

Transistors

2N4123

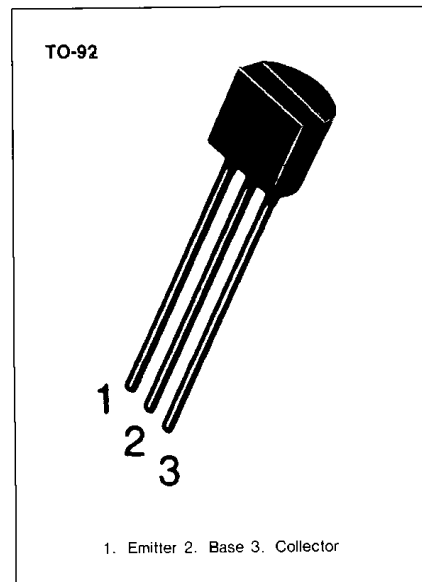
GENERAL PURPOSE TRANSISTOR

• 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 $\leq 2\%$

