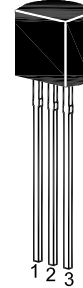


NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into one group according to its DC current gain.

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



1. Emitter 2. Base 3. Collector
TO-92 Plastic Package

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

| Parameter | | Symbol | Value | Unit |
|---------------------------|---------|-----------|---------------|------------------|
| Collector Base Voltage | 2N2222 | V_{CBO} | 60 | V |
| | 2N2222A | | 75 | |
| Collector Emitter Voltage | 2N2222 | V_{CEO} | 30 | V |
| | 2N2222A | | 40 | |
| Emitter Base Voltage | 2N2222 | V_{EBO} | 5 | V |
| | 2N2222A | | 6 | |
| Collector Current | | I_C | 600 | mA |
| Power Dissipation | | P_{tot} | 625 | mW |
| Junction Temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | - 55 to + 150 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Min. | Max. | Unit |
|---|--|-----------------------------------|------------------------------|----------------------------|
| DC Current Gain at $V_{CE} = 10\text{ V}$, $I_C = 0.1\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 10\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 150\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 500\text{ mA}$ | h_{FE} h_{FE} h_{FE} h_{FE} h_{FE} h_{FE} | 35 50 75 100 30 40 | - - - 300 - - | - - - - - - |
| Collector Base Cutoff Current at $V_{CB} = 50\text{ V}$ at $V_{CB} = 60\text{ V}$ | I_{CBO} | - - | 10 10 | nA |
| Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$ | $V_{(BR)CBO}$ | 60 75 | - - | V |
| Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$ | $V_{(BR)CEO}$ | 30 40 | - - | V |
| Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$ | $V_{(BR)EBO}$ | 5 6 | - - | V |
| Collector Emitter Saturation Voltage at $I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$ at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$ | $V_{CE(sat)}$ | - - - - | 0.4 0.3 1.6 1 | V |
| Base Emitter Saturation Voltage at $I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$ at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$ | $V_{BE(sat)}$ | - 0.6 - - | 1.3 1.2 2.6 2 | V |
| Gain Bandwidth Product at $I_C = 20\text{ mA}$, $V_{CE} = 20\text{ V}$, $f = 100\text{ MHz}$ | f_T | 250 | - | MHz |
| Collector Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$ | C_{ob} | - | 8 | pF |



Figure 1. DC Current Gain

