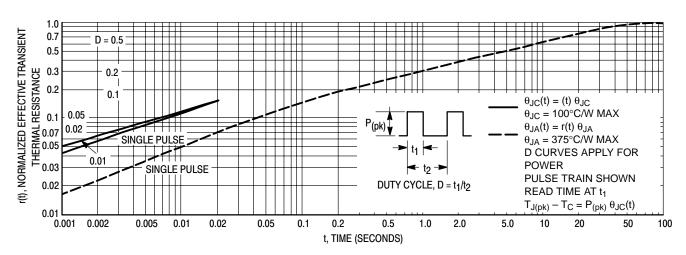


Figure 1. Thermal Response

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

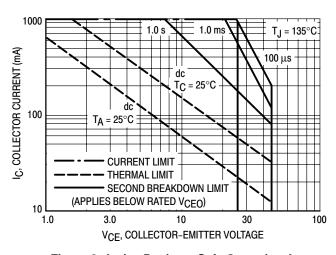


Figure 2. Active Region - Safe Operating Area

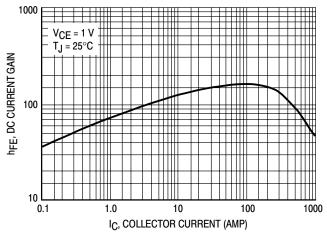


Figure 3. DC Current Gain

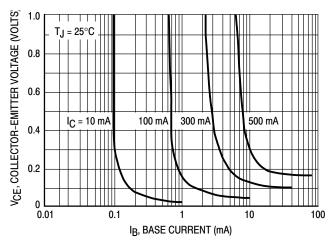


Figure 4. Saturation Region

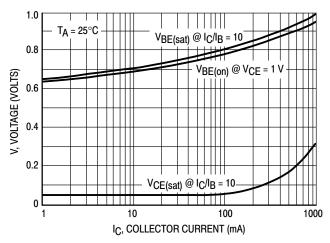


Figure 5. "On" Voltages

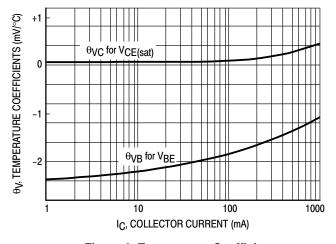


Figure 6. Temperature Coefficients

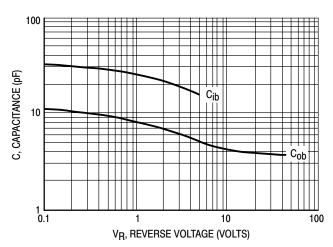
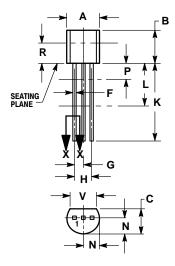


Figure 7. Capacitances

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

PACKAGE DIMENSIONS

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





STYLE 17: PIN 1. COLLECTOR

BASE EMITTER

NOTES:

- NOTES.

 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2 CONTROLLING DIMENSION: INCH.

 3 CONTOUR OF PACKAGE BEYOND DIMENSION R

- IS UNCONTROLLED.
 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

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.175	0.205	4.45	5.20	
В	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	
Н	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		
٧	0.135		3.43		

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