



**PRODUCT NAME** : 2N2102 NPN General Purpose Transistor

**PRICE** : Rs 49.00

**SKU** : RM1798



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## DESCRIPTION

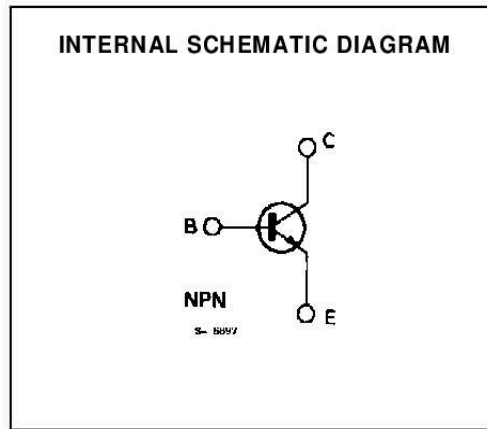
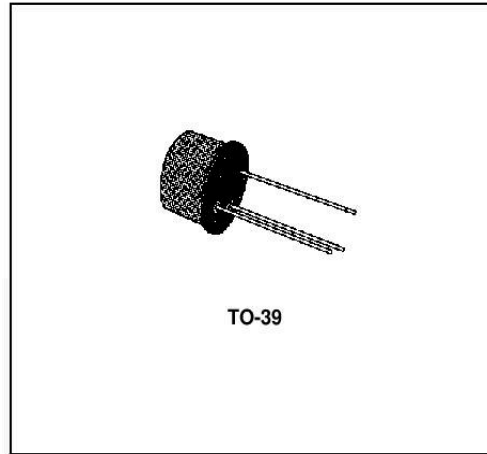
## Features

- Collector-Emitter Volt ( $V_{ce0}$ ): 65V
- Collector-Base Volt ( $V_{cb0}$ ): 120V
- Collector Current ( $I_c$ ): 1.0A
- $h_{fe}$ : 40-120 @ 150mA
- Power Dissipation ( $P_{tot}$ ): 1000mW
- Current-Gain-Bandwidth ( $f_{total}$ ): -
- Type: NPN

**GENERAL PURPOSE AMPLIFIER AND SWITCH**

**DESCRIPTION**

The 2N2102 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. It is intended for a wide variety of small-signal and medium power applications in military and industrial equipments.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	120	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	65	V
$V_{CER}$	Collector-emitter Voltage ( $R_{BE} \leq 10 \Omega$ )	80	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	1	A
$P_{Tot}$	Total Power Dissipation at $T_{amb} \leq 25 \text{ }^\circ\text{C}$	1	W
	at $T_{case} \leq 25 \text{ }^\circ\text{C}$	5	W
$T_{stg}, T_j$	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

**2N2102**

**THERMAL DATA**

$R_{th\ j-cas\ e}$	Thermal Resistance Junction-case	Max	35	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\ ^\circ\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 60\ \text{V}$ $V_{CB} = 60\ \text{V}$ $T_{amb} = 150\ ^\circ\text{C}$			2 2	nA $\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 5\ \text{V}$			5	nA
$V_{(BR)\ CBO}$	Collector-base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\ \mu\text{A}$	120			V
$V_{CEO\ (sus)^*}$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 30\ \text{mA}$	65			V
$V_{CE\ (sat)^*}$	Collector-emitter Saturation Voltage	$I_C = 150\ \text{mA}$ $I_B = 15\ \text{mA}$			0.5	V
$V_{BE\ (sat)^*}$	Base-emitter Saturation Voltage	$I_C = 150\ \text{mA}$ $I_B = 15\ \text{mA}$			1.1	V
$h_{FE}^*$	DC Current Gain	$I_C = 10\ \mu\text{A}$ $V_{CE} = 10\ \text{V}$ $I_C = 100\ \mu\text{A}$ $V_{CE} = 10\ \text{V}$ $I_C = 10\ \text{mA}$ $V_{CE} = 10\ \text{V}$ $I_C = 150\ \text{mA}$ $V_{CE} = 10\ \text{V}$ $I_C = 500\ \text{mA}$ $V_{CE} = 10\ \text{V}$ $I_C = 1\ \text{A}$ $V_{CE} = 10\ \text{V}$	10 20 35 40 25 10		120	
$h_{fe}$	High Frequency Current Gain	$I_C = 50\ \text{mA}$ $V_{CE} = 10\ \text{V}$ $f = 20\ \text{MHz}$		6		
NF	Noise Figure	$I_C = 300\ \mu\text{A}$ $V_{CE} = 10\ \text{V}$ $BW = 1\ \text{Hz}$ $f = 1\ \text{KHz}$ $R_G = 510\ \Omega$			8	dB
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\ \text{V}$ $f = 1\ \text{MHz}$			15	pF
$C_{EBO}$	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = 0.5\ \text{V}$ $f = 1\ \text{MHz}$			80	pF

\* Pulsed : pulse duration = 300  $\mu\text{s}$ , duty cycle = 1 %.

