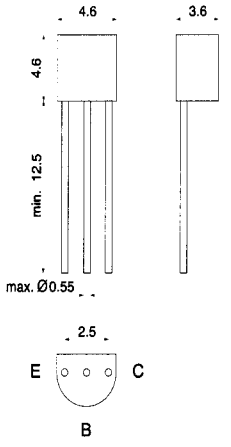
HN 9014

NPN Silicon Expitaxial Planar Transistor
for switching and AF amplifier applications.

The transistor is subdivided into four groups, A, B, C, and D, according to its DC current gain. As complementary type the PNP transistor HN 9015 is 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

	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CES}	30	V
Collector Emitter Voltage	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 °C	P_{tot}	500[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

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Characteristics at T_{amb} = 25 °C

		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 5 V, I_C = 1 mA						
Current Gain Group	A	h_{FE}	60	-	150	-
	B	h_{FE}	100	-	300	-
	C	h_{FE}	200	-	600	-
	D	h_{FE}	400	-	1000	-
Collector Saturation Voltage at I_C = 10 mA, I_B = 0.5 mA at I_C = 100 mA, I_B = 5 mA		V_{CEsat} V_{CEsat}	- -	80 200	200 600	mV mV
Base Saturation Voltage at I_C = 10 mA, I_B = 0.5 mA at I_C = 100 mA, I_B = 5 mA		V_{BEsat} V_{BEsat}	- -	700 900	- -	mV mV
Base Emitter Voltage at V_{CE} = 5 V, I_C = 2 mA at V_{CE} = 5 V, I_C = 10 mA		V_{BE} V_{BE}	580 -	660 -	700 750	mV mV
Collector Cutoff Current at V_{CE} = 30 V at V_{CE} = 30 V, T_j = 125 °C at V_{CB} = 30 V at V_{CB} = 30 V, T_j = 150 °C		I_{CES} I_{CES} I_{CBO} I_{CBO}	- - - -	0.2 - - -	15 4 15 5	nA µA nA µA
Gain Bandwidth Product at V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	-	300	-	MHz
Collector Base Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{CBO}	-	3.5	6	pF
Emitter Base Capacitance at V_{EB} = 0.5 V, f = 1 MHz		C_{EBO}	-	9	-	pF
Noise Figure at V_{CE} = 5 V, I_C = 200 µA, R_G = 2 kΩ f = 1 kHz, Δf = 200 Hz		F	-	2	10	dB
Thermal Resistance Junction to Ambient		R_{thA}	-	-	250[1)]	K/W

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

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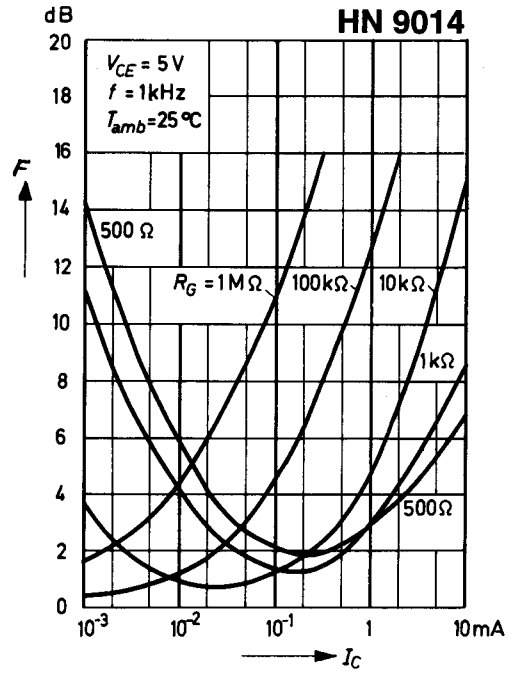
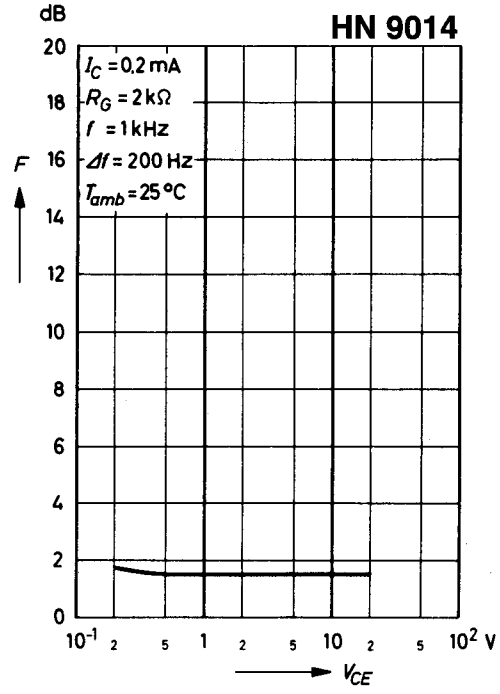
Noise figure versus collector current



Noise figure versus collector emitter voltage



Admissible power dissipation versus temperature

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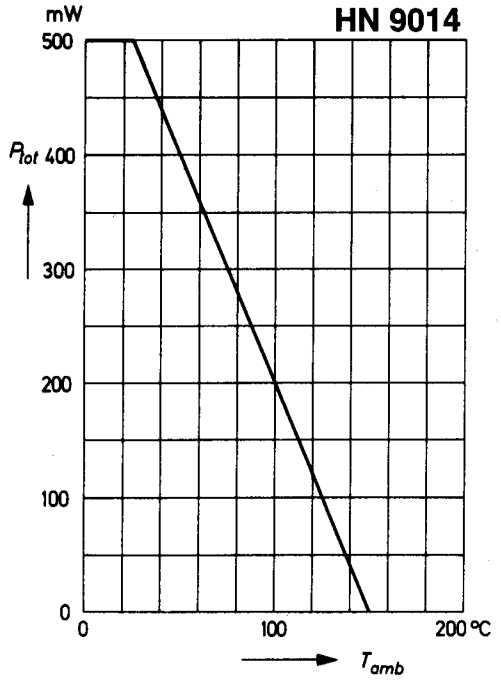
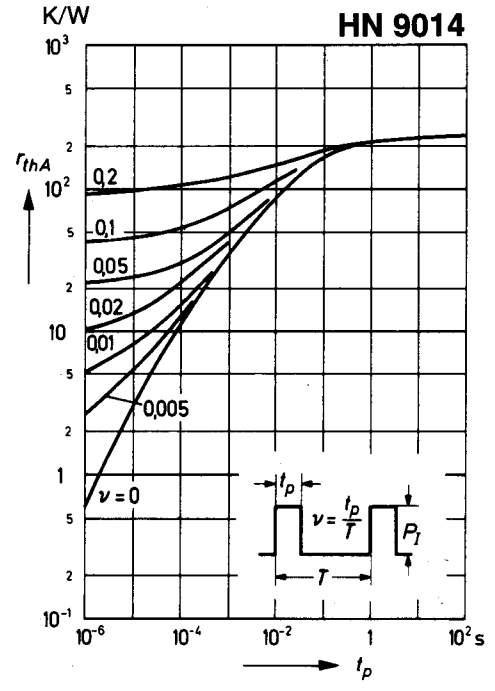
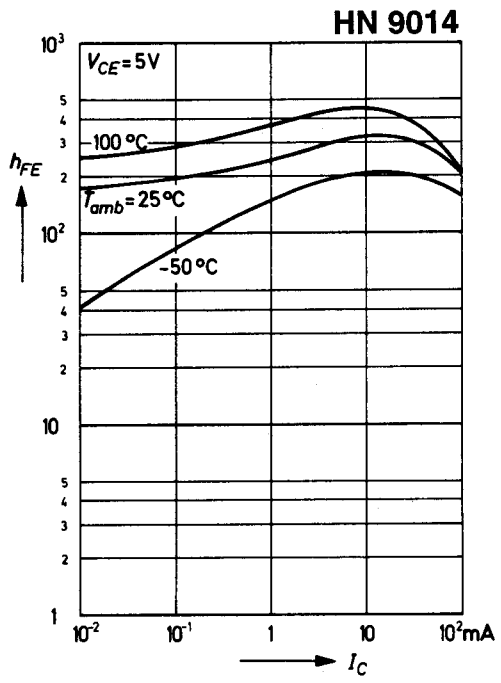


Pulse thermal resistance versus pulse duration

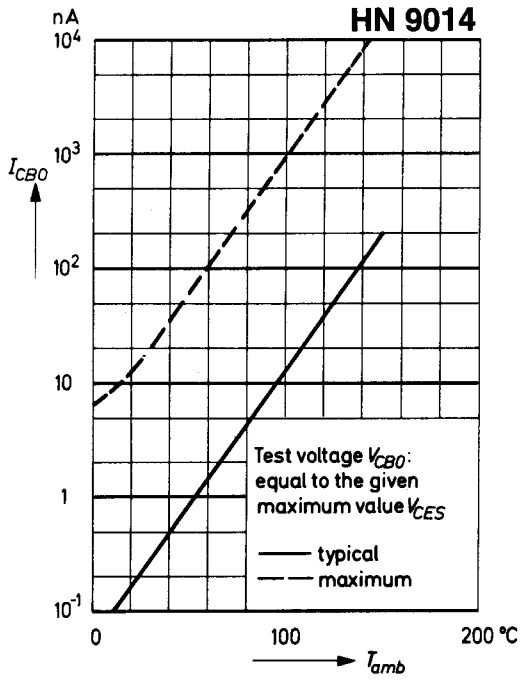
Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case



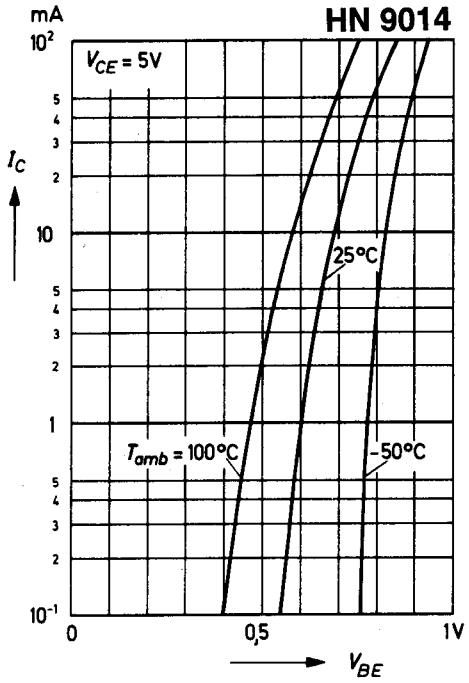
DC current gain versus collector current



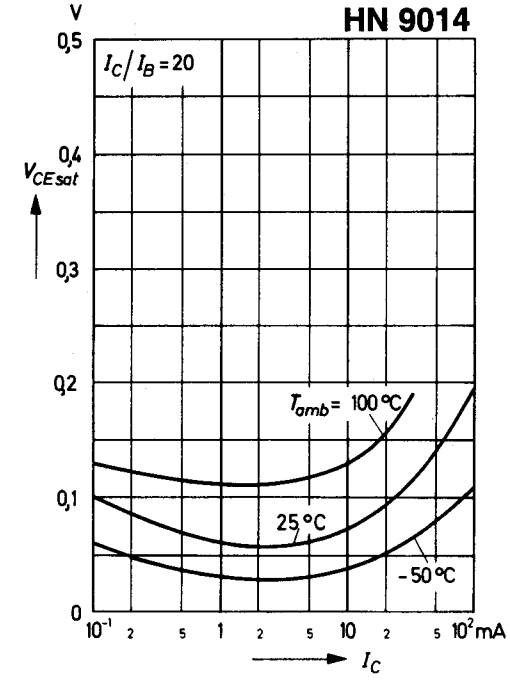
Collector cutoff current versus ambient temperature



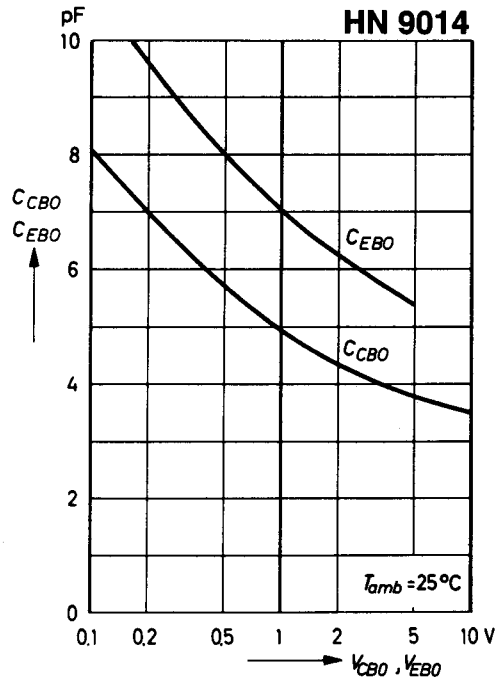
Collector current versus base emitter voltage



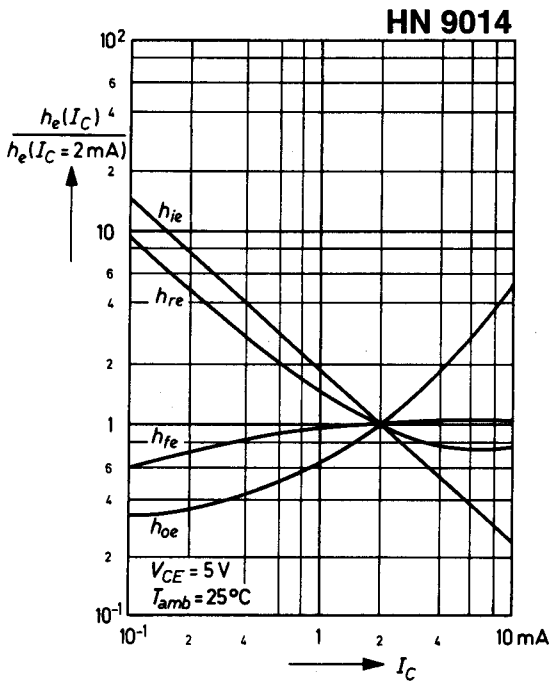
Collector saturation voltage versus collector current



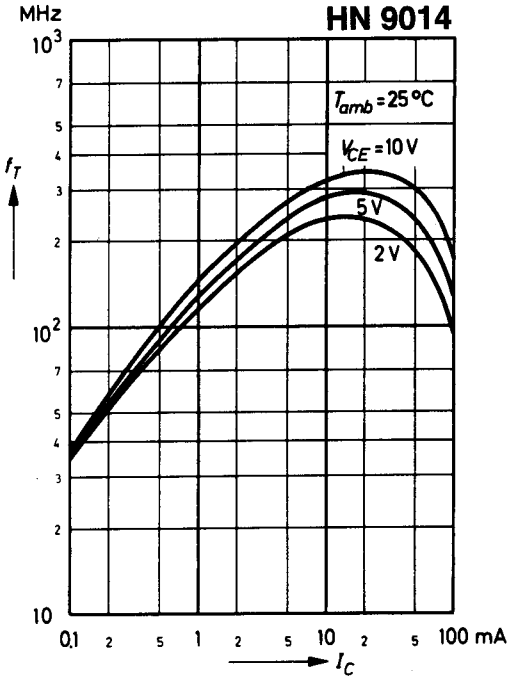
Collector base capacitance, Emitter base capacitance versus reverse bias voltage



Relative h-parameters versus collector current



Gain bandwidth product versus collector current



Noise figure versus collector current