

BC337, BC337-25, BC337-40

Amplifier Transistors

NPN Silicon

Features

- These are Pb-Free Devices

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector – Emitter Voltage	V_{CEO}	45	Vdc
Collector – Base Voltage	V_{CBO}	50	Vdc
Emitter – Base Voltage	V_{EBO}	5.0	Vdc
Collector Current – Continuous	I_C	800	mA dc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	W 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_{JA}	200	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	R_{JC}	83.3	$^\circ\text{C/W}$

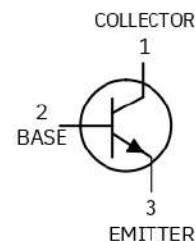
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

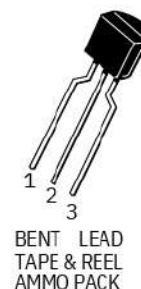
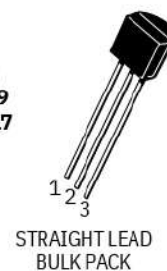


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T0-92
CASE 29
STYLE 17



MARKING DIAGRAM



BC337-xx=Device Code

(Refer to page 4)

A=Assembly Location

Y=Year

WW=Work Week

=Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 4 of this data sheet.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage	V(BR)CE045	—	Vdc		
(IC = 10 mA, IB = 0)					
Collector-Emitter Breakdown Voltage	V(BR)CE50	—	Vdc		
(IC = 100 A, IE = 0)					
Emitter-Base Breakdown Voltage	V(BR)EB05.0	—	Vdc		
(IE = 10 A, IC = 0)					
Collector Cutoff Current	ICBO	—	100nA	dc	
(VCB = 30 V, IE = 0)					
Collector Cutoff Current	ICES	—	100nA	dc	
(VCE = 45 V, VBE = 0)					
Emitter Cutoff Current	IEBO	—	100nA	dc	
(VEB = 4.0 V, IC = 0)					
ON CHARACTERISTICS					
DC Current Gain	hFE	—			
(IC = 100 mA, VCE = 1.0 V)	BC337	100	630		
	BC337-25	160	400		
	BC337-40	250	630		
(IC = 300 mA, VCE = 1.0 V)					
Base-Emitter On Voltage	VBE(on)	—	1.2	Vdc	
(IC = 300 mA, VCE = 1.0 V)					
Collector-Emitter Saturation Voltage	VCE(sat)	—	0.7	Vdc	
(IC = 500 mA, IB = 50 mA)					
SMALL-SIGNAL CHARACTERISTICS					
Output Capacitance	Cob	—	15	pF	
(VCB = 10 V, IE = 0, f = 1.0 MHz)					
Current-Gain - Bandwidth Product	fT	—	210	MHz	
(IC = 10 mA, VCE = 5.0 V, f = 100 MHz)					

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

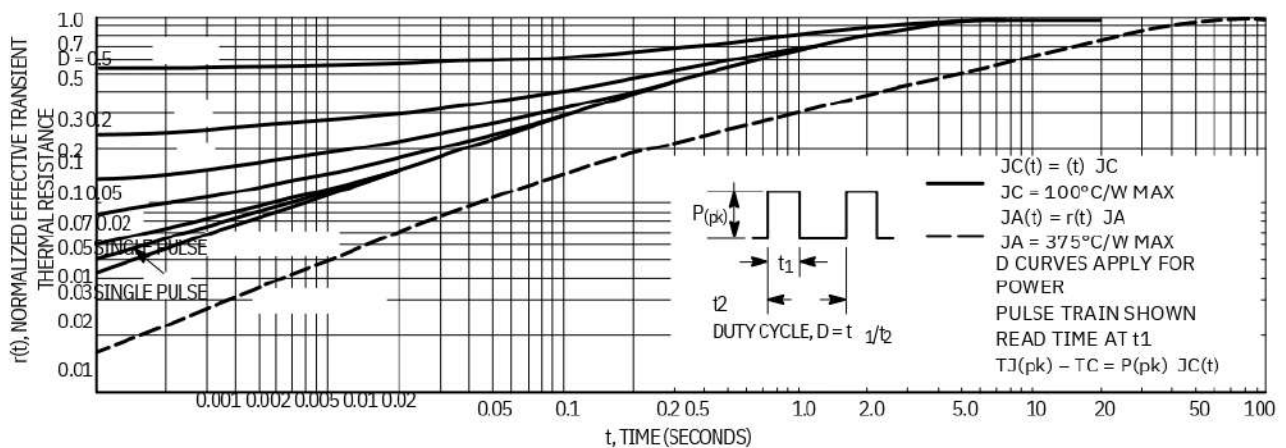


Figure 1. Thermal Response

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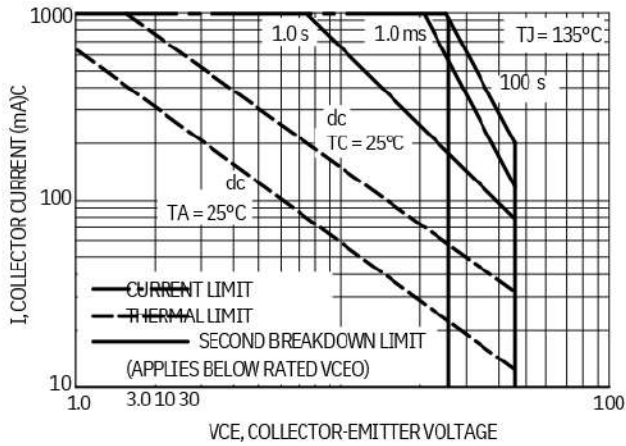


Figure 2. Active Region – Safe Operating Area

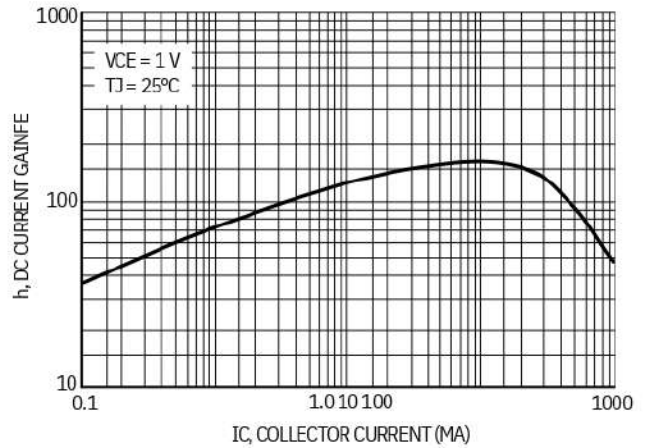


Figure 3. DC Current Gain

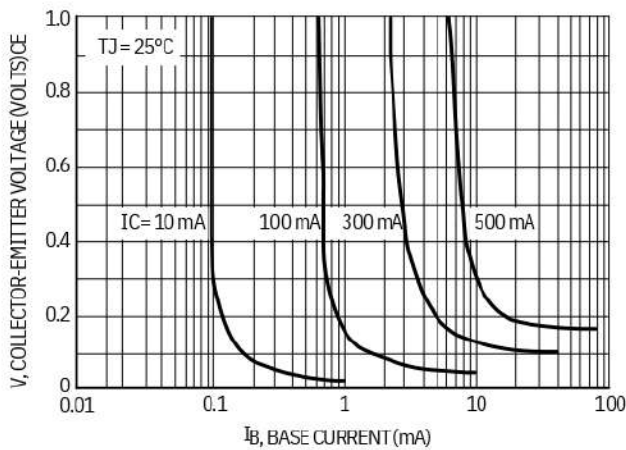


Figure 4. Saturation Region

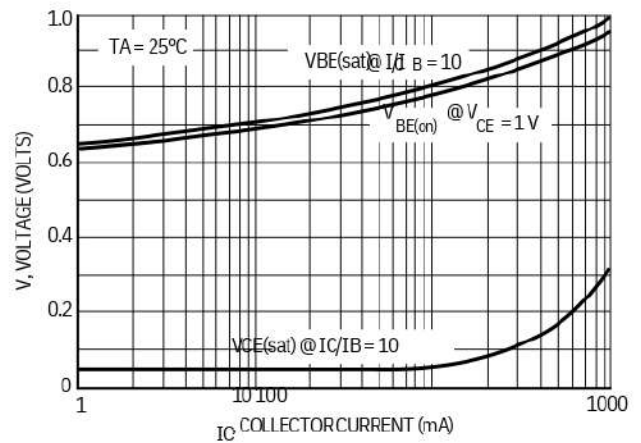


Figure 5. "On" Voltages

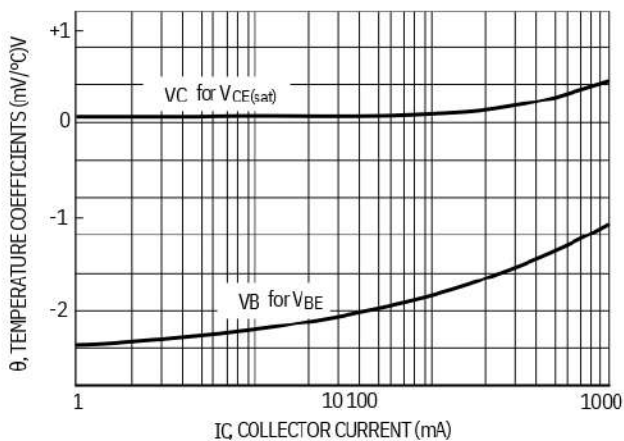


Figure 6. Temperature Coefficients

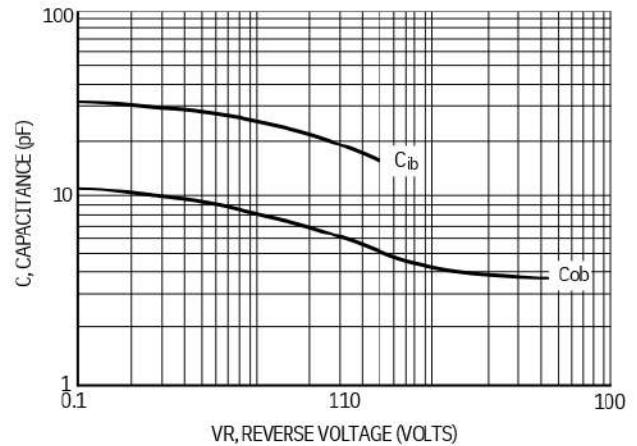


Figure 7. Capacitances

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ORDERING INFORMATION

	Device Marking	Package Shipping†	
BC337G75000 Units / Bulk			
BC337RL1G72000 / Tape & Reel			
BC337-025G7-255000 Units / Bulk			
BC337-25RL1G7-252000 / Tape & Reel			
BC337-25RL1G7-252000 (Pb-Free) / Tape & Reel			
BC337-25ZL1G7-252000 / Ammo Box			
BC337-040G7-405000 Units / Bulk			
BC337-40RL1G7-402000 / Tape & Reel			
BC337-40ZL1G7-402000 / Ammo Box			

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

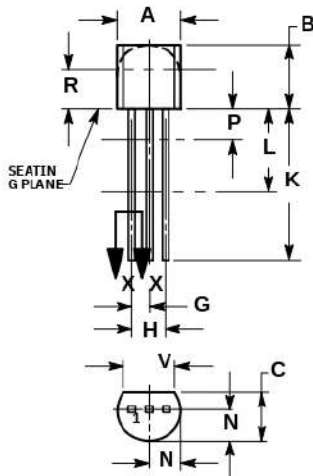
BC337, BC337-25, BC337-40

PACKAGE DIMENSIONS

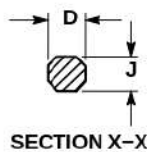
TO-92 (TO-226)

CASE 2-9-11

ISSUE AM



STRAIGHT LEAD
BULK PACK

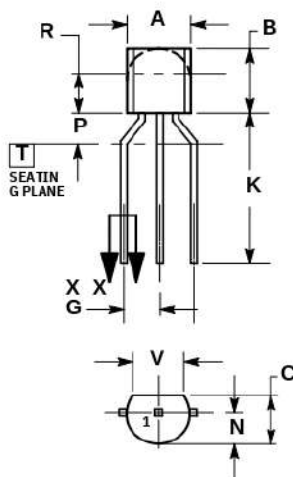


NOTES:

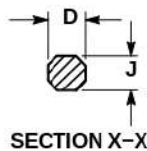
- 1.DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2.CONTROLLING DIMENSION: INCH.
- 3.CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
- 4.LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

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
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	---



BENT LEAD
TAPE & REEL
AMMO PACK



NOTES:

- 1.DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
- 2.CONTROLLING DIMENSION: MILLIMETERS.
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MILLIMETERS

DIM	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.53
E	1.15	1.39
F	2.42	2.66
G	0.39	0.50
H	12.70	---
I	6.35	---
J	2.04	2.66
K	2.54	---
L	2.93	---
M	3.43	---

STYLE 17:

2. BASE
3. EMITTER

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