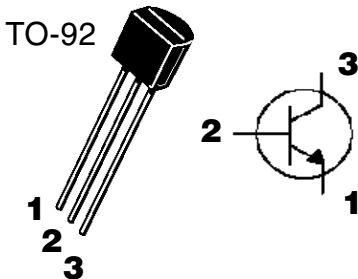




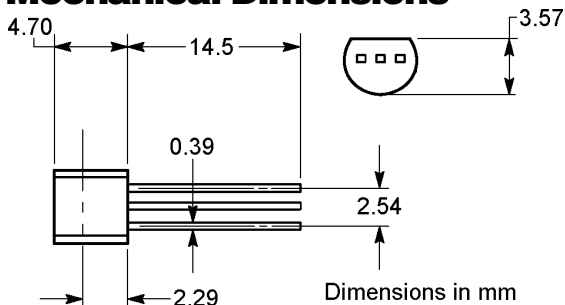
# NPN General Purpose Transistor

2N4400

## Description



## Mechanical Dimensions



Dimensions in mm

### Maximum Ratings

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CE0}$	40	V
Collector - Base Voltage	$V_{CBO}$	60	V
Emitter - Base Voltage	$V_{EBO}$	5.0	V
Collector Current (Continuous)	$I_C$	600	mA
Total Device Dissipation FR-5 Board (Note1) $T_A = 25^\circ\text{C}$	$P_D$	625	mW
Junction and Storage Temperature	$T_J, T_{STG}$	-55 to 150	$^\circ\text{C}$

### Electrical Characteristics @ 25°C

Characteristic	Symbol	Min	Max	Unit
Collector - Emitter Breakdown Voltage ( $I_C = 1.0\text{mA}$ )	$V_{BR(CEO)}$	40	---	V
Collector - Base Breakdown Voltage ( $I_C = 0.1\text{mA}$ )	$V_{BR(CBO)}$	60	---	V
Emitter - Base Breakdown Voltage ( $I_E = 0.01\text{mA}$ )	$V_{BR(EBO)}$	5.0	---	V
Collector Cutoff Current ( $V_{CE} = 35\text{V}, V_{EB} = 0.4\text{V}$ )	$I_{CEX}$	---	0.1	$\mu\text{A}$
DC Current Gain ( $I_C = 1.0\text{mA}, V_{CE} = 1.0\text{V}$ ) ( $I_C = 10\text{mA}, V_{CE} = 1.0\text{V}$ ) ( $I_C = 150\text{mA}, V_{CE} = 1.0\text{V}$ ) ( $I_C = 500\text{mA}, V_{CE} = 2.0\text{V}$ )	$H_{FE}$	20 40 50 20	--- --- 150 ---	---
Collector - Emitter Saturation Voltage ( $I_C = 150\text{mA}, I_B = 15\text{mA}$ ) ( $I_C = 500\text{mA}, I_B = 50\text{mA}$ )	$V_{CE(sat)}$	---	0.4 0.75	V
Base - Emitter Saturation Voltage ( $I_C = 150\text{mA}, I_B = 15\text{mA}$ ) ( $I_C = 500\text{mA}, I_B = 50\text{mA}$ )	$V_{BE(sat)}$	---	0.95 1.2	V
Current - Gain - Bandwidth Product ( $I_C = 20\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$ )	$f_T$	200	---	MHz
Output Capacitance ( $V_{CB} = 5\text{V}, I_E = 0, f = 1.0\text{MHz}$ )	$C_{ob}$	---	6.5	pF