

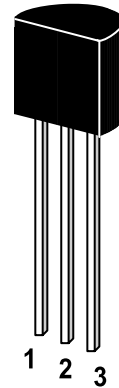
ST 2N3905 / 2N3906

PNP Silicon Epitaxial Planar Transistor

for switching and amplifier applications.

As complementary types the NPN transistors 2N3903 and 2N3904 are recommended.

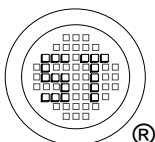
On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Base 3. Collector
TO-92 Plastic Package
Weight approx. 0.19g

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

| Parameter | Symbol | Value | Unit |
|---------------------------|------------|---------------|------------------|
| Collector Base Voltage | $-V_{CBO}$ | 40 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 40 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 6 | V |
| Collector Current | $-I_C$ | 200 | mA |
| Power Dissipation | P_{tot} | 625 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_s | - 55 to + 150 | $^\circ\text{C}$ |



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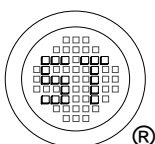
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ST 2N3905 / 2N3906

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

| Parameter | Symbol | Min. | Max. | Unit |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|-------------------|------|
| DC Current Gain at $-V_{CE} = 1\text{ V}$, $-I_C = 0.1\text{ mA}$ | 2N3905 | h_{FE} | 30 | - |
| | 2N3906 | h_{FE} | 60 | - |
| at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ mA}$ | 2N3905 | h_{FE} | 40 | - |
| | 2N3906 | h_{FE} | 80 | - |
| at $-V_{CE} = 1\text{ V}$, $-I_C = 10\text{ mA}$ | 2N3905 | h_{FE} | 50 | 150 |
| | 2N3906 | h_{FE} | 100 | 300 |
| at $-V_{CE} = 1\text{ V}$, $-I_C = 50\text{ mA}$ | 2N3905 | h_{FE} | 30 | - |
| | 2N3906 | h_{FE} | 60 | - |
| at $-V_{CE} = 1\text{ V}$, $-I_C = 100\text{ mA}$ | 2N3905 | h_{FE} | 15 | - |
| | 2N3906 | h_{FE} | 30 | - |
| Collector Cutoff Current at $-V_{CB} = 30\text{ V}$ | $-I_{CBO}$ | - | 50 | nA |
| Emitter Cutoff Current at $-V_{EB} = 6\text{ V}$ | $-I_{EBO}$ | - | 50 | nA |
| Collector Base Breakdown Voltage at $-I_C = 10\text{ }\mu\text{A}$ | $-V_{(BR)CBO}$ | 40 | - | V |
| Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$ | $-V_{(BR)CEO}$ | 40 | - | V |
| Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$ | $-V_{(BR)EBO}$ | 6 | - | V |
| Collector Emitter Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 1\text{ mA}$ at $-I_C = 50\text{ mA}$, $-I_B = 5\text{ mA}$ | $-V_{CEsat}$ | - | 0.25 | V |
| | $-V_{CEsat}$ | - | 0.4 | V |
| Base Emitter Saturation Voltage at $-I_C = 10\text{ mA}$, $-I_B = 1\text{ mA}$ at $-I_C = 50\text{ mA}$, $-I_B = 5\text{ mA}$ | $-V_{BEsat}$ | - | 0.85 | V |
| | $-V_{BEsat}$ | - | 0.95 | V |
| Gain Bandwidth Product at $-V_{CE} = 20\text{ V}$, $-I_C = 10\text{ mA}$, $f = 100\text{ MHz}$ | 2N3905 | f_T | 200 | - |
| | 2N3906 | f_T | 250 | - |
| Collector Base Capacitance at $-V_{CB} = 5\text{ V}$, $f = 100\text{ KHz}$ | C_{cb} | - | 4.5 | pF |
| Emitter Base Capacitance at $-V_{EB} = 0.5\text{ V}$, $f = 100\text{ KHz}$ | C_{eb} | - | 10 | pF |
| 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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ISO/TS 16949 : 2002
Certificate No. 05103



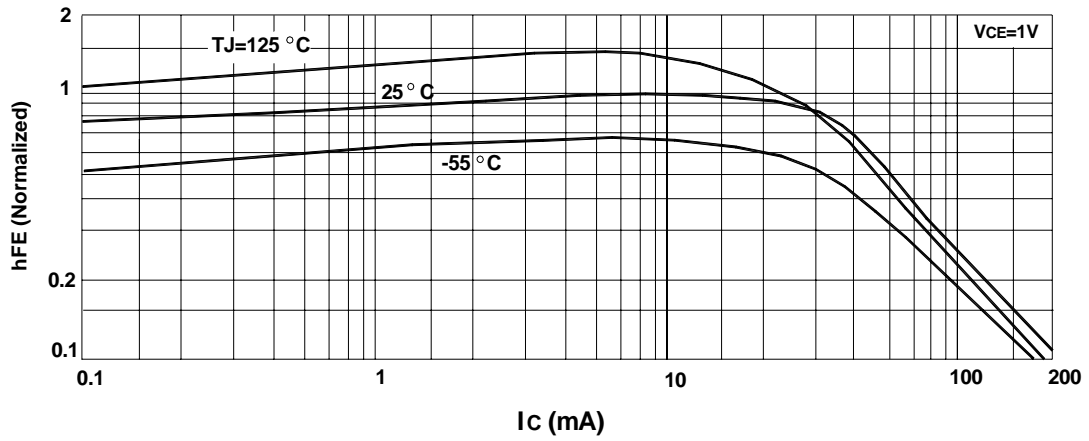
ISO 14001:2004
Certificate No. 7116



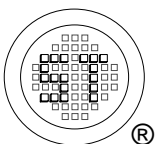
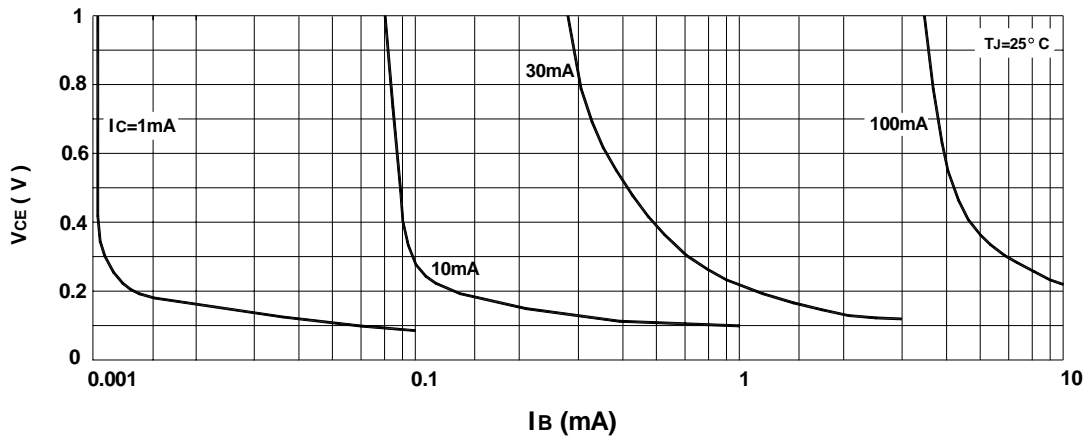
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DC Current Gain



Collector Saturation Region



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