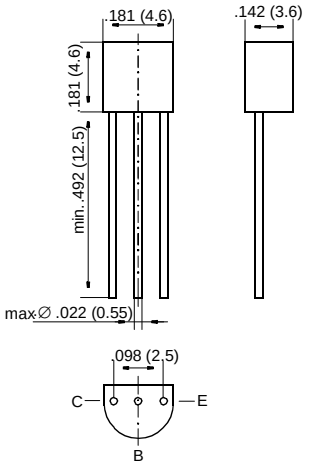
BC337, BC338

Small Signal Transistors (NPN)

TO-92



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	**BC337** **BC338**	V_{CES} V_{CES}	50 30	V V
Collector-Emitter Voltage	**BC337** **BC338**	V_{CEO} V_{CEO}	45 25	V 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 °C		P_{tot}	625[1)]	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_S	–65 to +150	°C

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

ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

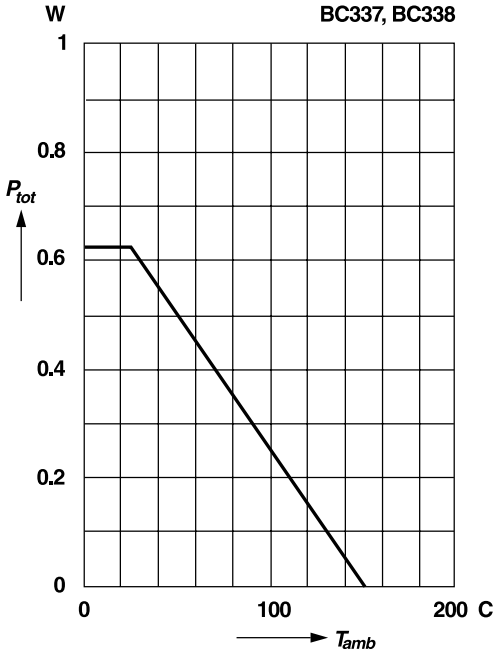
	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 1 V, I_C = 100 mA					
Current Gain Group -16	h_{FE}	100	160	250	
-25	h_{FE}	160	250	400	–
-40	h_{FE}	250	400	630	–
at V_{CE} = 1 V, I_C = 300 mA					–
Current Gain Group -16	h_{FE}	60	130	–	
-25	h_{FE}	100	200	–	–
-40	h_{FE}	170	320	–	–
					–
Collector-Emitter Cutoff Current					
at V_{CE} = 45 V **BC337**	I_{CES}	–	2	100	nA
at V_{CE} = 25 V **BC338**	I_{CES}	–	2	100	nA
at V_{CE} = 45 V, T_{amb} = 125 °C **BC337**	I_{CES}	–	–	10	µA
at V_{CE} = 25 V, T_{amb} = 125 °C **BC338**	I_{CES}	–	–	10	µA
Collector-Emitter Breakdown Voltage at I_C = 10 mA **BC338**	$V_{(BR)CEO}$	20	–	–	V
BC337	$V_{(BR)CEO}$	45	–	–	V
Collector-Emitter Breakdown Voltage at I_C = 0.1 mA **BC338**	$V_{(BR)CES}$	30	–	–	V
BC337	$V_{(BR)CES}$	50	–	–	V
Emitter-Base Breakdown Voltage at I_E = 0.1 mA	$V_{(BR)EBO}$	5	–	–	V
Collector Saturation Voltage at I_C = 500 mA, I_B = 50 mA	V_{CEsat}	–	–	0.7	V
Base-Emitter Voltage at V_{CE} = 1 V, I_C = 300 mA	V_{BE}	–	–	1.2	V
Gain-Bandwidth Product at V_{CE} = 5 V, I_C = 10 mA, f = 50 MHz	f_T	–	100	–	MHz
Collector-Base Capacitance at V_{CB} = 10 V, f = 1 MHz	C_{CBO}	–	12	–	pF
Thermal Resistance Junction to Ambient Air	R_{thJA}	–	–	200[1)]	K/W

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

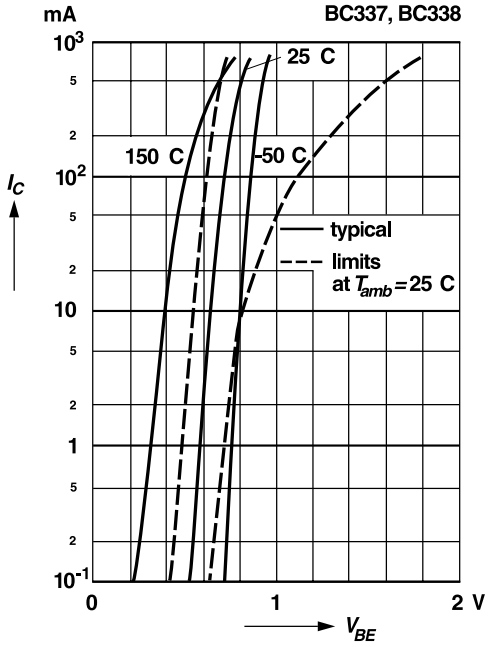
RATINGS AND CHARACTERISTIC CURVES BC337, BC338

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

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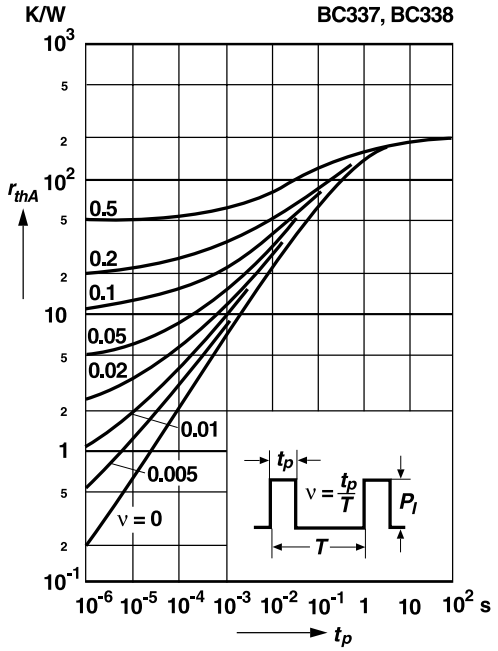
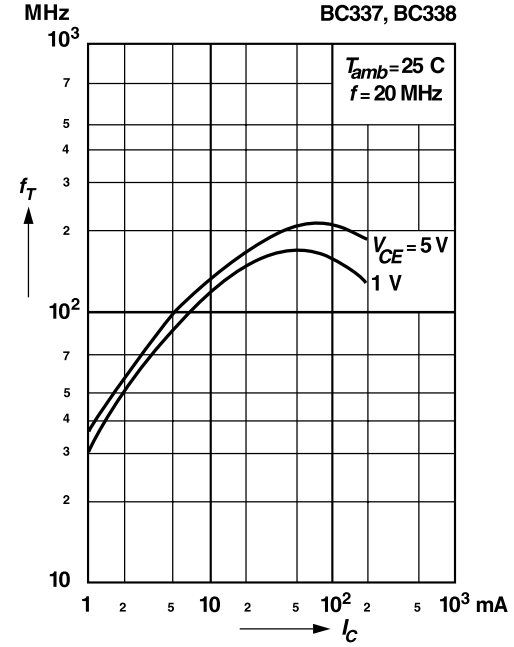
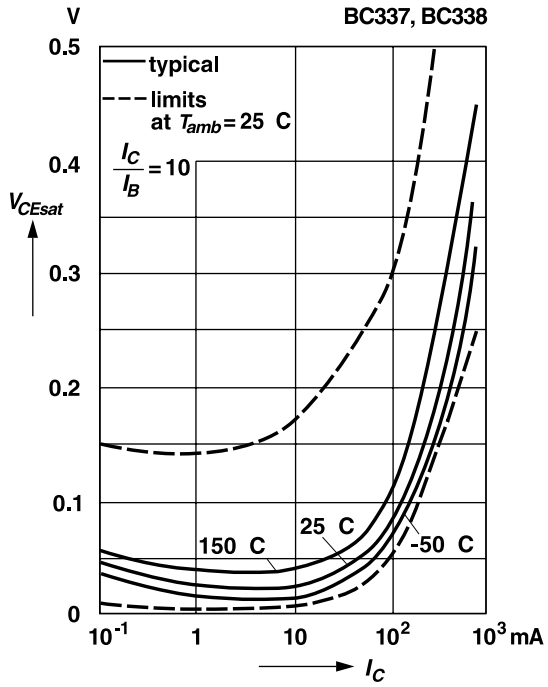


Gain-bandwidth product versus collector current

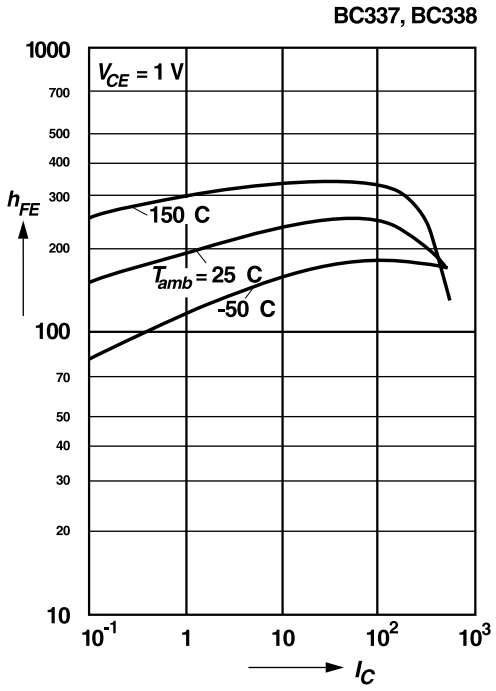


GENERAL SEMICONDUCTOR®

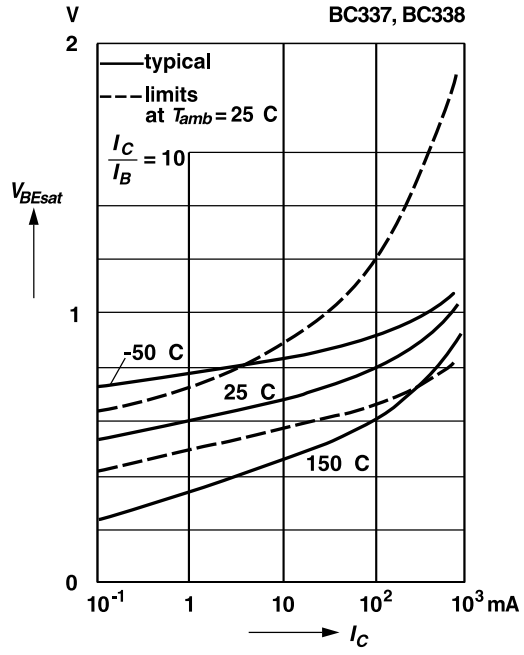
Collector saturation voltage versus collector current



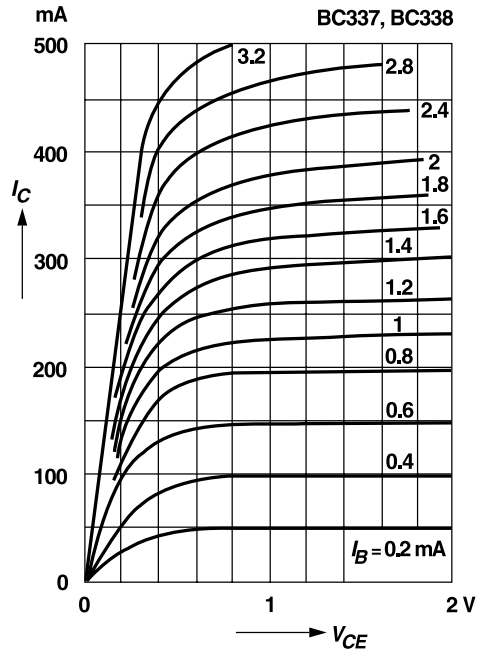
DC current gain versus collector current



Base saturation voltage versus collector current



Common emitter collector characteristics



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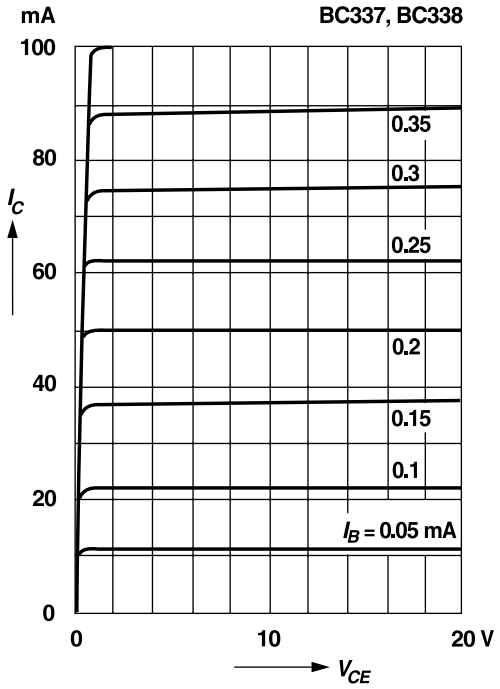
Common emitter collector characteristics



Common emitter collector characteristics