

2SC2001

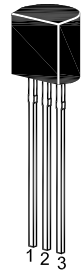
NPN Silicon Epitaxial Planar Transistor

Features

- On special request, these transistors can be manufactured in different pin configurations
- The transistor is subdivided into three groups, O, Y and G, according to its DC current gain

Applications

- For switching and AF amplifier applications



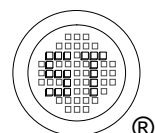
1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CEO}	25	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_{C}	700	mA
Power Dissipation	P_{tot}	600	mW
Junction Temperature	T_{j}	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

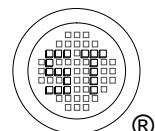
Parameter	Symbol	Max.	Unit
Thermal Resistance - Junction to Ambient	$R_{\theta\text{JA}}$	208	$^\circ\text{C/W}$



2SC2001

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$ at $V_{CE} = 1\text{ V}$, $I_C = 700\text{ mA}$	Current Gain Group O	h_{FE}	90	-	180	-
	Y	h_{FE}	135	-	270	-
	G	h_{FE}	200	-	400	-
		h_{FE}	50	-	-	-
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	-	0.1	μA	
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	-	0.1	μA	
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CBO}$	30	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	25	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	5	-	-	V	
Collector Emitter Saturation Voltage at $I_C = 700\text{ mA}$, $I_B = 70\text{ mA}$	$V_{CE(sat)}$	-	-	0.6	V	
Base Emitter Saturation Voltage at $I_C = 700\text{ mA}$, $I_B = 70\text{ mA}$	$V_{BE(sat)}$	-	-	1.2	V	
Base Emitter Voltage at $I_C = 10\text{ mA}$, $V_{CE} = 6\text{ V}$	V_{BE}	0.6	-	0.7	V	
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$, $I_C = 10\text{ mA}$	f_T	50	-	-	MHz	
Output Capacitance at $V_{CB} = 6\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	25	pF	



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

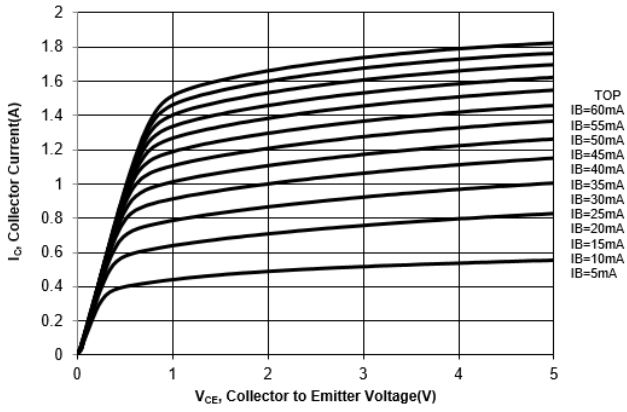


Fig. 2 Collector Current vs. Base to Emitter Voltage

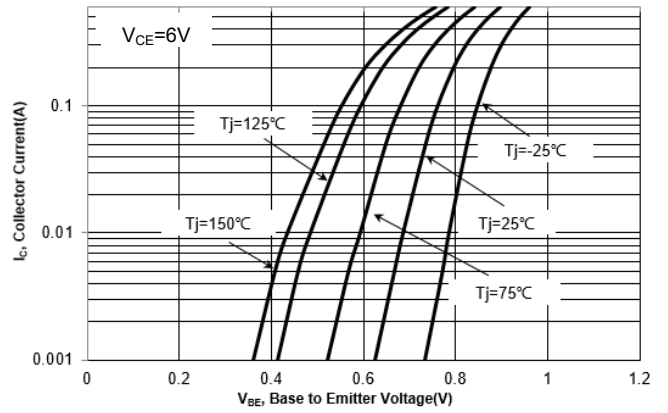


Fig. 3 DC Current Gain vs. Collector Current

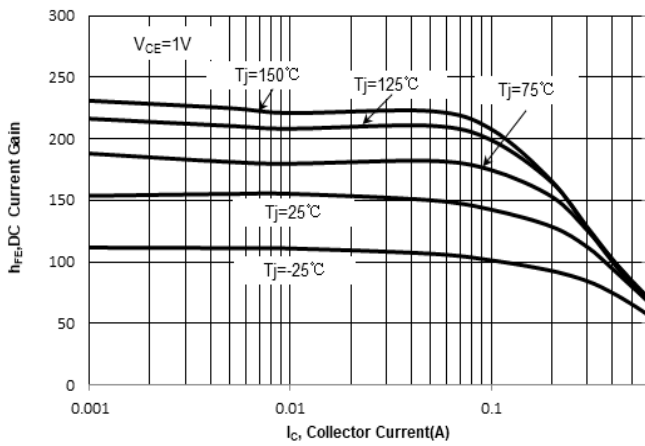
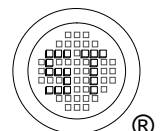
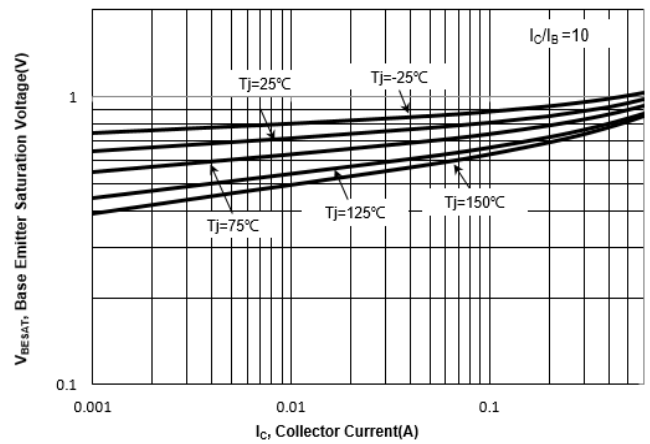


Fig. 4 V_{BESAT} vs. Collector Current



Electrical Characteristics Curves

Fig. 5 V_{CESAT} VS. Collector Current

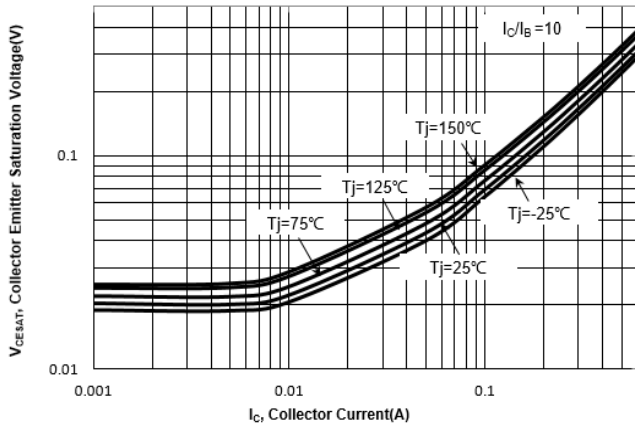


Fig. 6 Output Capacitance

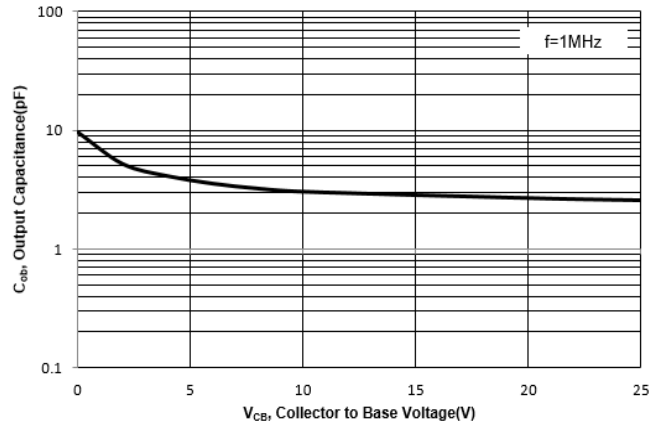


Fig. 7 Power Derating Curve

