Ordering number:EN2544B

NPN Epitaxial Planar Type Silicon Transistor

2SC3820

High h_{FE}, AF Amplifier Applications

Applications

· Drivers, muting circuits.

Features

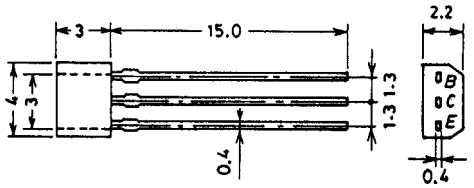
· Adoption of FBET and MBIT processes.
· High DC current gain (h_{FE}=800 to 3200).
· Low collector-to-emitter saturation voltage ($V_{CE(sat)}$≤0.5V).
· High V_{EBO} (V_{EBO}≥15V).
· Small C_{ob} (C_{ob}=2.0pF typ).

Package Dimensions

unit:mm

2033

[2SC3820]



B : Base
C : Collector
E : Emitter
SANYO : SPA

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		100	mA
Collector Current (Pulse)	I_{CP}		200	mA
Collector Dissipation	P_C		300	mW
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}=40V, 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}	V_{CE}=5V, I_C=10mA	800	1500	3200	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=10mA		200		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		2.0		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=50mA, I_B=1mA		0.1	0.5	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=50mA, I_B=1mA		0.8	1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	15			V

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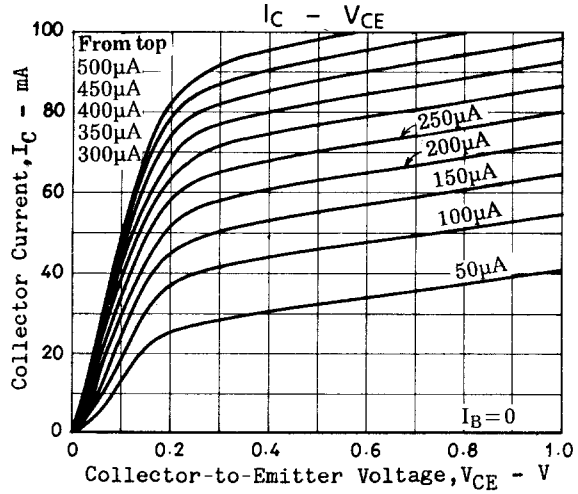
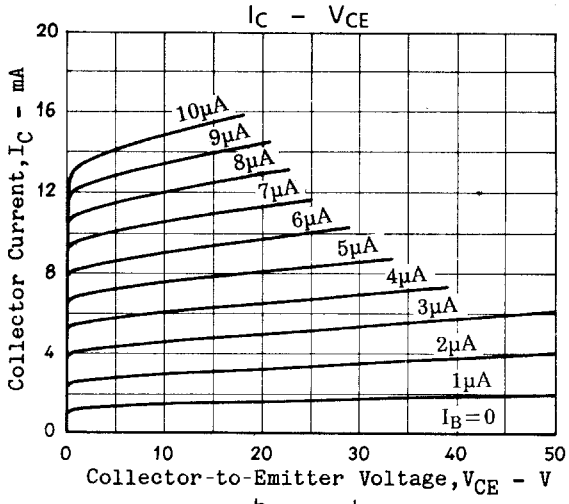
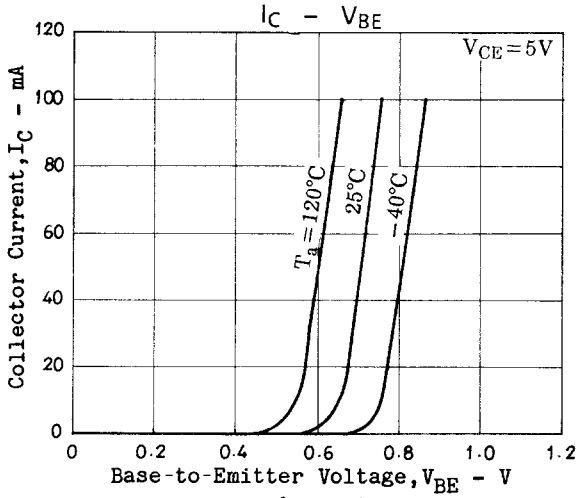
I_C – V_{CE}



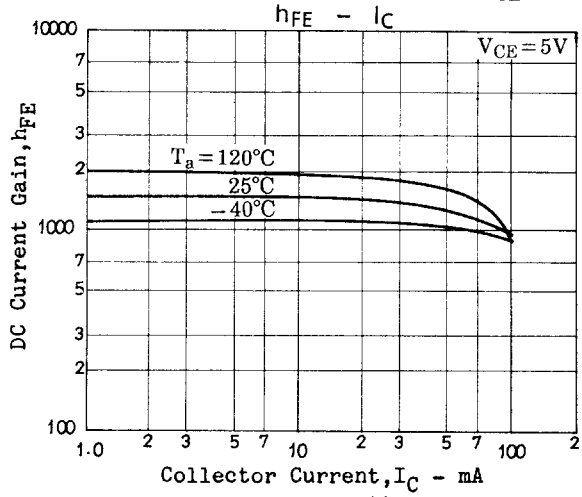
I_C – V_{CE}



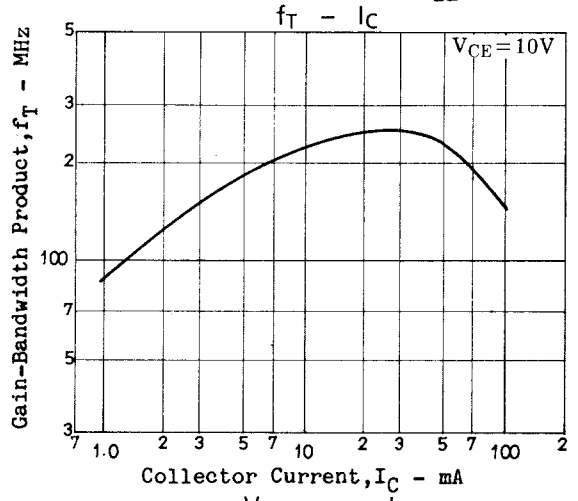
I_C – V_{BE}



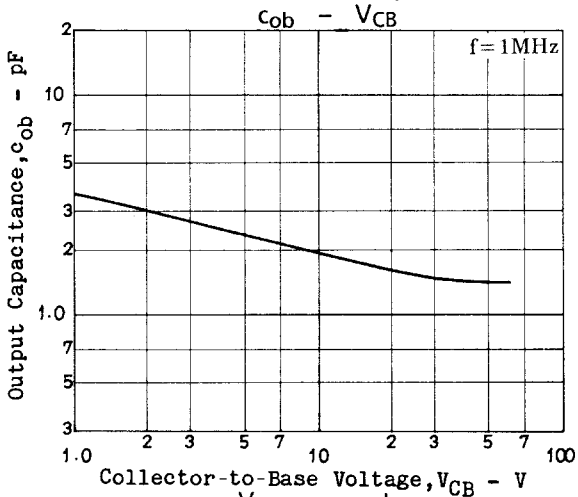
h_{FE} – I_C



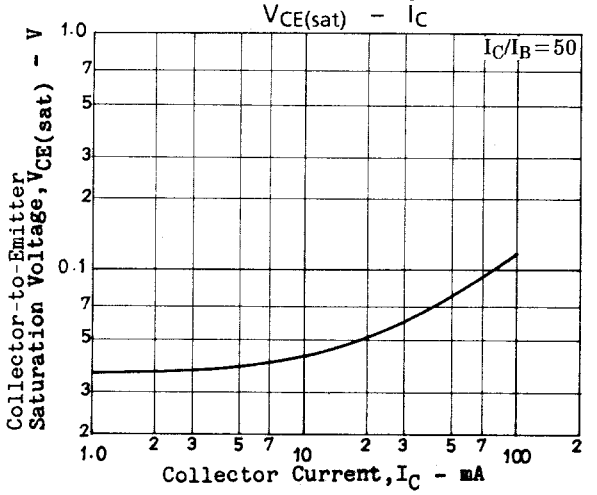
f_T – I_C



C_{ob} – V_{CB}



$V_{CE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C