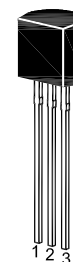


13001

NPN Silicon Epitaxial Planar Transistor

for high voltage and high speed switching applications



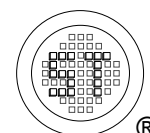
1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	500	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current (DC)	I_C	0.3	A
Total Power Dissipation	P_{tot}	0.75	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 10\text{ V}$, $I_C = 0.25\text{ mA}$ at $V_{CE} = 20\text{ V}$, $I_C = 20\text{ mA}$	h_{FE} h_{FE}	5 10	- 40	- -
Collector Base Cutoff Current at $V_{CB} = 500\text{ V}$	I_{CBO}	-	100	μA
Collector Emitter Cutoff Current at $V_{CE} = 400\text{ V}$	I_{CEO}	-	200	μA
Emitter Base Cutoff Current at $V_{EB} = 9\text{ V}$	I_{EBO}	-	100	μA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	500	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	400	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	9	-	V
Collector Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 10\text{ mA}$	$V_{CE(sat)}$	-	0.5	V
Base Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 10\text{ mA}$	$V_{BE(sat)}$	-	1.2	V
Transition Frequency at $V_{CE} = 20\text{ V}$, $I_C = 20\text{ mA}$, $f = 1\text{ MHz}$	f_T	8	-	MHz
Storage Time at UI9600, $I_C = 100\text{ mA}$	t_s	-	3	μs
Fall Time at UI9600, $I_C = 100\text{ mA}$	t_f	-	1	μs



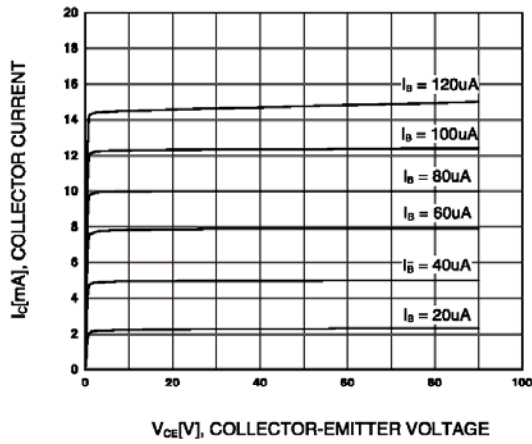


Figure 1. Static Characteristic

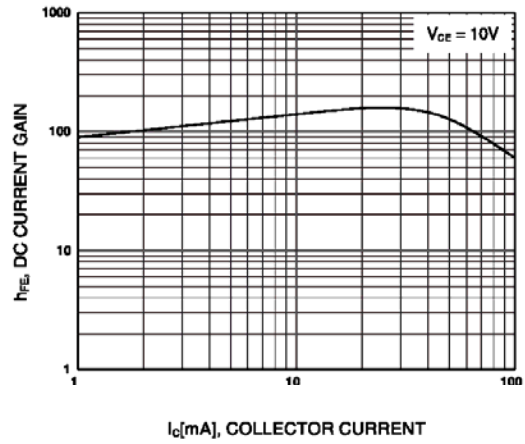


Figure 2. DC current Gain

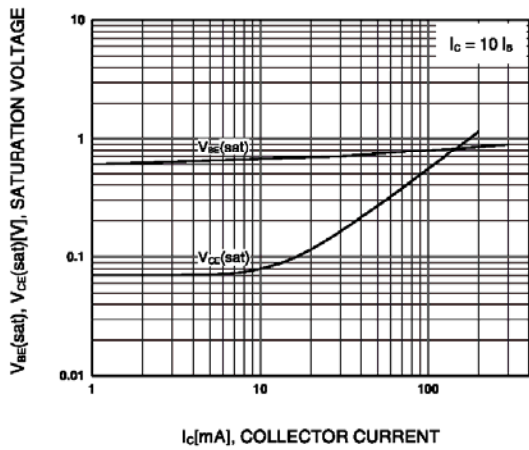


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

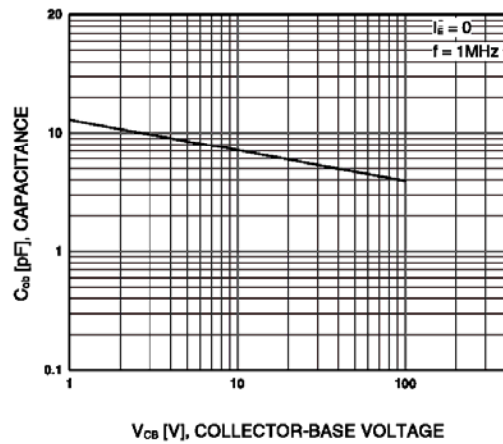


Figure 4. Collector Output Capacitance

