

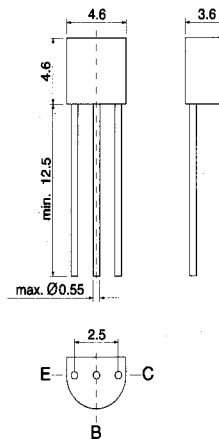
# HN 9012

## PNP Silicon Epitaxial Planar Transistor

for switching and amplifier applications. Especially suitable for AF-driver stages and low power output stages.

The transistor is subdivided into two groups, G and H, according to its DC current gain. As complementary type the NPN transistor HN 9013 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.



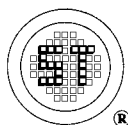
TO-92 Plastic Package  
Weight approx. 0.18 g  
Dimensions in mm

## Absolute Maximum Ratings

	Symbol	Value	Unit
Collector Emitter Voltage	$-V_{CEO}$	30	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 $T_{amb} = 25\text{ }^\circ\text{C}$	$P_{tot}$	625 <sup>1)</sup>	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150	$^\circ\text{C}$

1) 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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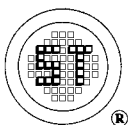


## Characteristics at $T_{amb} = 25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 1\text{ V}$ , $-I_C = 50\text{ mA}$ <b>Current Gain Group</b> <b>G</b> <b>H</b>	$h_{FE}$	110	-	183	-
	$h_{FE}$	177	-	250	-
	$h_{FE}$	40	-	-	-
Collector Cutoff Current at $-V_{CB} = 31\text{ V}$	$-I_{CBO}$	-	-	100	nA
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	30	-	-	V
Emitter Base Cutoff Current at $-V_{EB} = 5.1\text{ V}$	$-I_{EBO}$	-	-	100	nA
Collector Saturation Voltage at $-I_C = 500\text{ mA}$ , $-I_B = 20\text{ mA}$	$-V_{CEsat}$	-	-	0.7	V
Base Saturation Voltage at $-I_C = 500\text{ mA}$ , $-I_B = 20\text{ mA}$	$-V_{BEsat}$	-	-	1.2	V
Base Emitter Voltage at $-V_{CE} = 1\text{ V}$ , $-I_C = 50\text{ mA}$	$-V_{BE}$	0.6	-	0.75	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	$R_{thA}$	-	-	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

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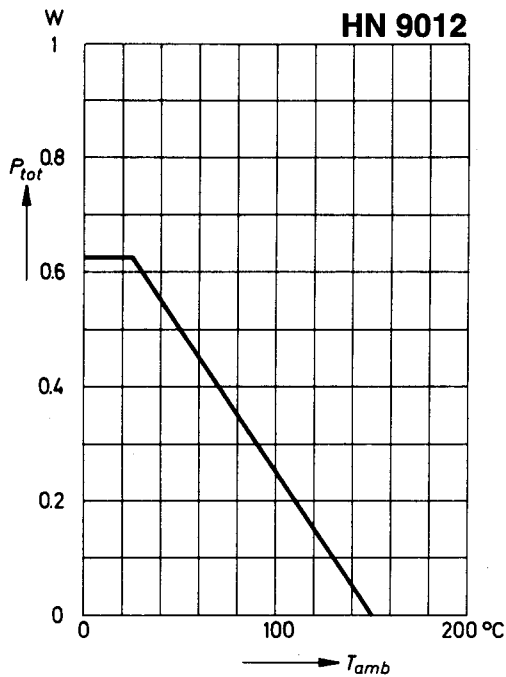
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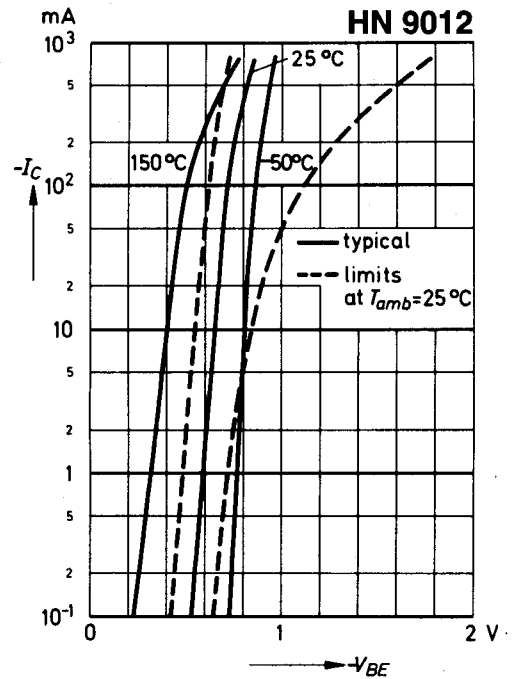


## Admissible power dissipation versus ambient temperature

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

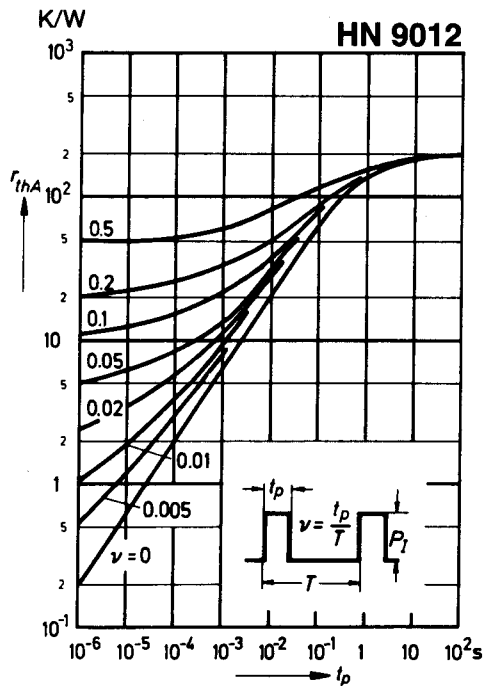


## Collector current versus base emitter voltage

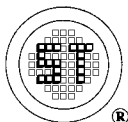
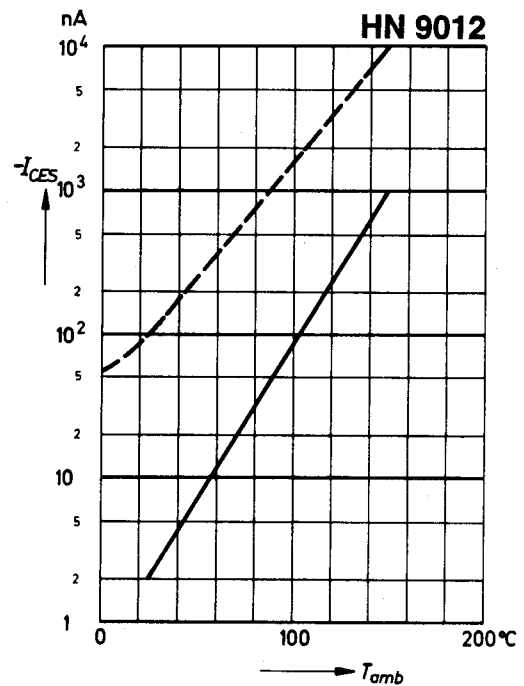


## Pulse thermal resistance versus pulse duration

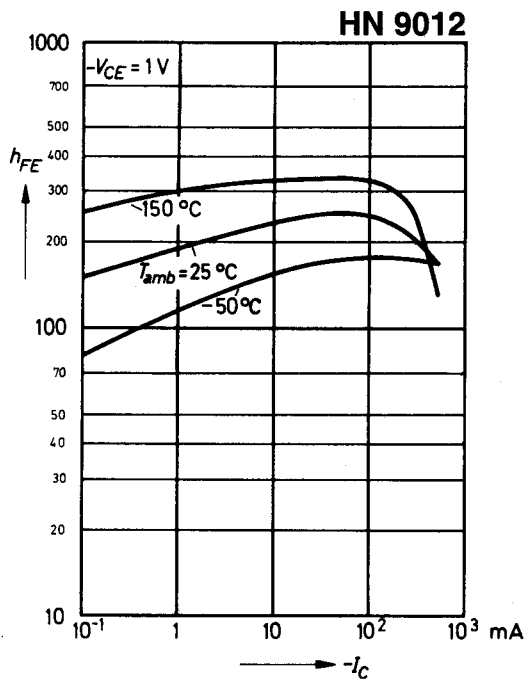
Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case



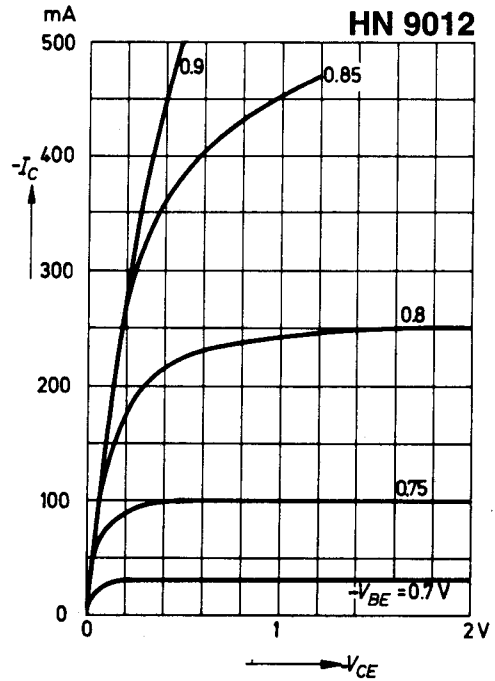
## Collector cutoff current versus ambient temperature



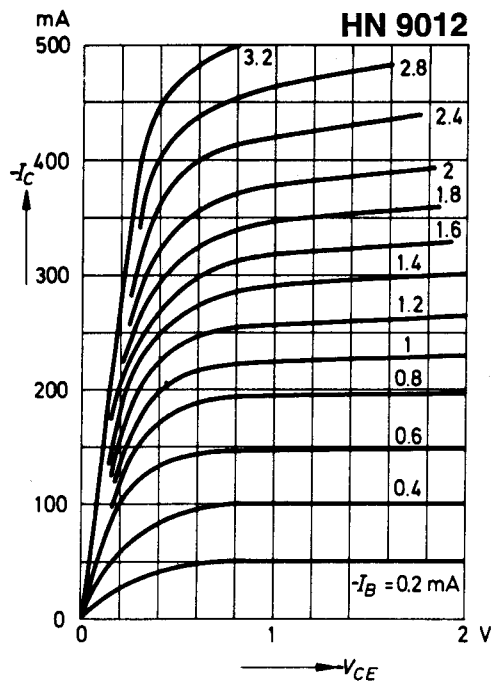
DC current gain versus collector current



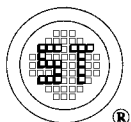
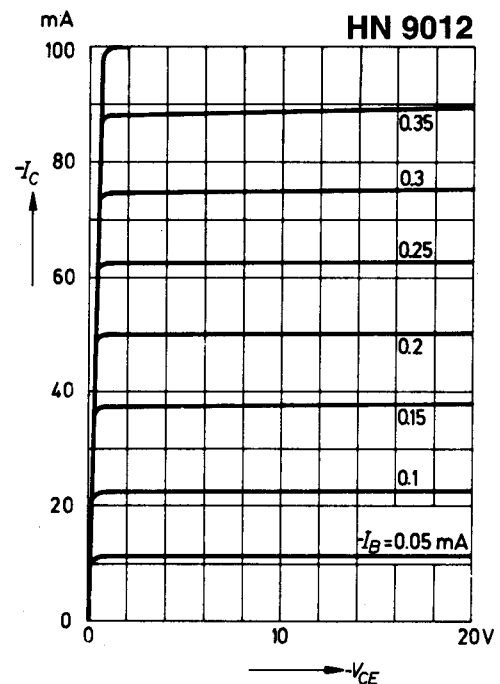
Common emitter collector characteristics



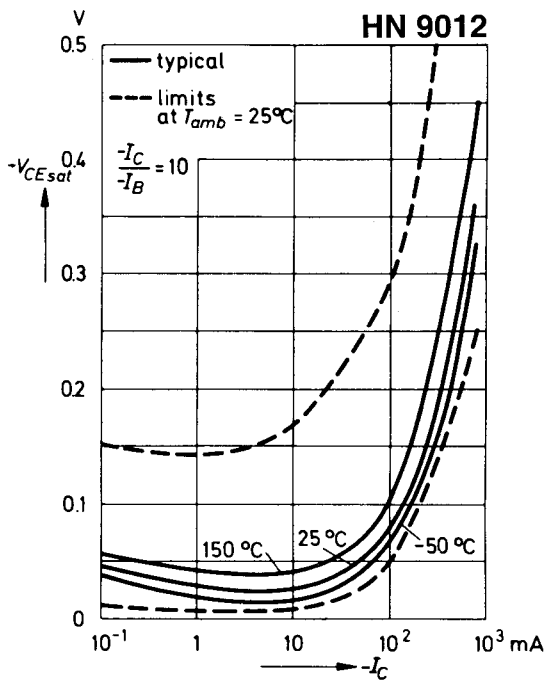
Common emitter collector characteristics



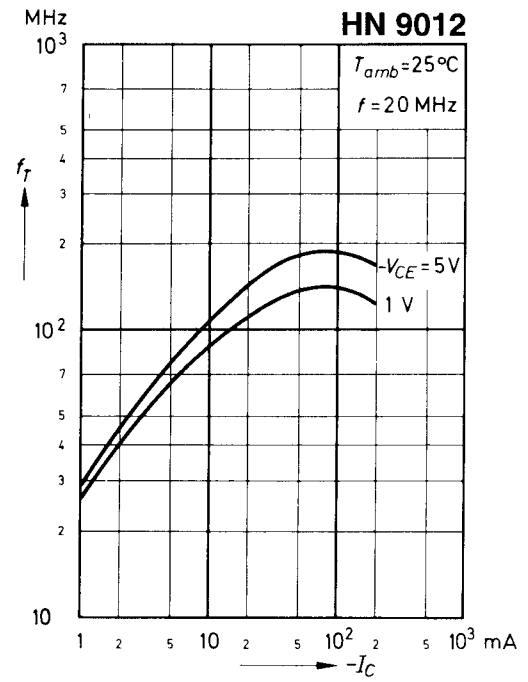
Common emitter collector characteristics



Collector saturation voltage versus collector current



Gain bandwidth product versus collector current



Base saturation voltage versus collector current

