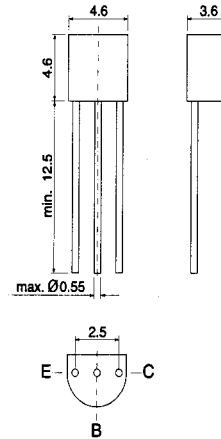


PNP Silicon Expitaxial Planar Transistor
for switching and AF amplifier applications.

The transistor is subdivided into four groups, A, B, C, and D, according to its DC current gain. As complementary type the NPN transistor HN 9014 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.



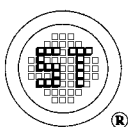
TO-92 Plastic Package
Weight approx. 0.18 g
Dimensions in mm

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 $T_{amb} = 25\text{ }^{\circ}\text{C}$ | P_{tot} | 500 ¹⁾ | mW |
| Junction Temperature | T_j | 150 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_s | -65 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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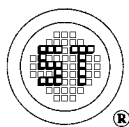


Characteristics at $T_{amb} = 25\text{ }^{\circ}\text{C}$

| | Symbol | Min. | Typ. | Max. | Unit |
|--|--|------------------|--------------------|--------------------|--|
| DC Current Gain at $-V_{CE} = 5\text{ V}$, $-I_C = 1\text{ mA}$ 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 $-I_C = 10\text{ mA}$, $-I_B = 0.5\text{ mA}$ at $-I_C = 100\text{ mA}$, $-I_B = 5\text{ mA}$ | $-V_{CEsat}$ $-V_{CEsat}$ | - - | 80 250 | 300 650 | mV mV |
| Base Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 0.5\text{ mA}$ at $-I_C = 100\text{ mA}$, $-I_B = 5\text{ mA}$ | $-V_{BEsat}$ $-V_{BEsat}$ | - - | 700 900 | - - | mV mV |
| Base Emitter Voltage at $-V_{CE} = 5\text{ V}$, $-I_C = 2\text{ mA}$ at $-V_{CE} = 5\text{ V}$, $-I_C = 10\text{ mA}$ | $-V_{BE}$ $-V_{BE}$ | 600 - | 660 - | 750 800 | mV mV |
| Collector Cutoff Current at $-V_{CE} = 30\text{ V}$ at $-V_{CE} = 30\text{ V}$, $T_j = 125\text{ }^{\circ}\text{C}$ at $-V_{CB} = 30\text{ V}$ at $-V_{CB} = 30\text{ V}$, $T_j = 150\text{ }^{\circ}\text{C}$ | $-I_{CES}$ $-I_{CES}$ $-I_{CBO}$ $-I_{CBO}$ | - - - - | 0.2 - - - | 15 4 15 5 | nA μA nA μA |
| Gain Bandwidth Product at $-V_{CE} = 5\text{ V}$, $-I_C = 10\text{ mA}$, $f = 100\text{ MHz}$ | f_T | - | 150 | - | MHz |
| Collector Base Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$ | C_{CBO} | - | - | 6 | pF |
| Noise Figure at $-V_{CE} = 5\text{ V}$, $-I_C = 200\text{ }\mu\text{A}$, $R_G = 2\text{ k}\Omega$ $f = 1\text{ kHz}$, $\Delta f = 200\text{ Hz}$ | 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

G S P FORM A AVAILABLE

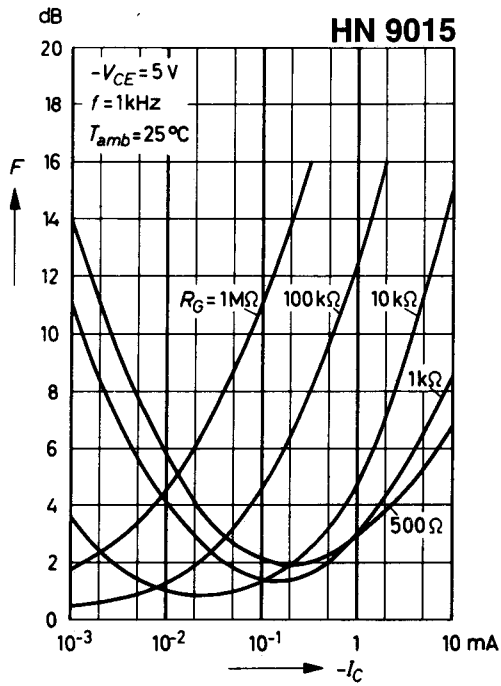


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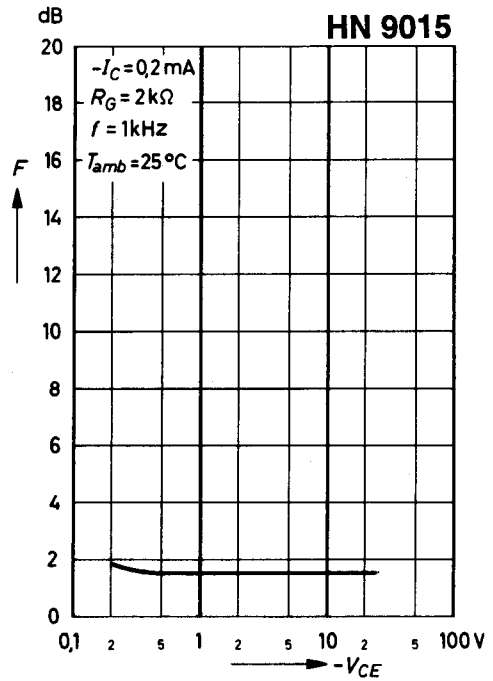
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Noise figure versus collector current

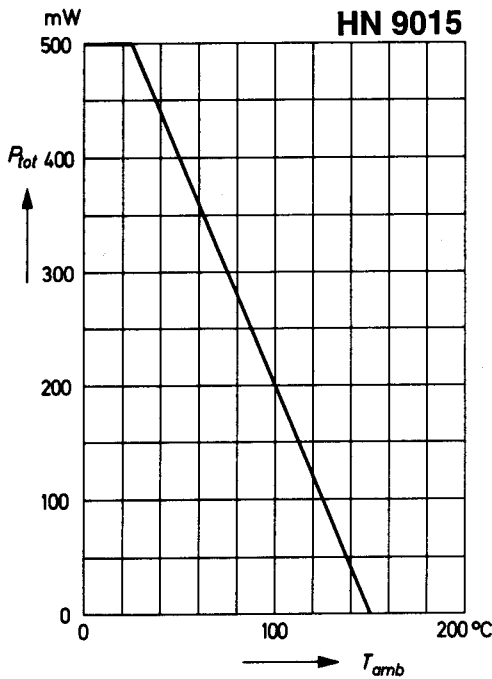


Noise figure versus collector emitter voltage



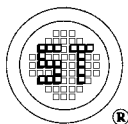
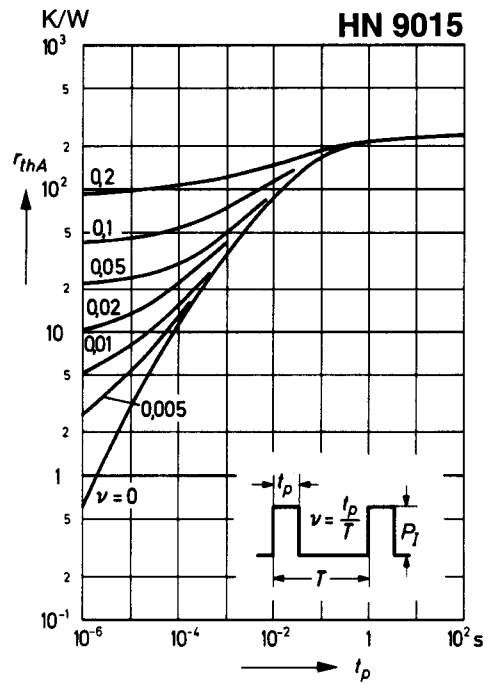
Admissible power dissipation versus temperature

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

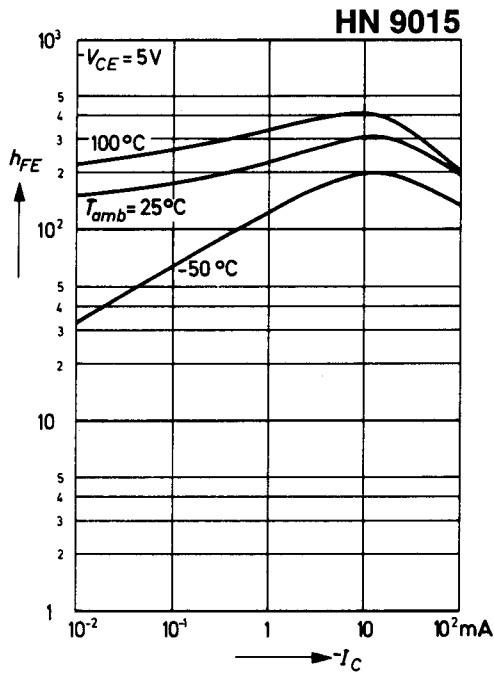


Pulse thermal resistance versus pulse duration

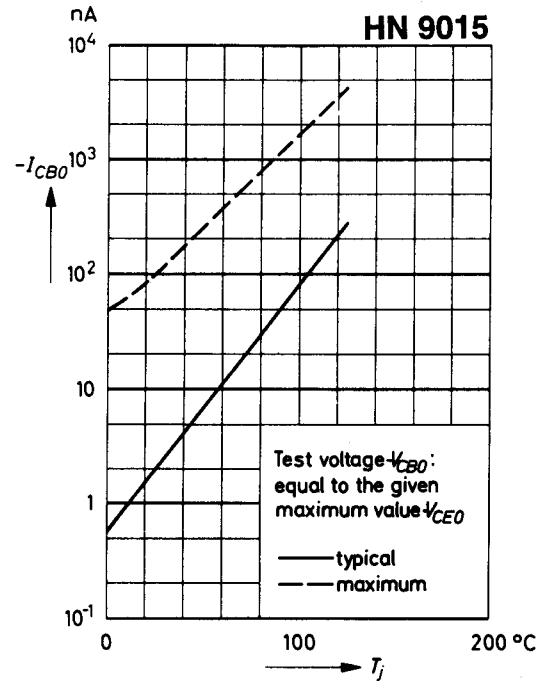
Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case



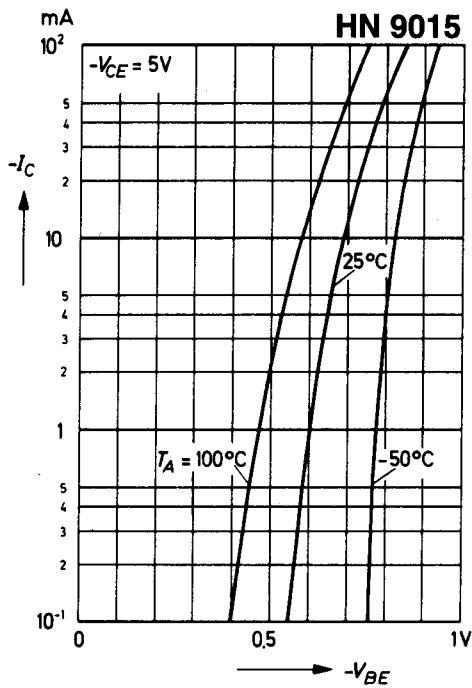
DC current gain versus collector current



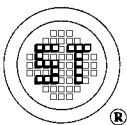
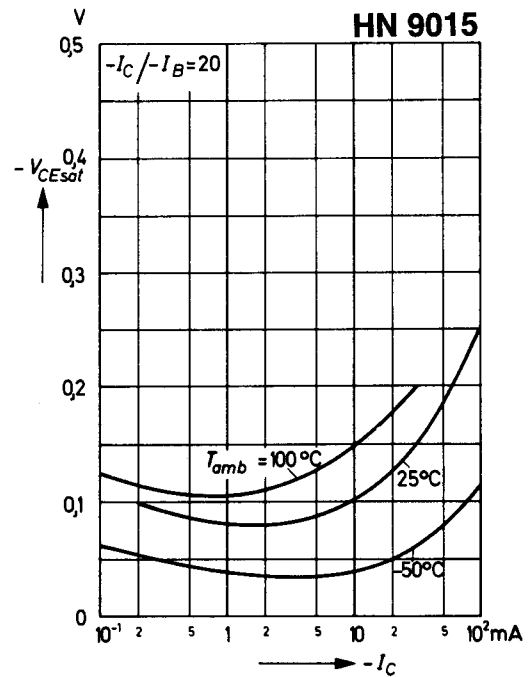
Collector cutoff current versus junction temperature



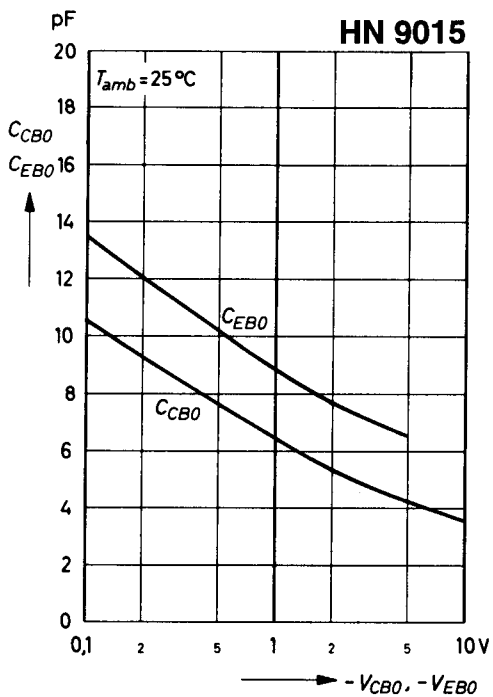
Collector current versus base emitter voltage



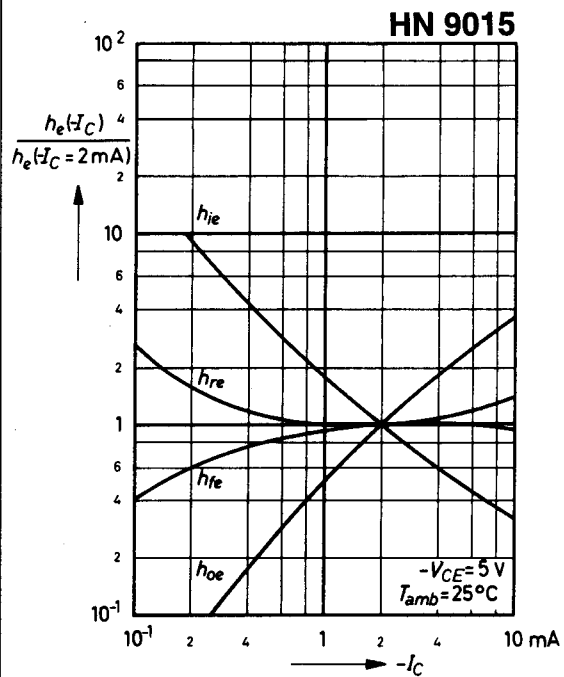
Collector saturation voltage versus collector current



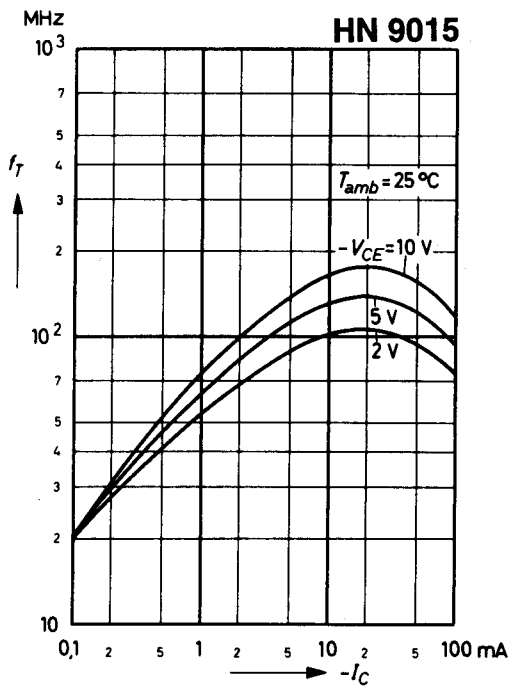
Collector base capacitance,
Emitter base capacitance
versus reverse bias voltage



Relative h-parameters
versus collector current



Gain bandwidth product
versus collector current



Noise figure
versus collector current

