

Transistors

2N4123

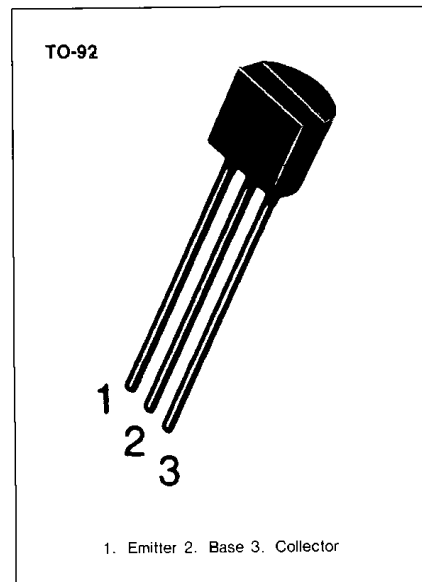
GENERAL PURPOSE TRANSISTOR

• Collector-Emitter Voltage: $V_{CE0} = 2N4123: 30V$

• Collector Dissipation: $P_C (\text{max}) = 625\text{mW}$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

| Characteristic | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | 40 | V |
| Collector-Emitter Voltage | V_{CEO} | 30 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 200 | mA |
| Collector Dissipation | P_C | 625 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55~150 | $^\circ\text{C}$ |



• Refer to 2N3904 for graphs

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|-----------------------|--|-----|-----|------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 10\mu\text{A}, I_E = 0$ | 40 | | | V |
| * Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1\text{mA}, I_B = 0$ | 30 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 10\mu\text{A}, I_C = 0$ | 5 | | | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 20V, I_C = 0$ | | | 50 | nA |
| Emitter Cut-off Current | I_{EBO} | $V_{BE} = 3V, I_C = 0$ | | | 50 | nA |
| * DC Current Gain | h_{FE} | $V_{CE} = 1V, I_C = 0.2\text{mA}$ | 50 | | 150 | |
| | | $V_{CE} = 1V, I_C = 50\text{mA}$ | 25 | | | |
| * Collector-Emitter Saturation Voltage | $V_{CE} (\text{sat})$ | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | | | 0.3 | V |
| * Base-Emitter Saturation Voltage | $V_{BE} (\text{sat})$ | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | | | 0.95 | V |
| Output Capacitance | C_{OB} | $V_{CB} = 5V, I_E = 0$ $f = 1\text{MHz}$ | | | 4 | pF |
| Collector-Base Capacitance | C_{CB} | $V_{CB} = 5V, I_E = 0$ $f = 100\text{KHz}$ | | | 4 | pF |
| Current Gain Bandwidth Product | f_T | $V_{CE} = 20V, I_C = 10\text{mA}$ $f = 100\text{MHz}$ | 250 | | | MHz |

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$. Duty Cycle $\leq 2\%$

