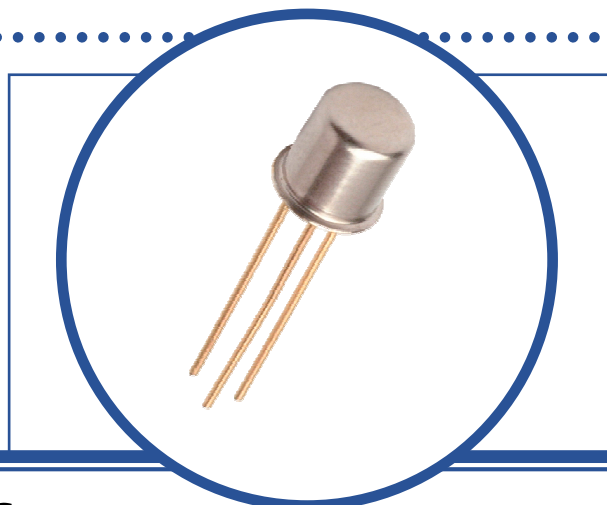


# NPN GENERAL PURPOSE TRANSISTOR

## 2N4104

- Hermetic TO-18 Metal Package
- Screening Options Available



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise stated)

V <sub>CB0</sub>	Collector – Base Voltage	60V
V <sub>CEO</sub>	Collector – Emitter Voltage	60V
V <sub>EBO</sub>	Emitter – Base Voltage	10V
I <sub>C</sub>	Continuous Collector Current	100mA
P <sub>D</sub>	Total Power Dissipation at T <sub>A</sub> = 25°C Derate Above 25°C	300mW 1.71mW/°C
T <sub>J</sub>	Junction Temperature Range	-65 to +200°C
T <sub>stg</sub>	Storage Temperature Range	-65 to +200°C

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R <sub>θJA</sub>	Thermal Resistance, Junction To Ambient	583	°C/W

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



# SILICON RF SMALL SIGNAL NPN TRANSISTOR 2N4104

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
V <sub>(BR)CBO</sub> <sup>(1)</sup>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 10μA I <sub>B</sub> = 0	60			V
V <sub>(BR)CEO</sub> <sup>(1)</sup>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10mA I <sub>B</sub> = 0	60			
V <sub>(BR)EBO</sub> <sup>(1)</sup>	Emitter-Base Breakdown Voltage	I <sub>C</sub> = 10μA I <sub>C</sub> = 0	10			
h <sub>FE</sub> <sup>(1)</sup>	Forward-current transfer ratio	I <sub>C</sub> = 1.0mA V <sub>CE</sub> = 5V	400		800	-
V <sub>CE(sat)</sub> <sup>(1)</sup>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1.0mA I <sub>B</sub> = 0.1mA			0.3	V

## DYNAMIC CHARACTERISTICS

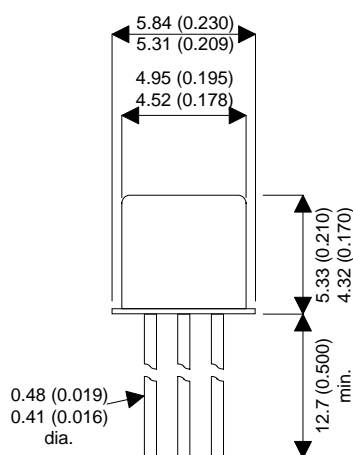
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 10mA V <sub>CE</sub> = 5V f = 100MHz	90			MHz
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = 1.0mA V <sub>CE</sub> = 5V f = 1.0KHz	400			
C <sub>obo</sub>	Output Capacitance	V <sub>CB</sub> = 10V I <sub>E</sub> = 0 f = 1.0MHz			4.5	pF

### Notes

(1) Pulse Width ≤ 300us, δ ≤ 2%

## MECHANICAL DATA

Dimensions in mm (inches)



## TO-18 (TO-206AA) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector

