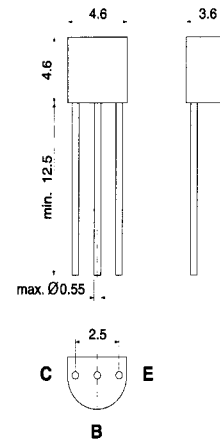


## PNP Silicon Epitaxial Planar Transistor for switching and AF amplifier applications.

These transistors are subdivided into three groups A, B and C according to their current gain. The type BC556 is available in groups A and B, however, the types BC557 and BC558 can be supplied in all three groups. The BC559 is a low-noise type available in all three groups. As complementary types, the NPN transistors BC546...BC549 are recommended.

On special request, these transistors can be manufactured in different pin configurations. Please refer to the "TO-92 TRANSISTOR PACKAGE OUTLINE" on page 80 for the available pin options.



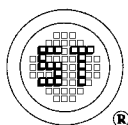
TO-92 Plastic Package  
Weight approx. 0.18 g  
Dimensions in mm

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

		Symbol	Value	Unit
Collector-Base Voltage	HN / BC556	$-V_{CBO}$	80	V
	HN / BC557	$-V_{CBO}$	50	V
	HN / BC558, HN / BC559	$-V_{CBO}$	30	V
Collector-Emitter Voltage	HN / BC556	$-V_{CES}$	80	V
	HN / BC557	$-V_{CES}$	50	V
	HN / BC558, HN / BC559	$-V_{CES}$	30	V
Collector-Emitter Voltage	HN / BC556	$-V_{CEO}$	65	V
	HN / BC557	$-V_{CEO}$	45	V
	HN / BC558, HN / BC559	$-V_{CEO}$	30	V
Emitter-Base Voltage		$-V_{EBO}$	5	V
Collector Current		$-I_C$	100	mA
Peak Collector Current		$-I_{CM}$	200	mA
Peak Base Current		$-I_{BM}$	200	mA
Peak Emitter Current		$I_{EM}$	200	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$		$P_{tot}$	500 <sup>1)</sup>	mW
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_s$	-65 to + 150	$^\circ\text{C}$

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

G S P FORM A AVAILABLE



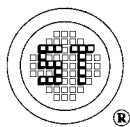
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Characteristics at  $T_{amb} = 25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
<b>h-Parameters</b>					
at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ mA}$ , $f = 1\text{ kHz}$					
Current Gain	Current Gain Group A	$h_{fe}$	-	220	-
	B	$h_{fe}$	-	330	-
	C	$h_{fe}$	-	600	-
Input Impedance	Current Gain Group A	$h_{ie}$	1.6	2.7	4.5
	B	$h_{ie}$	3.2	4.5	8.5
	C	$h_{ie}$	6	8.7	15
Output Admittance	Current Gain Group A	$h_{oe}$	-	18	30
	B	$h_{oe}$	-	30	60
	C	$h_{oe}$	-	60	110
Reverse Voltage Transfer Ratio	Current Gain Group A	$h_{re}$	-	$1.5 \cdot 10^{-4}$	-
	B	$h_{re}$	-	$2 \cdot 10^{-4}$	-
	C	$h_{re}$	-	$3 \cdot 10^{-4}$	-
<b>DC Current Gain.</b>					
at $-V_{CE} = 5\text{ V}$ , $-I_C = 10\text{ }\mu\text{A}$					
Current Gain Group A	A	$h_{FE}$	-	90	-
	B	$h_{FE}$	-	150	-
	C	$h_{FE}$	-	270	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ mA}$					
Current Gain Group A	A	$h_{FE}$	110	180	220
	B	$h_{FE}$	200	290	450
	C	$h_{FE}$	420	500	800
at $-V_{CE} = 5\text{ V}$ , $-I_C = 100\text{ mA}$					
Current Gain Group A	A	$h_{FE}$	-	120	-
	B	$h_{FE}$	-	200	-
	C	$h_{FE}$	-	400	-
<b>Thermal Resistance Junction to Ambient Air</b>					
	$R_{thA}$	-	-	250 <sup>1)</sup>	K/W
<b>Collector Saturation Voltage</b>					
at $-I_C = 10\text{ mA}$ , $-I_B = 0.5\text{ mA}$					
	$-V_{CEsat}$	-	80	300	mV
at $-I_C = 100\text{ mA}$ , $-I_B = 5\text{ mA}$					
	$-V_{CEsat}$	-	250	650	mV
<b>Base Saturation Voltage</b>					
at $-I_C = 10\text{ mA}$ , $-I_B = 0.5\text{ mA}$					
	$-V_{BEsat}$	-	700	-	mV
at $-I_C = 100\text{ mA}$ , $-I_B = 5\text{ mA}$					
	$-V_{BEsat}$	-	900	-	mV
<b>Base Emitter Voltage</b>					
at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ mA}$					
	$-V_{BE}$	600	660	750	mV
at $-V_{CE} = 5\text{ V}$ , $-I_C = 10\text{ mA}$					
	$-V_{BE}$	-	-	800	mV
<b>Collector Emitter Cutoff Current</b>					
at $-V_{CE} = 80\text{ V}$	HN / BC 556	$-I_{CES}$	-	0.2	15
at $-V_{CE} = 50\text{ V}$	HN / BC 557	$-I_{CES}$	-	0.2	15
at $-V_{CE} = 30\text{ V}$	HN / BC 558	$-I_{CES}$	-	0.2	15
at $-V_{CE} = 80\text{ V}$ , $T_J = 125\text{ }^{\circ}\text{C}$	HN / BC 556	$-I_{CES}$	-	-	4
at $-V_{CE} = 50\text{ V}$ , $T_J = 125\text{ }^{\circ}\text{C}$	HN / BC 557	$-I_{CES}$	-	-	4
at $-V_{CE} = 30\text{ V}$ , $T_J = 125\text{ }^{\circ}\text{C}$	HN / BC 558, HN / BC 559	$-I_{CES}$	-	-	4

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

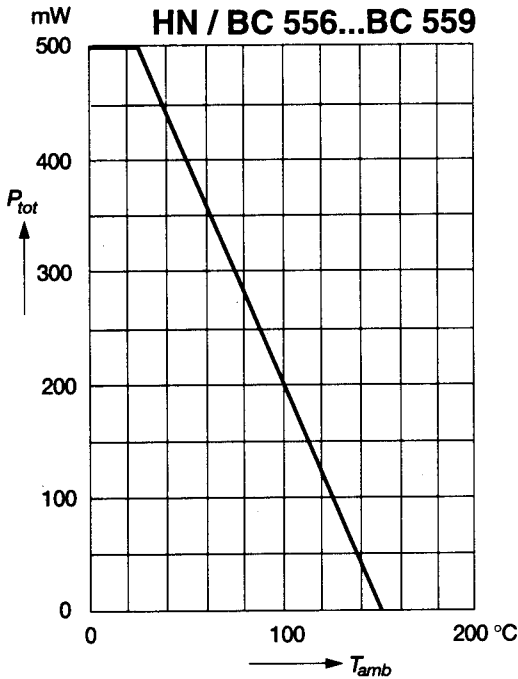


## Characteristics, continuation

	Symbol	Min.	Typ.	Max.	Unit
Gain-Bandwidth Product at $-V_{CE} = 5V, -I_C = 10mA, f = 100MHz$	$f_T$	-	150	-	MHz
Collector-Base Capacitance at $-V_{CB} = 10V, f = 1MHz$	$C_{CBO}$	-	-	6	pF
Noise Figure at $-V_{CE} = 5V, -I_C = 200\mu A, R_G = 2k\Omega,$ $f = 1kHz, \Delta f = 200Hz$ <b>HN / BC556, BC557, BC558</b> <b>HN / BC559</b>	F	-	2	10	dB
	F	-	1	4	dB

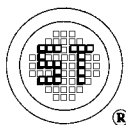
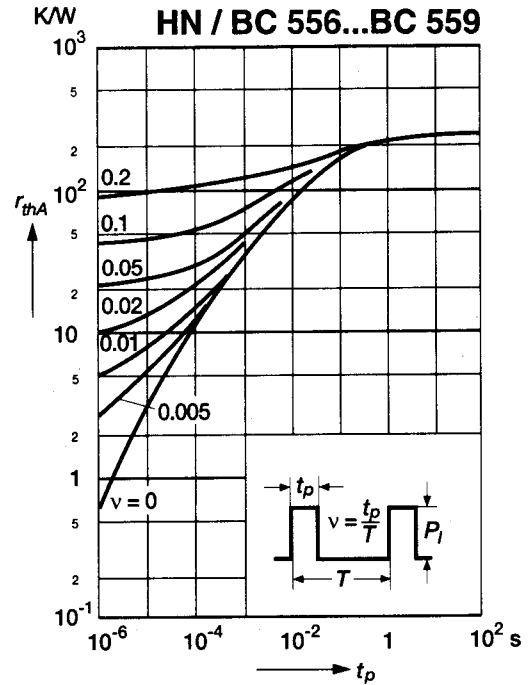
### Admissible power dissipation versus temperature

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



### Pulse thermal resistance versus pulse duration

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

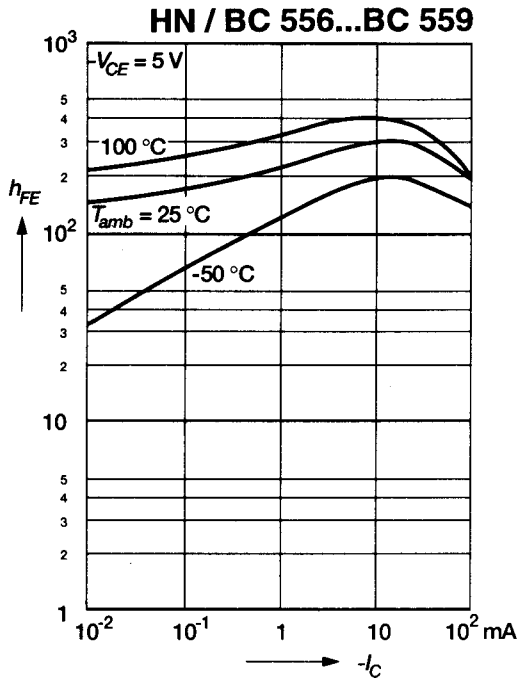


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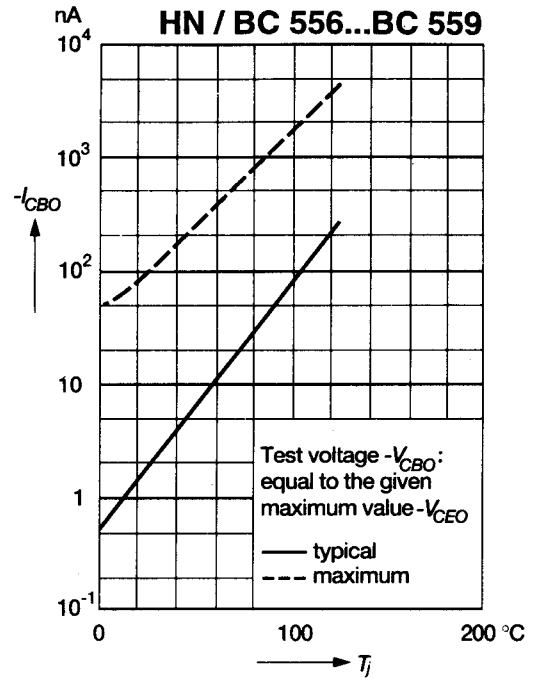
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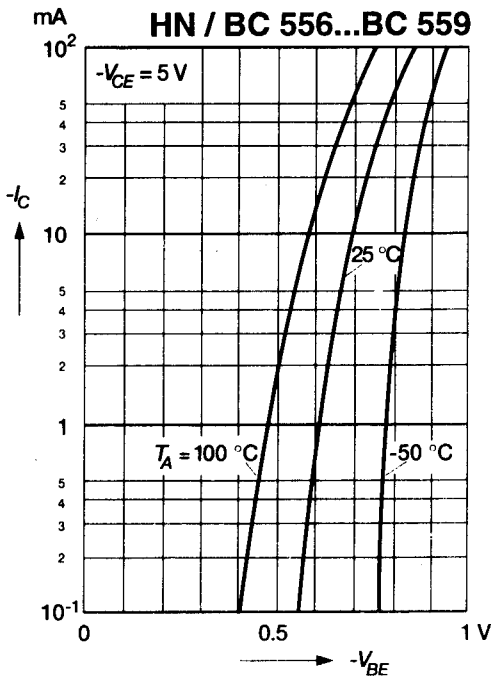
DC current gain versus collector current



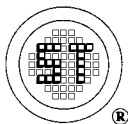
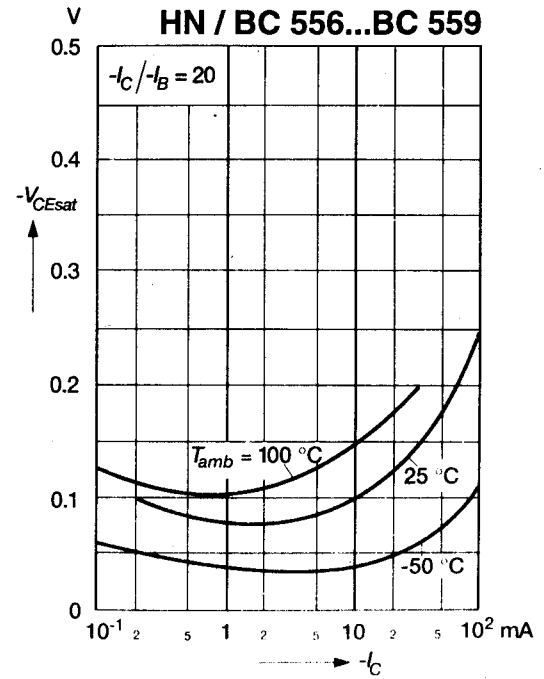
Collector-base cutoff current versus junction temperature



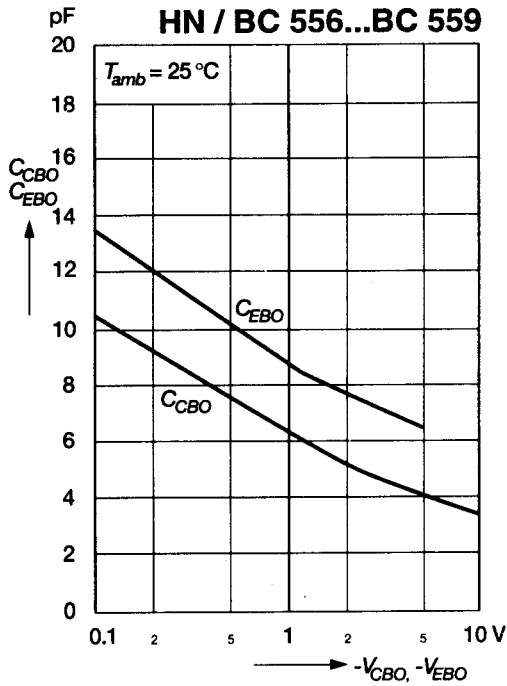
Collector current versus base-emitter voltage



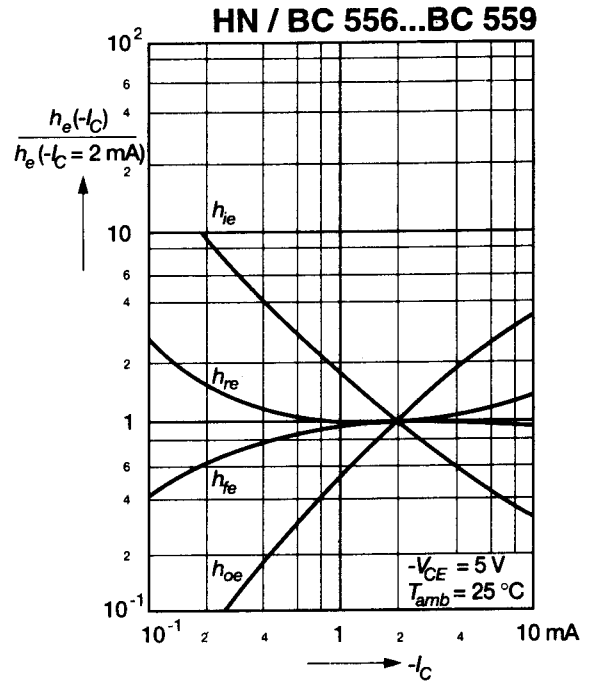
Collector saturation voltage versus collector current



Collector-base capacitance,  
Emitter-base capacitance  
versus reverse bias voltage



Relative h-parameters  
versus collector current



Gain-bandwidth product  
versus collector current

