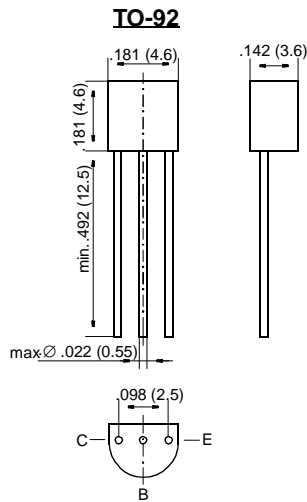


# BC337, BC338

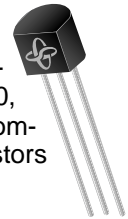
## Small Signal Transistors (NPN)



Dimensions in inches and (millimeters)

### FEATURES

- ◆ NPN Silicon Epitaxial Planar Transistors for switching and amplifier applications. Especially suitable for AF-driver stages and low power output stages.
- ◆ These types are also available subdivided into three groups -16, -25, and -40, according to their DC current gain. As complementary types, the PNP transistors BC327 and BC328 are recommended.
- ◆ On special request, these transistors are also manufactured in the pin configuration TO-18.



### MECHANICAL DATA

**Case:** TO-92 Plastic Package

**Weight:** approx. 0.18 g

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

		Symbol	Value	Unit
Collector-Emitter Voltage	<b>BC337</b>	$V_{CES}$	50	V
	<b>BC338</b>	$V_{CES}$	30	V
Collector-Emitter Voltage	<b>BC337</b>	$V_{CEO}$	45	V
	<b>BC338</b>	$V_{CEO}$	25	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current		$I_C$	800	mA
Peak Collector Current		$I_{CM}$	1	A
Base Current		$I_B$	100	mA
Power Dissipation at $T_{amb} = 25\text{ °C}$		$P_{tot}$	625 <sup>1)</sup>	mW
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_S$	-65 to +150	°C

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

# BC337, BC338

## ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

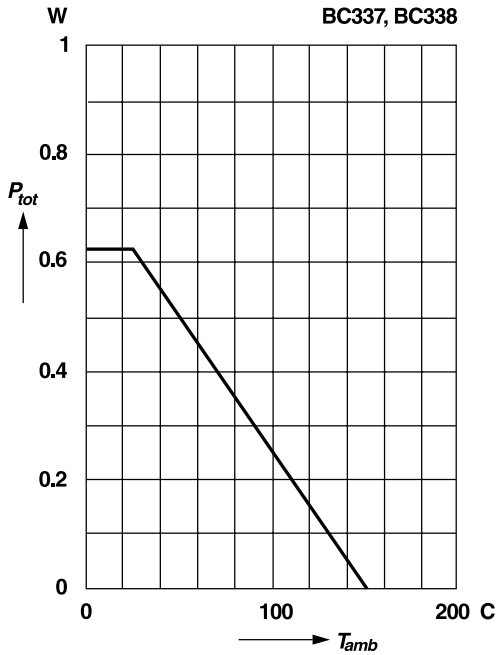
	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 1\text{ V}$ , $I_C = 100\text{ mA}$					
<b>Current Gain Group -16</b>	$h_{FE}$	100	160	250	
<b>-25</b>	$h_{FE}$	160	250	400	–
<b>-40</b>	$h_{FE}$	250	400	630	–
at $V_{CE} = 1\text{ V}$ , $I_C = 300\text{ mA}$					
<b>Current Gain Group -16</b>	$h_{FE}$	60	130	–	–
<b>-25</b>	$h_{FE}$	100	200	–	–
<b>-40</b>	$h_{FE}$	170	320	–	–
Collector-Emitter Cutoff Current at $V_{CE} = 45\text{ V}$	$I_{CES}$	–	2	100	nA
at $V_{CE} = 25\text{ V}$	$I_{CES}$	–	2	100	nA
at $V_{CE} = 45\text{ V}$ , $T_{amb} = 125\text{ °C}$	$I_{CES}$	–	–	10	$\mu\text{A}$
at $V_{CE} = 25\text{ V}$ , $T_{amb} = 125\text{ °C}$	$I_{CES}$	–	–	10	$\mu\text{A}$
Collector-Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	20	–	–	V
	$V_{(BR)CEO}$	45	–	–	V
Collector-Emitter Breakdown Voltage at $I_C = 0.1\text{ mA}$	$V_{(BR)CES}$	30	–	–	V
	$V_{(BR)CES}$	50	–	–	V
Emitter-Base Breakdown Voltage at $I_E = 0.1\text{ mA}$	$V_{(BR)EBO}$	5	–	–	V
Collector Saturation Voltage at $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CEsat}$	–	–	0.7	V
Base-Emitter Voltage at $V_{CE} = 1\text{ V}$ , $I_C = 300\text{ mA}$	$V_{BE}$	–	–	1.2	V
Gain-Bandwidth Product at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 50\text{ MHz}$	$f_T$	–	100	–	MHz
Collector-Base Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{CBO}$	–	12	–	pF
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	–	–	200 <sup>1)</sup>	K/W

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

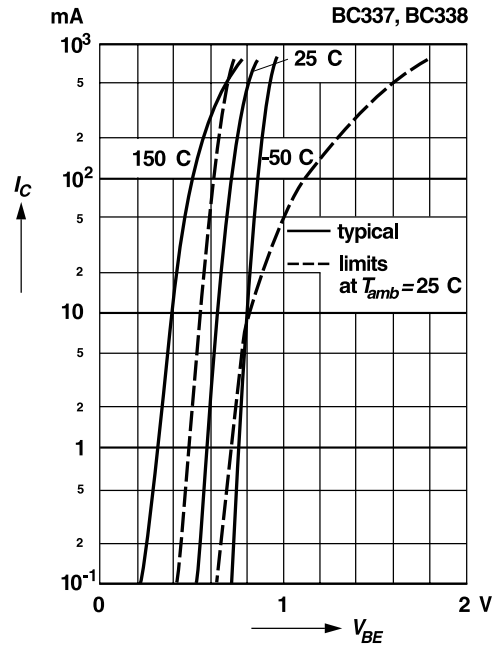
# RATINGS AND CHARACTERISTIC CURVES BC337, BC338

## Admissible power dissipation versus ambient temperature

Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

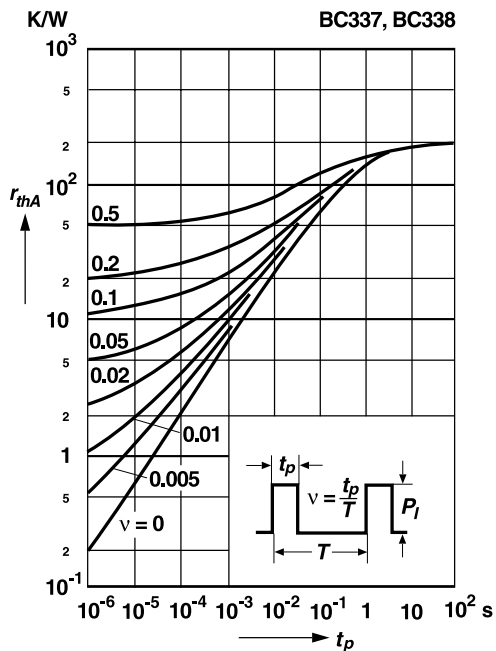


## Collector current versus base-emitter voltage

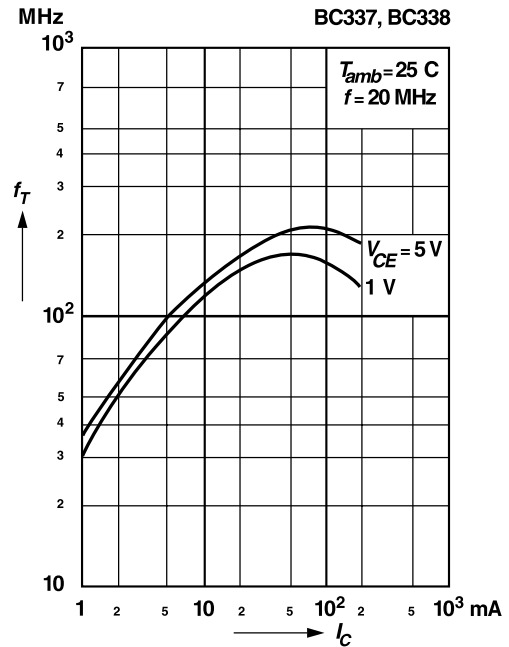


## Pulse thermal resistance versus pulse duration

Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

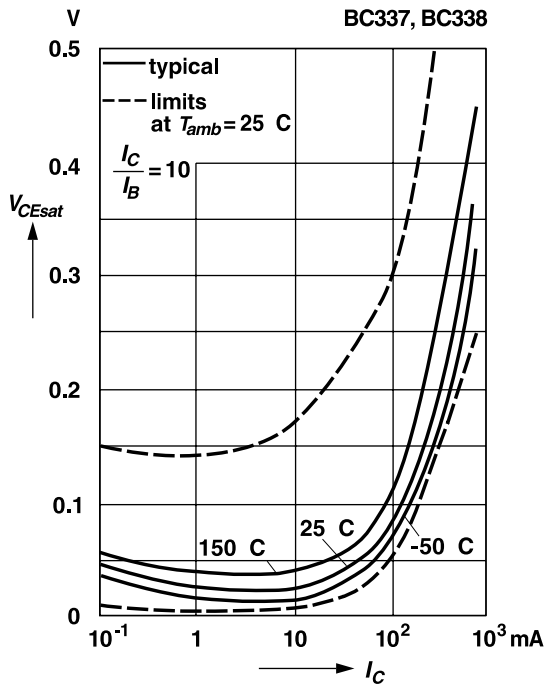


## Gain-bandwidth product versus collector current

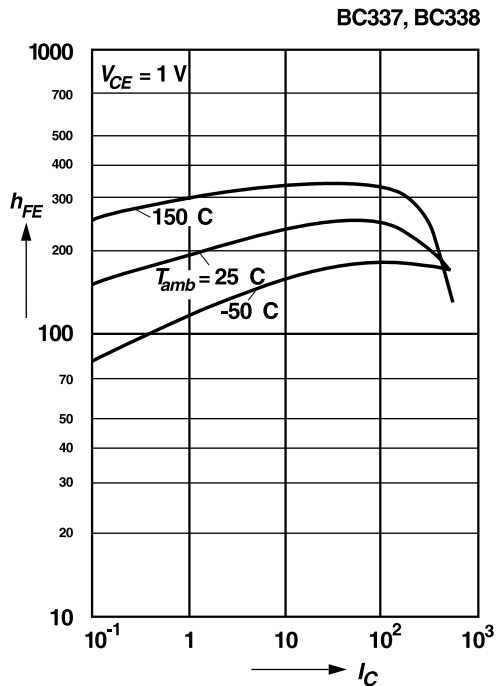


# RATINGS AND CHARACTERISTIC CURVES BC337, BC338

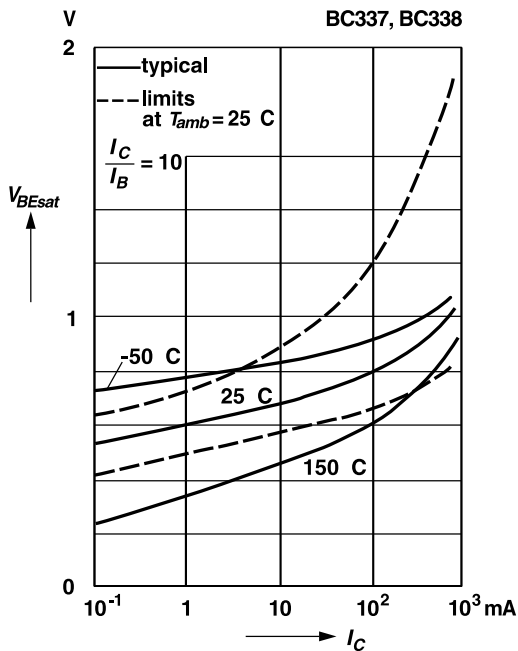
Collector saturation voltage versus collector current



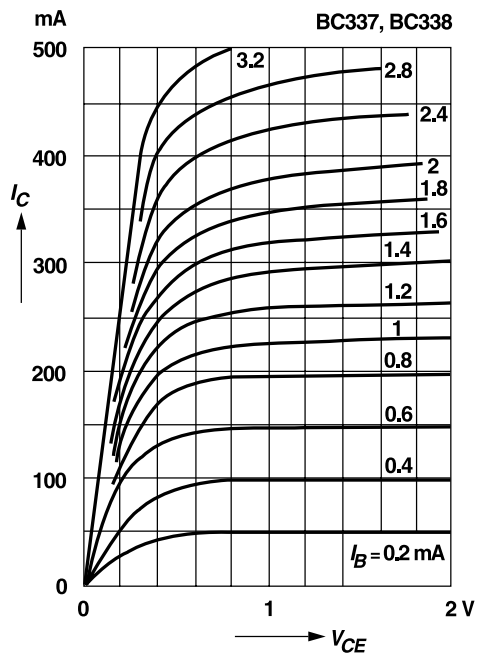
DC current gain versus collector current



Base saturation voltage versus collector current

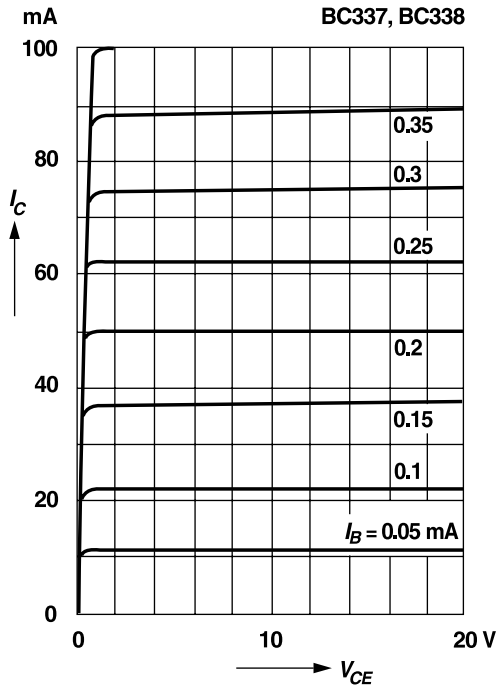


Common emitter collector characteristics



# RATINGS AND CHARACTERISTIC CURVES BC337, BC338

Common emitter  
collector characteristics



Common emitter  
collector characteristics

