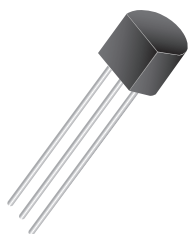
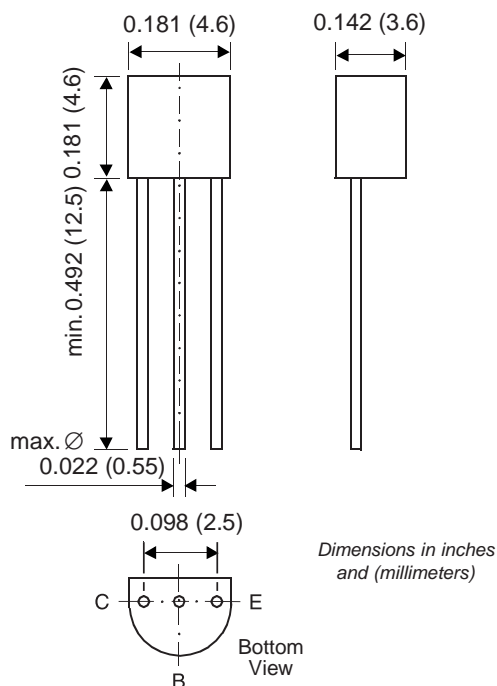


## Small Signal Transistors (NPN)



TO-226AA (TO-92)



### Features

- NPN Silicon Epitaxial Planar Transistors for switching and amplifier applications. Especially suited 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, this transistor is also manufactured in the pin configuration TO-18.

### Mechanical Data

**Case:** TO-92 Plastic Package

**Weight:** approx. 0.18g

**Packaging Codes/Options:**

E6/Bulk – 5K per container, 20K/box

E7/4K per Ammo mag., 20K/box

### Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Collector-Emitter Voltage	BC337 BC338	V <sub>CES</sub>	50 30	V
Collector-Emitter Voltage	BC337 BC338	V <sub>CEO</sub>	45 25	V
Emitter-Base Voltage		V <sub>EBO</sub>	5	V
Collector Current		I <sub>C</sub>	800	mA
Peak Collector Current		I <sub>CM</sub>	1	A
Base Current		I <sub>B</sub>	100	mA
Power Dissipation at T <sub>amb</sub> = 25°C		P <sub>tot</sub>	625 <sup>(1)</sup>	mW
Thermal Resistance Junction to Ambient Air		R <sub>θJA</sub>	200 <sup>(1)</sup>	°C/W
Junction Temperature		T <sub>j</sub>	150	°C
Storage Temperature Range		T <sub>S</sub>	-65 to +150	°C

**Note:**

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

# BC337 and BC338

Vishay Semiconductors  
formerly General Semiconductor



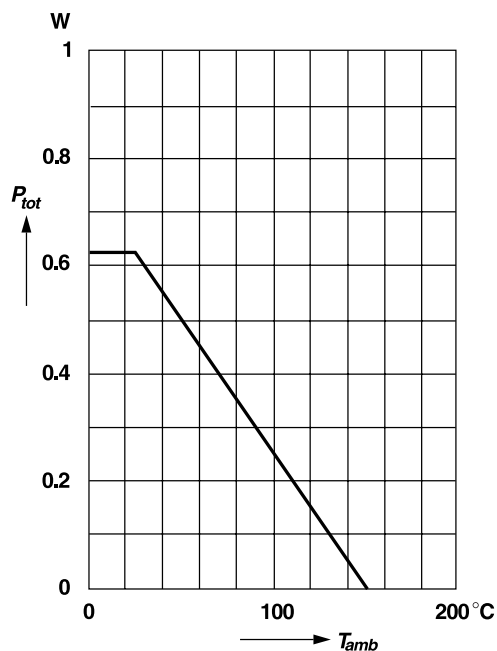
## Electrical Characteristics (T<sub>J</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 100 mA	100	160	250	—
			160	250	400	
			250	400	630	
		V <sub>CE</sub> = 1 V, I <sub>C</sub> = 300 mA	60	130	—	
			100	200	—	
			170	320	—	
Collector-Emitter Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> = 45 V	—	2	100	nA
		V <sub>CE</sub> = 25 V	—	2	100	nA
		V <sub>CE</sub> = 45 V, T <sub>amb</sub> = 125°C	—	—	10	μA
		V <sub>CE</sub> = 25 V, T <sub>amb</sub> = 125°C	—	—	10	μA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10 mA	45	—	—	V
			20	—	—	
Collector-Emitter Breakdown Voltage	V <sub>(BR)CES</sub>	I <sub>C</sub> = 0.1 mA	50	—	—	V
			30	—	—	
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 0.1 mA	5	—	—	V
Collector Saturation Voltage	V <sub>CEsat</sub>	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA	—	—	0.7	V
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 300 mA	—	—	1.2	V
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA f = 50 MHz	—	100	—	MHz
Collector-Base Capacitance	C <sub>CB0</sub>	V <sub>CB</sub> = 10 V, f = 1 MHz	—	12	—	pF

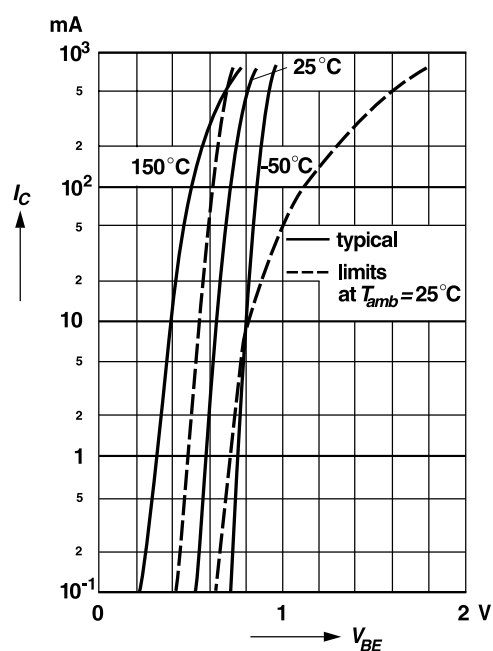
## Ratings and Characteristic Curves (T<sub>A</sub> = 25°C unless otherwise noted)

### 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

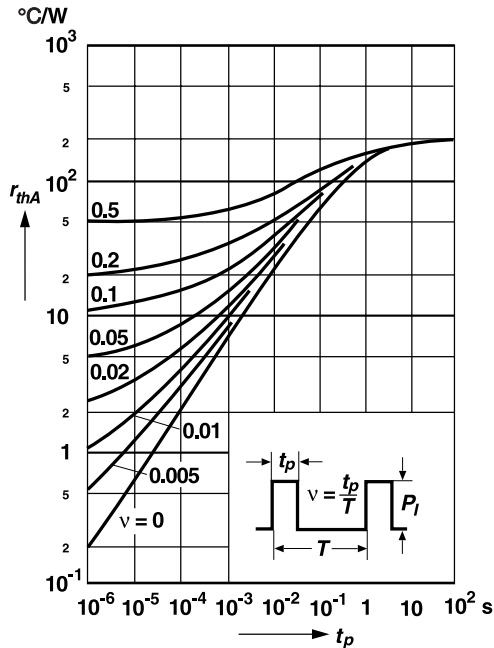




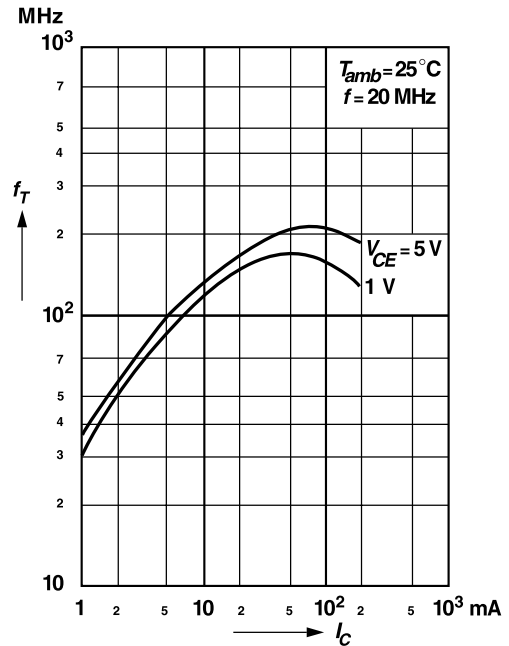
## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

### Pulse thermal resistance versus pulse duration

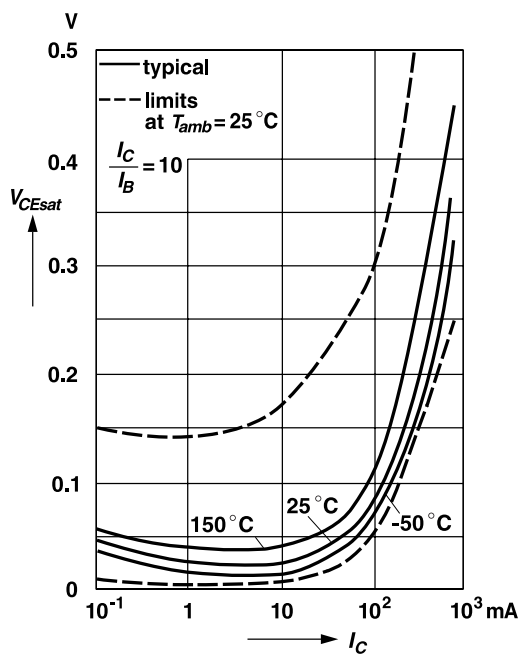
Valid provided that leads are kept at ambient temperature  
at a distance of 2 mm from case



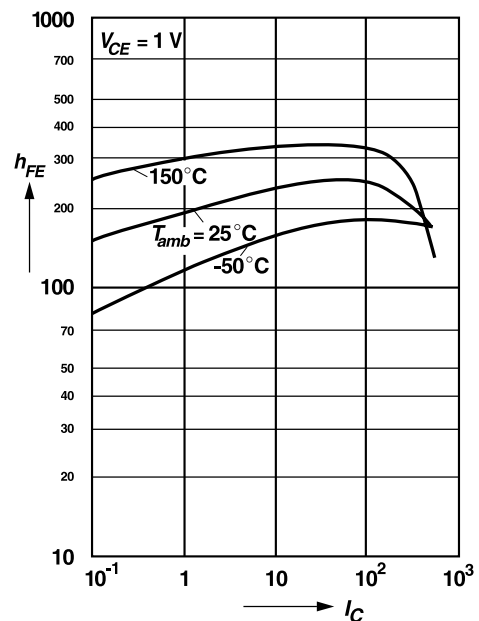
### Gain-bandwidth product versus collector current



### Collector saturation voltage versus collector current



### DC current gain versus collector current



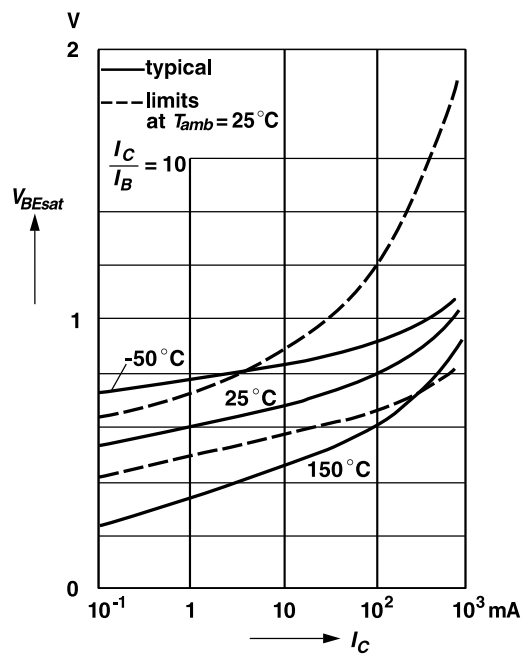
# BC337 and BC338

Vishay Semiconductors  
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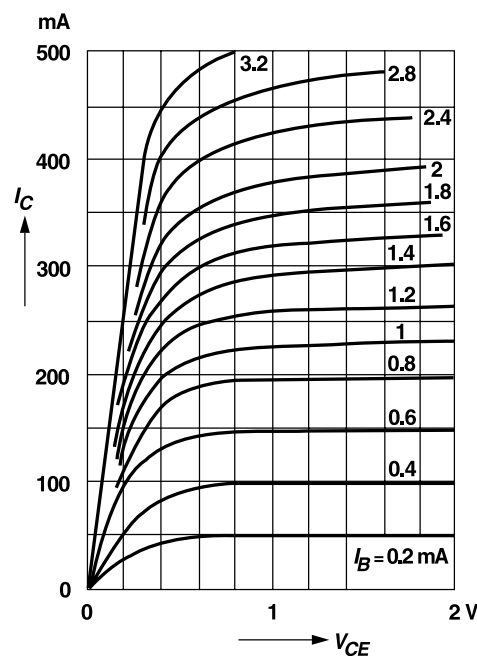


## Ratings and Characteristic Curves (T<sub>A</sub> = 25°C unless otherwise noted)

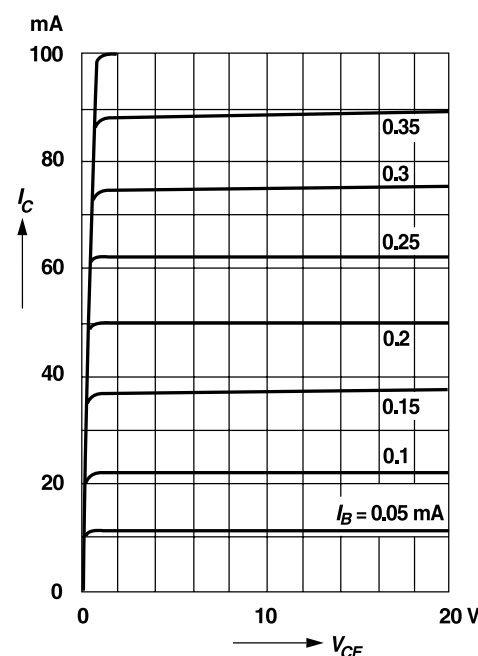
Base saturation voltage  
versus collector current



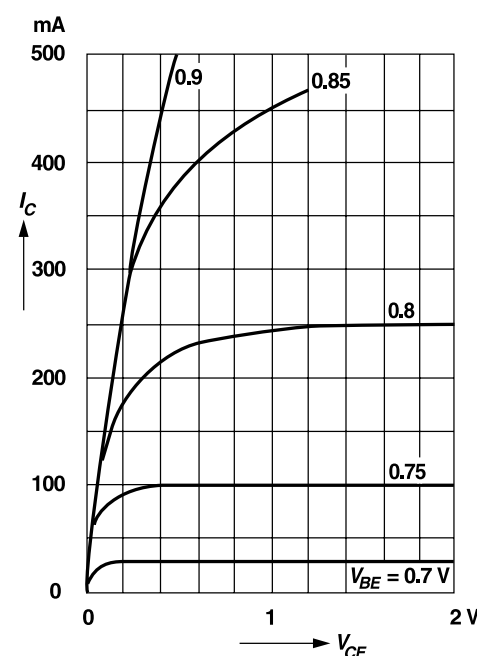
Common emitter  
collector characteristics



Common emitter  
collector characteristics



Common emitter  
collector characteristics



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