

ST 2SC3731

NPN Silicon Epitaxial Planar Transistor

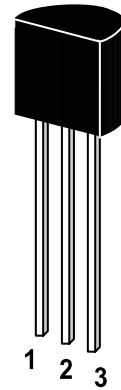
for general purpose amplifier and high speed switching applications.

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.

Features

- High frequency current gain
- High speed switching
- Small output capacitance
- Complementary to ST 2SA1458 PNP transistor



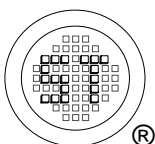
1. Emitter 2. Collector 3. Base

TO-92 Plastic Package

Weight approx. 0.19g

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

	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_s	-55 to+150	$^\circ\text{C}$



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Certificate No. 7116



ISO 9001:2000
Certificate No. 0506098

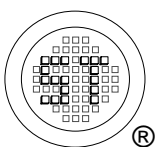
Dated : 07/08/2003

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

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain* at $V_{CE}=1\text{V}$, $I_C=10\text{mA}$					
Current Gain Group M	h_{FE}	75	-	150	-
L	h_{FE}	100	-	200	-
K	h_{FE}	150	-	300	-
at $V_{CE}=1\text{V}$, $I_C=100\text{mA}$	h_{FE}	25	80	-	-
Collector Cutoff Current at $V_{CB}=30\text{V}$	I_{CBO}	-	-	0.1	μA
Emitter Cutoff Current at $V_{EB}=3\text{V}$	I_{EBO}	-	-	0.1	μA
Collector Saturation Voltage* at $I_C=50\text{mA}$, $I_B=5\text{mA}$	$V_{CE(sat)}$	-	0.12	0.3	V
Base Saturation Voltage* at $I_C=50\text{mA}$, $I_B=5\text{mA}$	$V_{BE(sat)}$	-	0.8	0.95	V
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
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

*Pulsed $PW \leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$



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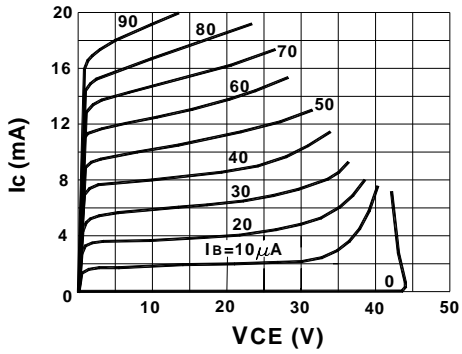
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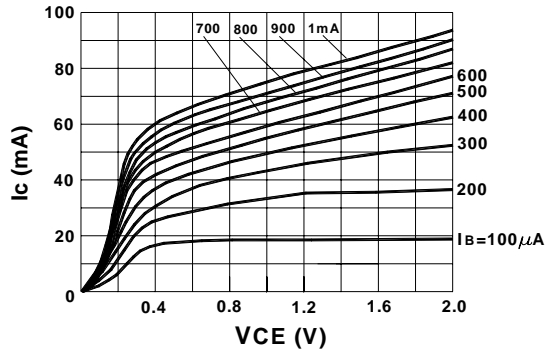
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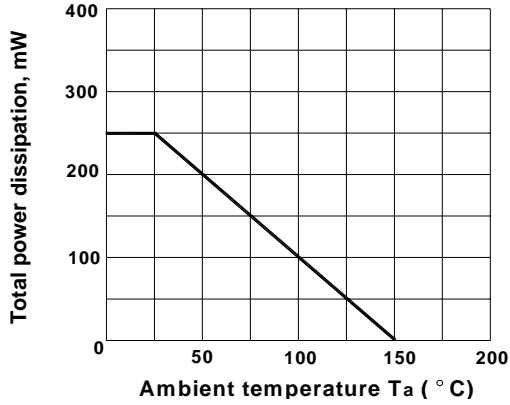
Collector current vs. collector emitter voltage



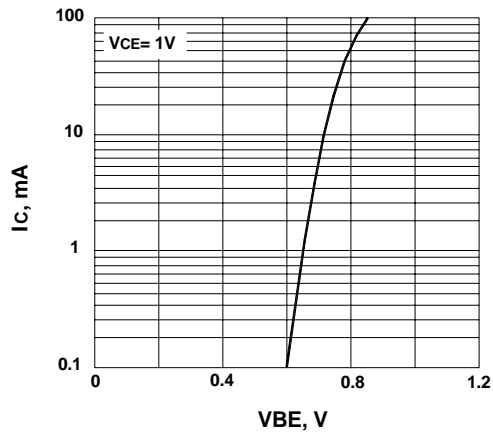
Collector current vs. collector emitter voltage



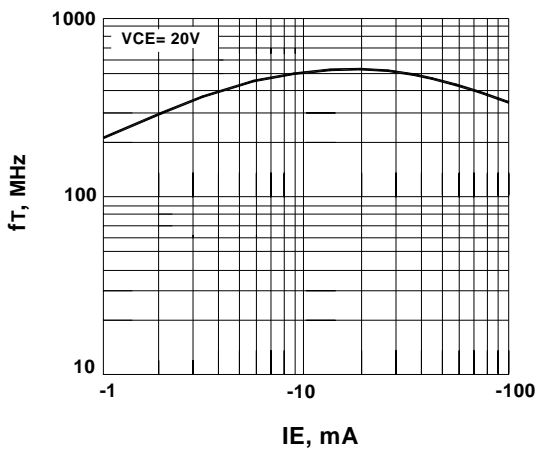
Total power dissipation vs. ambient temperature



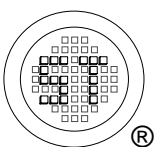
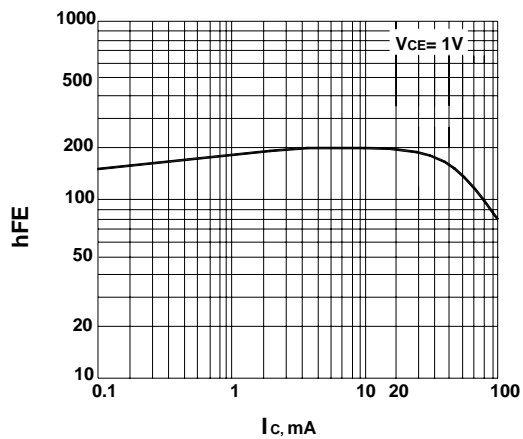
Collector current vs. base emitter voltage



Gain bandwidth product vs. emitter current



DC current gain vs. collector current



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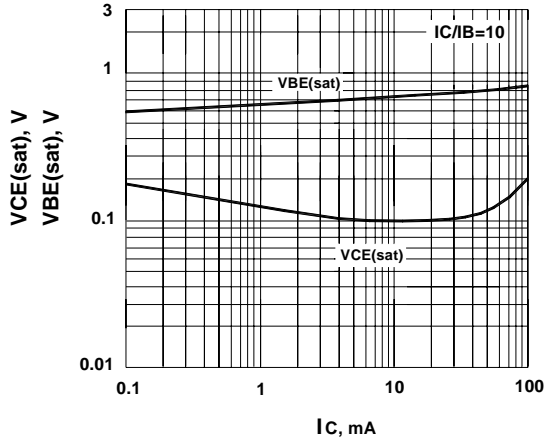


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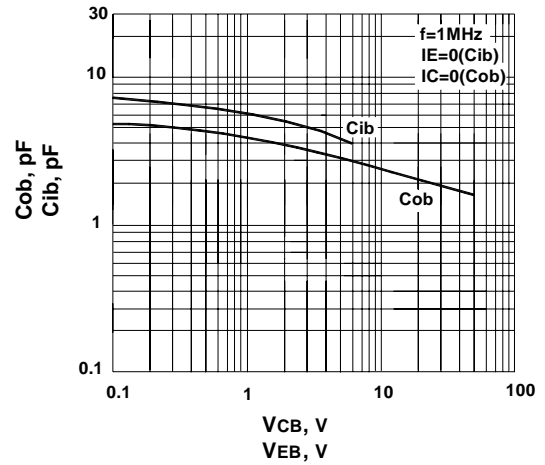


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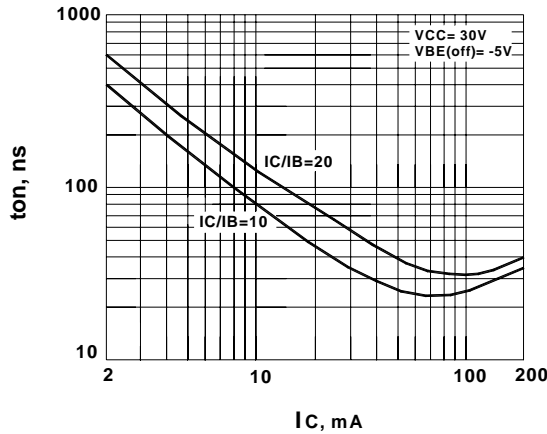
Base and collector saturation voltage vs. collector current



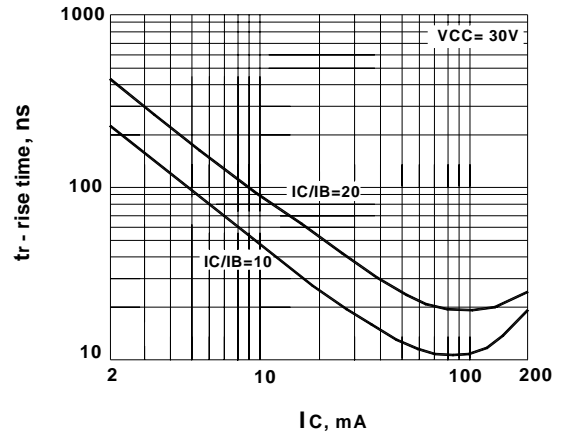
Input and output capacitance vs. reverse voltage



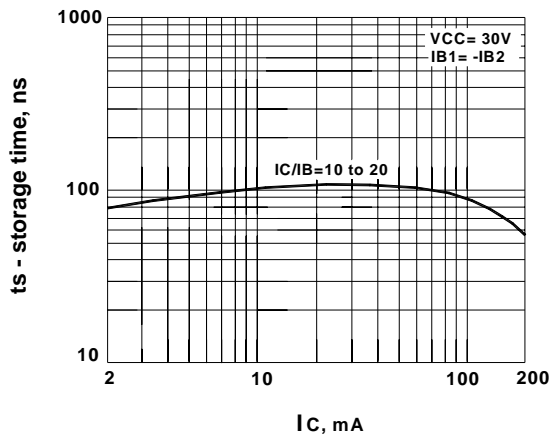
Turn on time vs. collector current



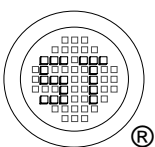
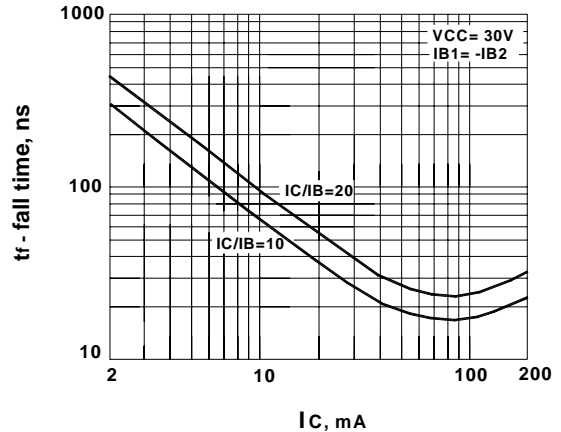
Rise time vs. collector current



Storage time vs. collector current



Fall time vs. collector current



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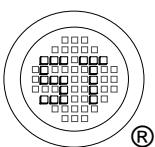
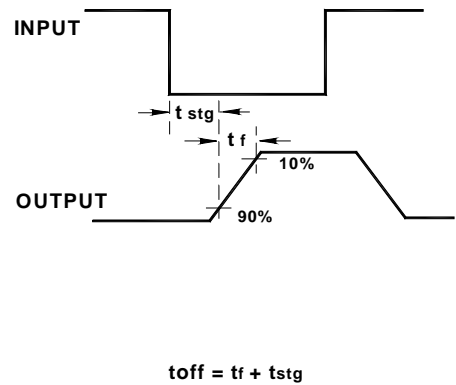
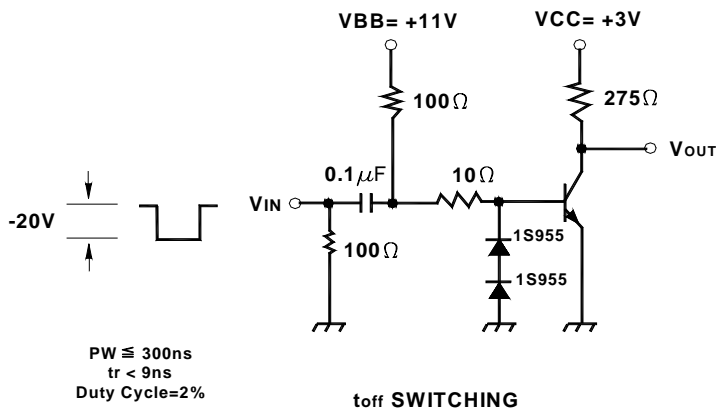
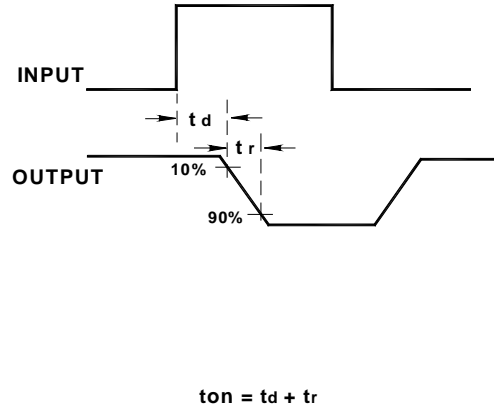
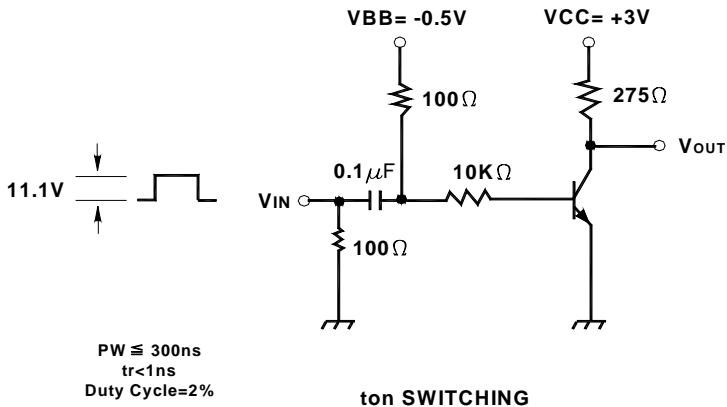


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SWITCHING TIME TEST CIRCUIT



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