Ordering number:EN2531A

NPN Epitaxial Planar Silicon Transistor

2SC4204

High-h_{FE}, AF Amplifier Applications

Applications

· AF amplifier, various drivers.

Features

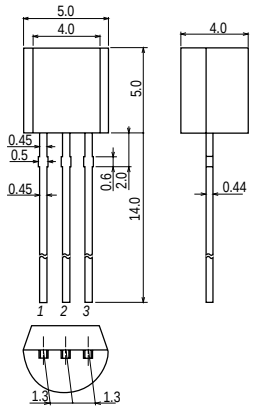
· Adoption of MBIT process.
· High DC current gain (h_{FE}=800 to 3200).
· Large current capacity (I_C=0.7A).
· Low collector-to-emitter saturation voltage ($V_{CE(sat)}$≤0.5V).
· High V_{EBO} (V_{EBO}≥15V).

Package Dimensions

unit:mm

2003B

[2SC4204]



1 : Emitter
2 : Collector
3 : Base
SANYO : NP
JEDEC : TO-92
EIAJ : SC-43

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEO}		25	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		0.7	A
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C		0.6	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

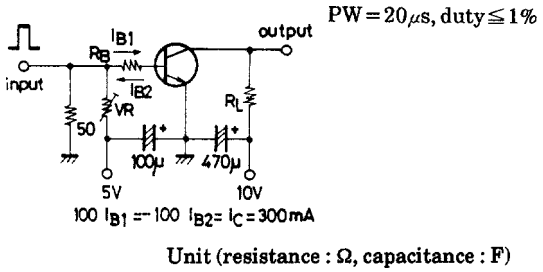
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=10V, I_C=0			0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=50mA	800	1500	3200	
	$h_{FE}2$	V_{CE}=5V, I_C=500mA	600			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		270		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		9		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=10mA		0.15	0.50	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=500mA, I_B=10mA		0.9	1.2	V

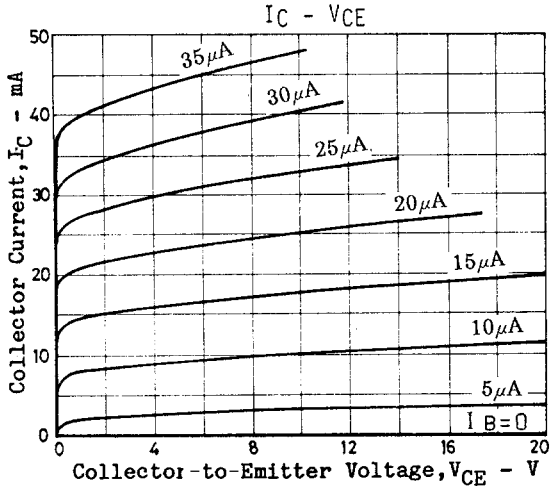
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

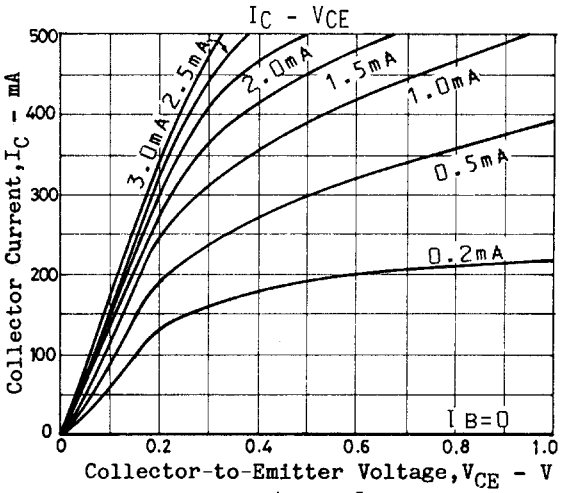
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	25			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	15			V
Turn-ON Time	t_{on}	See specified test circuit.		0.1		μs
Storage Time	t_{stg}	See specified test circuit.		0.6		μs
Fall Time	t_f	See specified test circuit.		0.06		μs

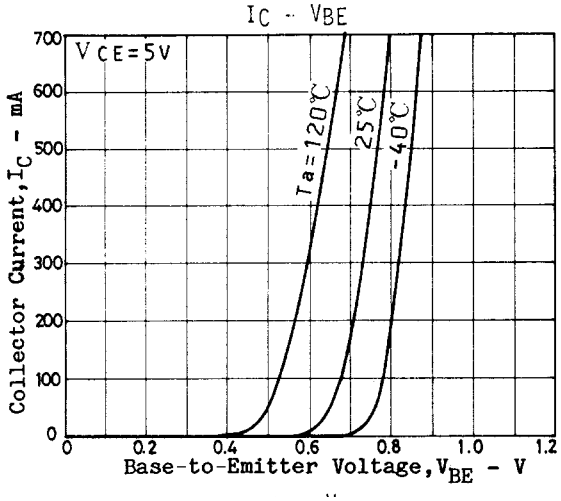
Switching Time Test Circuit

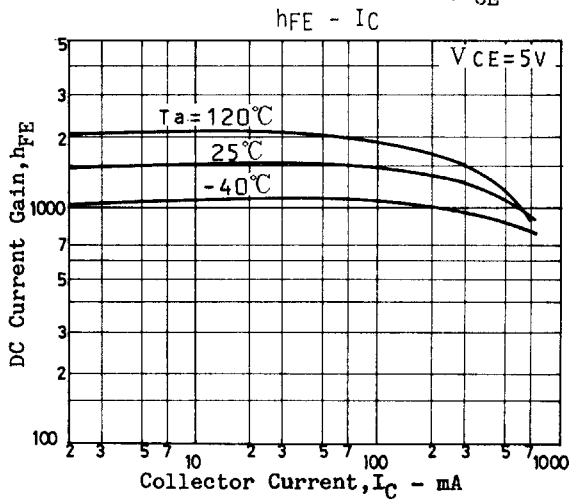


Unit (resistance : Ω, capacitance : F)

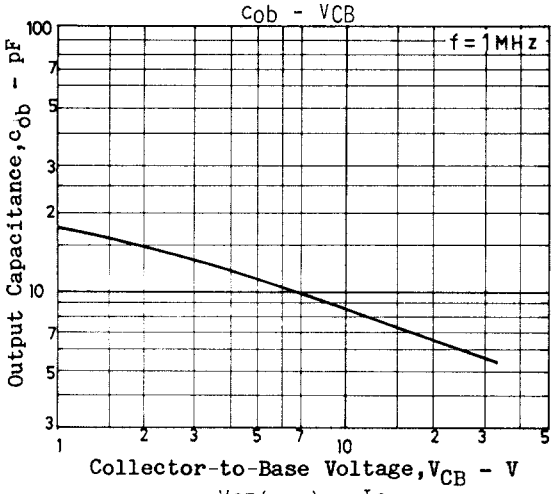




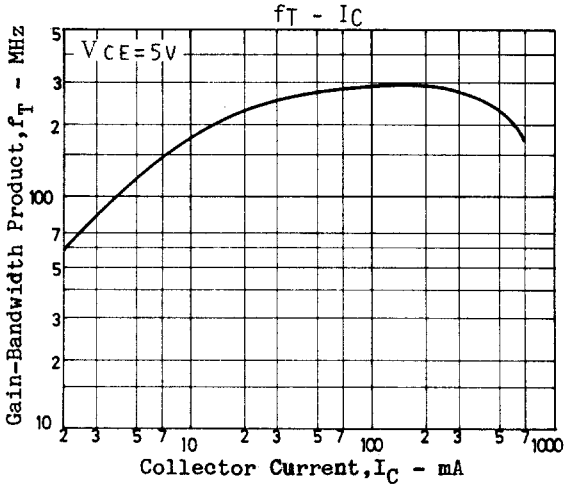




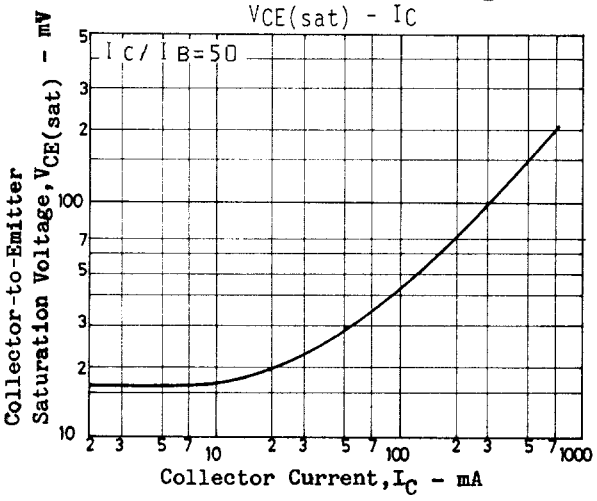
Cob - VCB



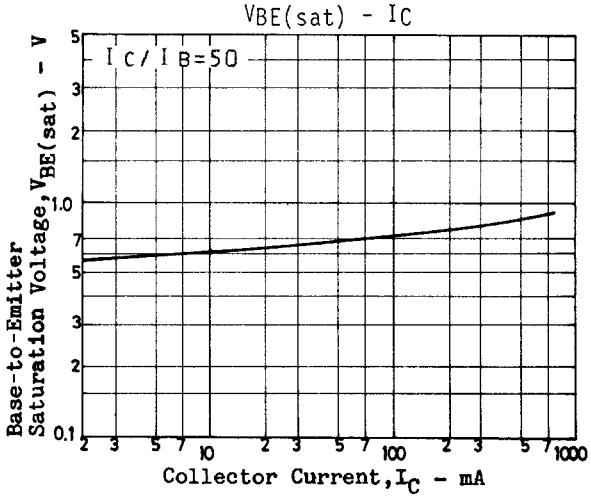
fT - IC



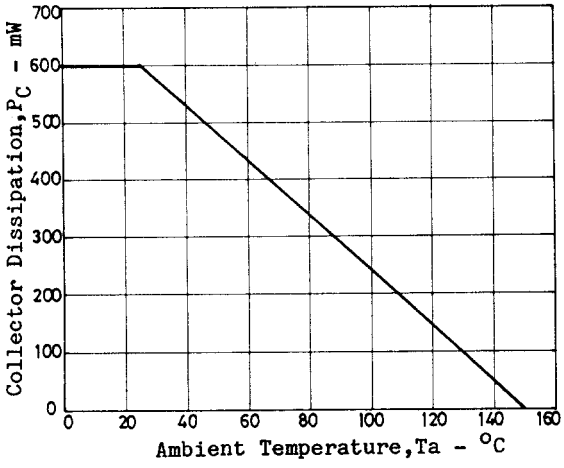
VCE(sat) - IC



VBE(sat) - IC



PC - Ta



A S O