

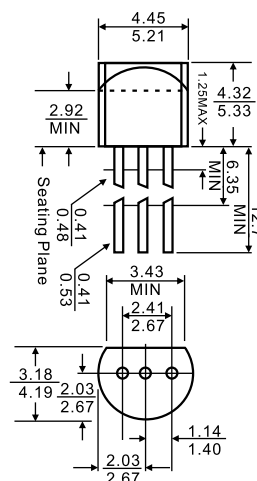
# BC337/338(NPN)

TO-92 Bipolar Transistors



1. COLLECTOR
2. BASE
3. EMITTER

## TO-92



Dimensions in inches and (millimeters)

## Features

- ◇ Power dissipation

### MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage <b>BC337</b>	50	V
	<b>BC338</b>	30	
V <sub>CEO</sub>	Collector-Emitter Voltage <b>BC337</b>	45	V
	<b>BC338</b>	25	
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current -Continuous	800	mA
P <sub>D</sub>	Total Device Dissipation	625	mW
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>CBO</sub>	I <sub>C</sub> = 100uA, I <sub>E</sub> =0	50			V
			30			V
Collector-emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	45			V
			25			V
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 10uA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 45V, I <sub>E</sub> =0 V <sub>CB</sub> = 25V, I <sub>E</sub> =0			0.1	uA
					0.1	
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> = 40V, I <sub>B</sub> =0 V <sub>CE</sub> = 20V, I <sub>B</sub> =0			0.2	uA
					0.2	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 4 V, I <sub>C</sub> =0			0.1	uA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 100mA	100		630	
			100		250	
			160		400	
			250		630	
DC current gain	h <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 300mA	60			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> = 50mA			0.7	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> =50mA			1.2	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 300mA			1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA f = 100MHz	210			MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0 f=1MHz		15		pF

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## Typical Characteristics

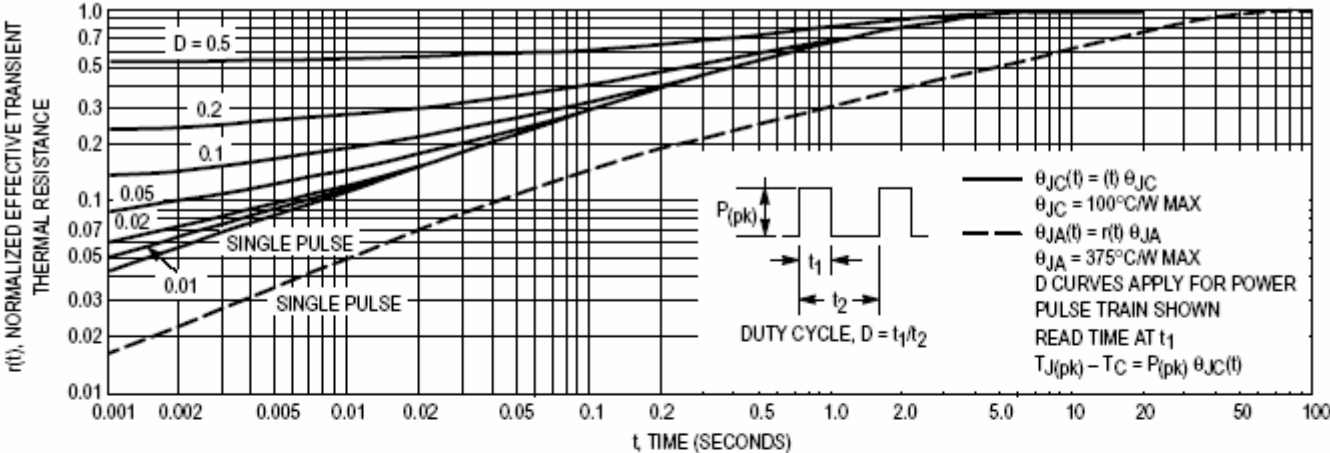


Figure 1. Thermal Response

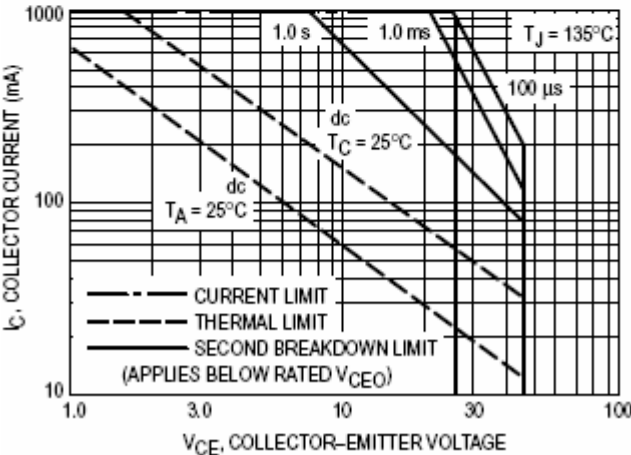


Figure 2. Active Region — Safe Operating Area

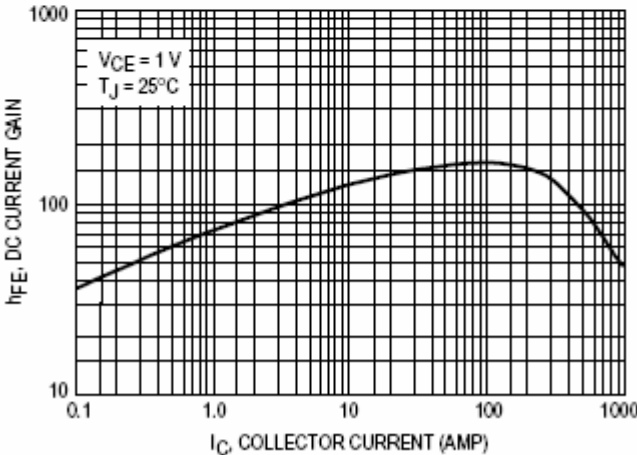


Figure 3. DC Current Gain

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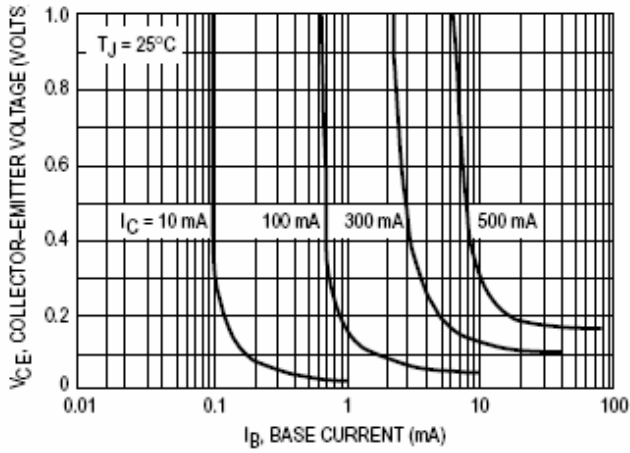


Figure 4. Saturation Region

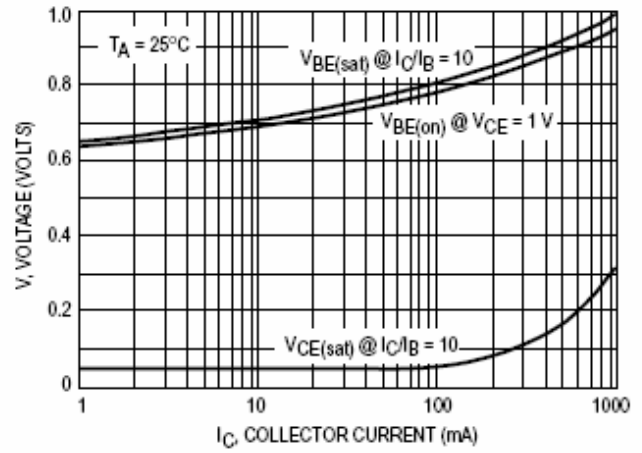


Figure 5. "On" Voltages

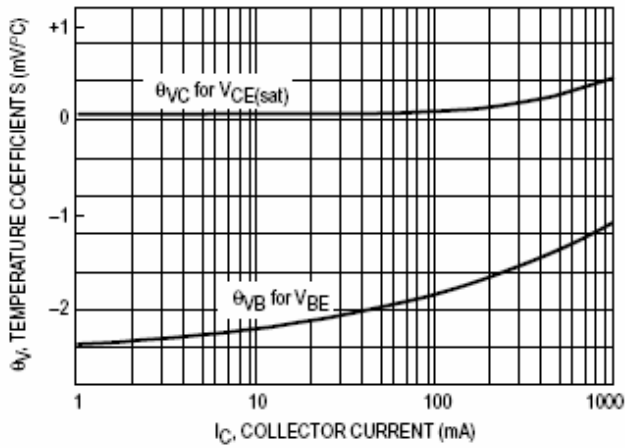


Figure 6. Temperature Coefficients

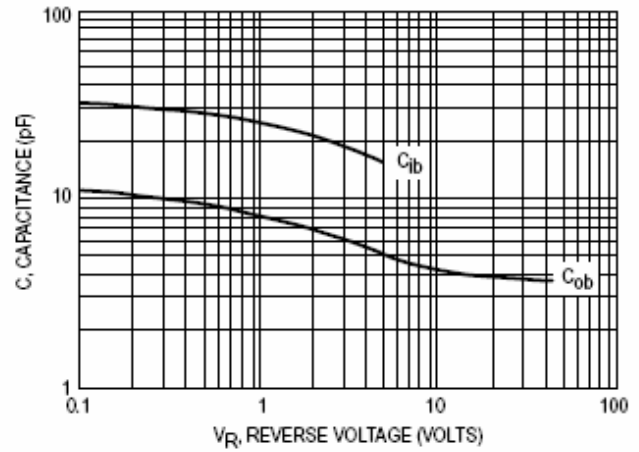


Figure 7. Capacitances

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