

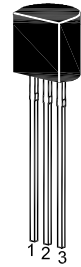
2SC3731

NPN Silicon Epitaxial Planar Transistor

for general purpose amplifier and high speed switching applications.

The transistor is subdivided into three groups, M, L and K, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



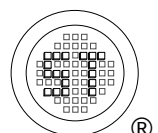
1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

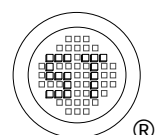
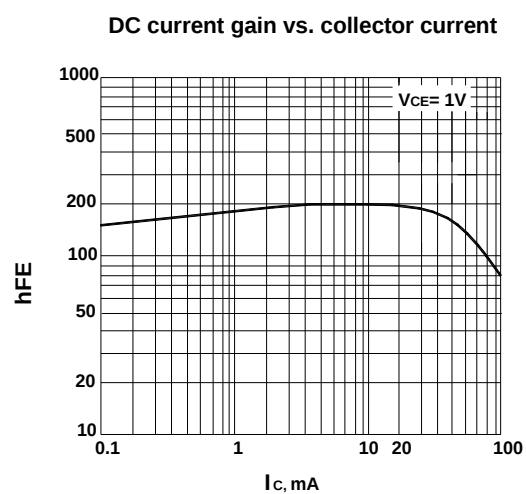
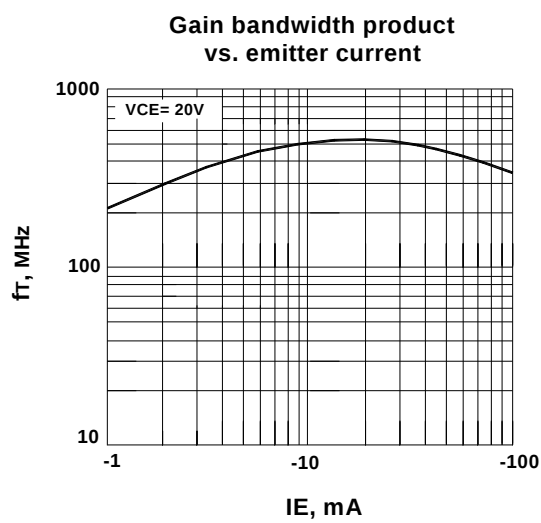
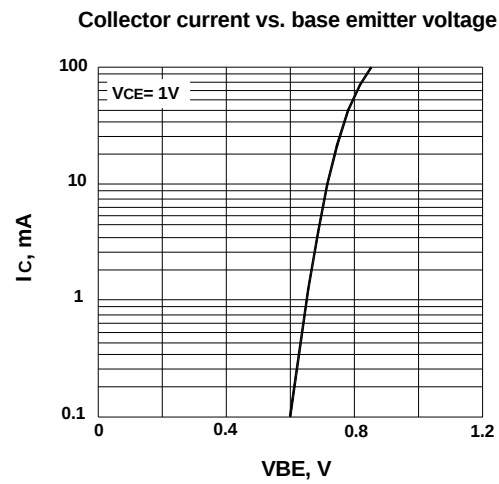
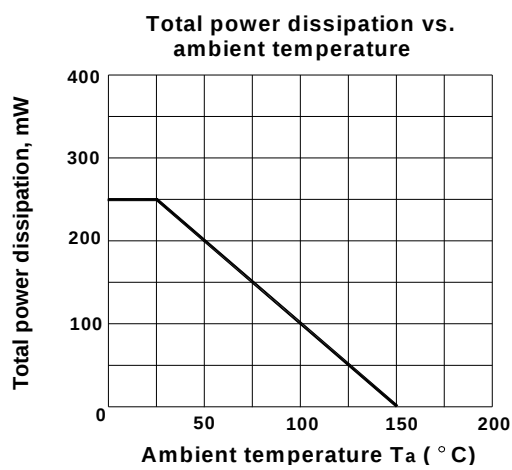
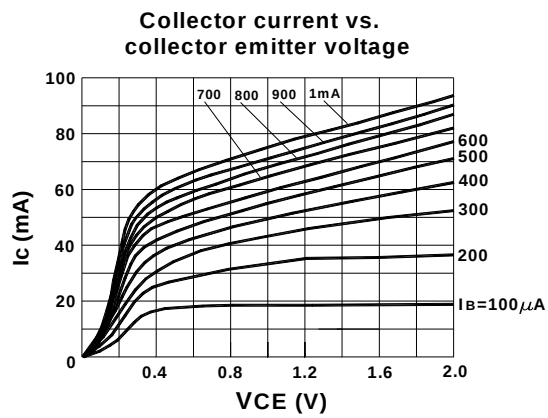
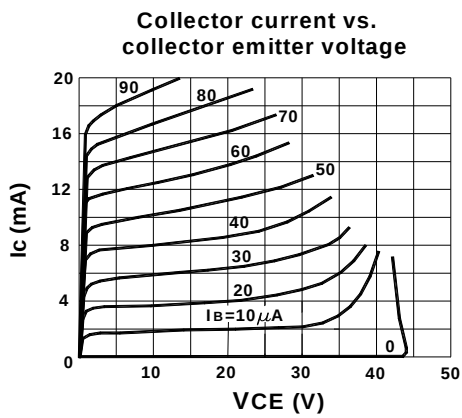
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Power Dissipation	P_{tot}	250	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

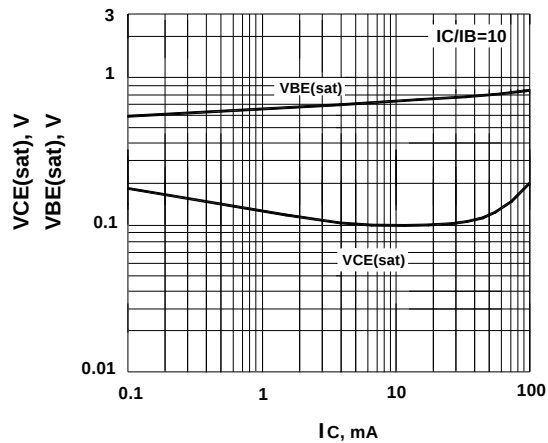
Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 1\text{ V}$, $I_C = 10\text{ mA}$ at $V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$ Current Gain Group M L K	h_{FE}	75	-	150	-
	h_{FE}	100	-	200	-
	h_{FE}	150	-	300	-
	h_{FE}	25	80	-	-
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	-	0.1	μA
Emitter Base Cutoff Current at $V_{EB} = 3\text{ V}$	I_{EBO}	-	-	0.1	μA
Collector Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 5\text{ mA}$	$V_{CE(sat)}$	-	0.12	0.3	V
Base Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 5\text{ mA}$	$V_{BE(sat)}$	-	0.8	0.95	V
Gain Bandwidth Product at $V_{CE} = 20\text{ V}$, $-I_E = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	300	510	-	MHz
Output Capacitance at $V_{CB} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	3	4	pF
Turn-on Time See test circuit	t_{on}	-	-	70	ns
Storage Time See test circuit	t_{stg}	-	100	200	ns
Turn-off Time See test circuit	t_{off}	-	-	250	ns

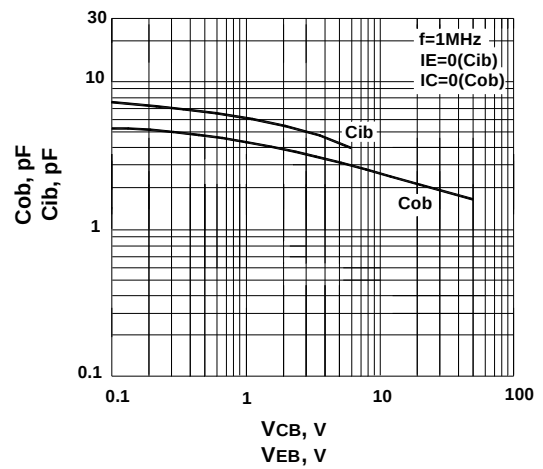




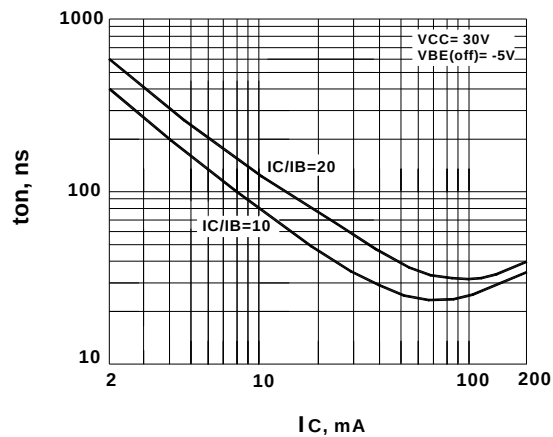
Base and collector saturation voltage vs. collector current



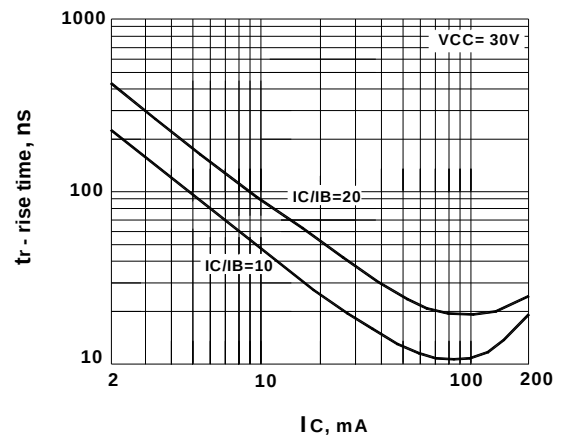
Input and output capacitance vs. reverse voltage



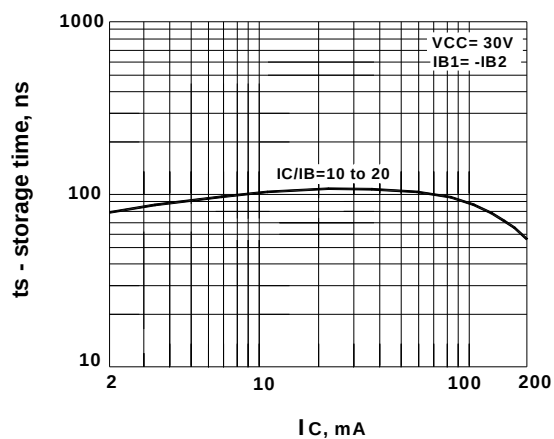
Turn on time vs. collector current



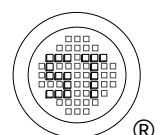
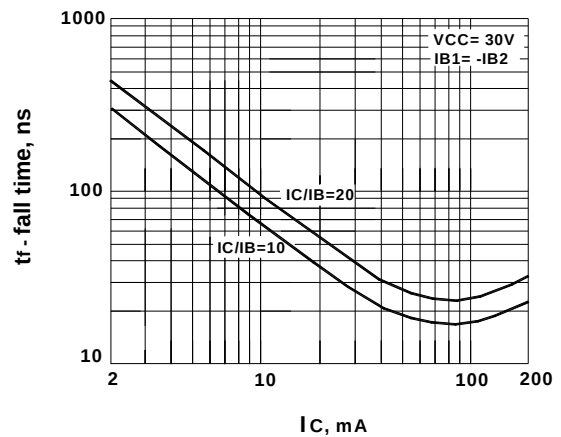
Rise time vs. collector current



Storage time vs. collector current



Fall time vs. collector current



SWITCHING TIME TEST CIRCUIT

