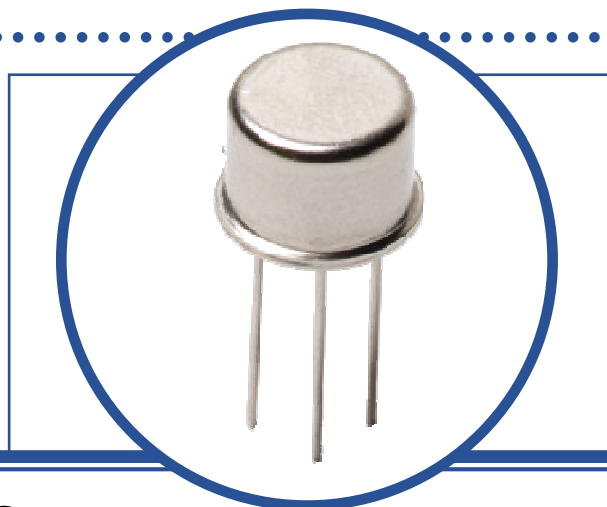


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

2N4001

- Low Power
- Hermetic TO-39 Metal package.
- Ideally suited for Medium Speed Switching and General Purpose Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	120V
V_{CEO}	Collector – Emitter Voltage	100V
V_{EBO}	Emitter – Base Voltage	8V
I_C	Continuous Collector Current	1.0A
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above 25°C	1.0W 5.71mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	175	$^\circ\text{C/W}$

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 PLANAR EPITAXIAL NPN TRANSISTOR 2N4001

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	100			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}$ $I_E = 0$	120			
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1.0\text{mA}$ $I_C = 0$	8			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			0.5	V
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 500\text{mA}$ $V_{CE} = 2\text{V}$	40		120	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 100\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	30	40		MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			60	pF
t_{on}	Turn-On Time	$I_C = 500\text{mA}$ $V_{CC} = 30\text{V}$ $I_{B1} = 50\text{mA}$			300	ns
t_{off}	Turn-Off Time	$I_C = 500\text{mA}$ $V_{CC} = 30\text{V}$ $I_{B1} = -I_{B2} = 50\text{mA}$			2000	

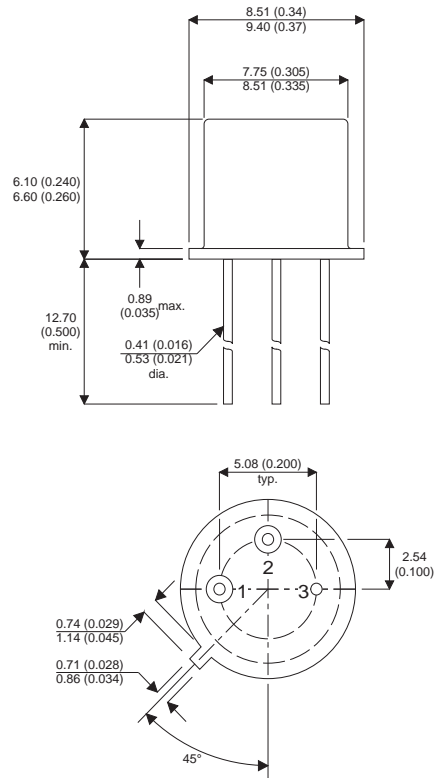
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N4001

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector