Ordering number:EN2555A

PNP Epitaxial Planar Silicon Transistor

2SB1302

High-Current Switching Applications

Applications

· DC-DC converters, motor drivers, relay drivers, lamp drivers.

Features

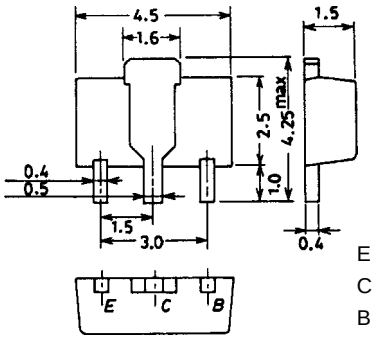
· Adoption of FBET, MBIT processes.
· Low collector-to-emitter saturation voltage.
· Large current capacity.
· Fast switching speed.
· Very small size making it easy to provide high-density, small-sized hybrid ICs.

Package Dimensions

unit:mm

2038

[2SB1302]



E : Emitter
C : Collector
B : Base
SANYO : PCP
(Bottom view)

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–25	V
Collector-to-Emitter Voltage	V_{CEO}		–20	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–5	A
Collector Current (Pulse)	I_{CP}		–8	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm²×0.8mm)	1.3	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			–500	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–500	nA
DC Current Gain	$h_{FE}1$	V_{CE}=–2V, I_C=–500mA	100*		400*	
	$h_{FE}2$	V_{CE}=–2V, I_C=–4A	60			
Gain-Bandwidth Product	f_T	V_{CE}=–5V, I_C=–200mA		320		MHz
Output Capacitance	C_{ob}	V_{CB}=–10V, f=1MHz		60		pF

* : The 2SB1302 is classified by 500mA h_{FE} as follows :

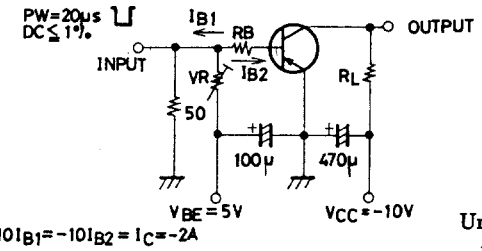
100	R	200	140	S	280	200	T	400

Marking : BJ
h_{FE} rank : R, S, T

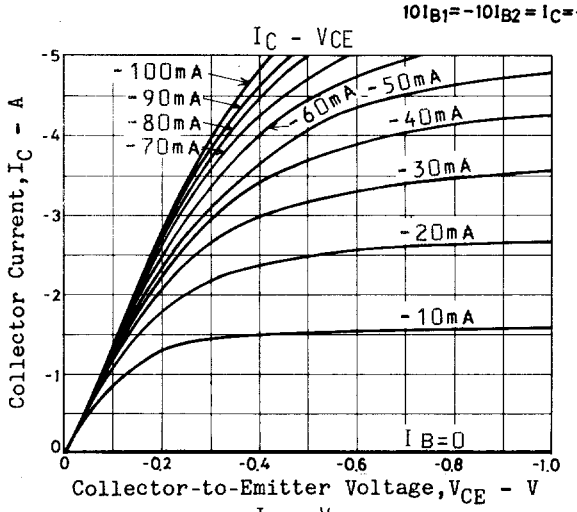
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

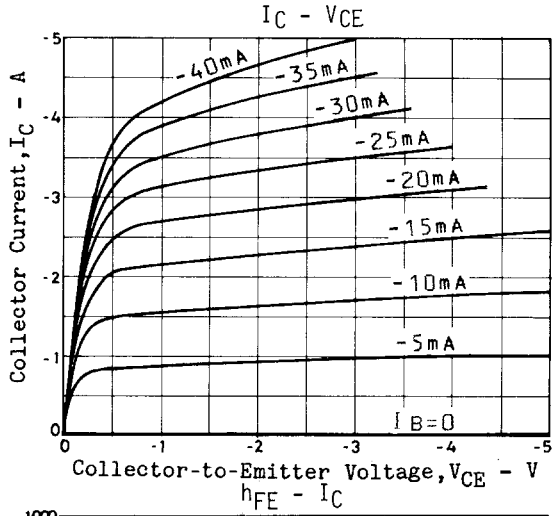
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=–3A, I_B=–60mA		–250	–500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=–3A, I_B=–60mA		–1.0	–1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	–5			V
Turn-ON Time	t_{on}	See specified test circuit.		40		ns
Storage Time	t_{stg}	See specified test circuit.		200		ns
Fall Time	t_f	See specified test circuit.		10		ns

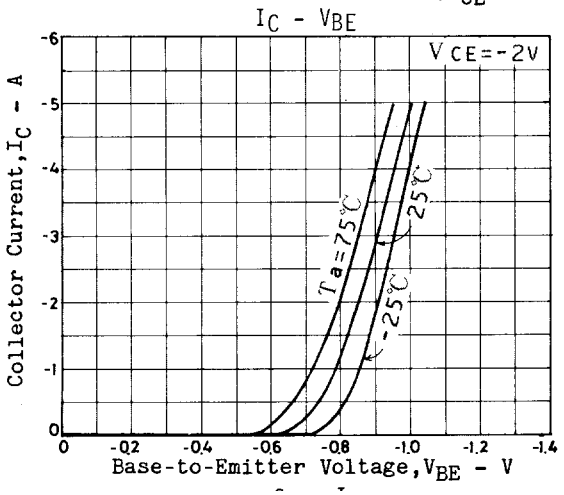
Switching Time Test Circuit

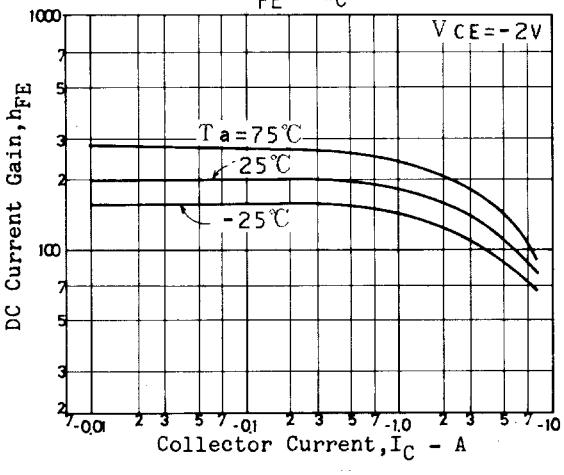


Unit (resistance : Ω, capacitance : F)

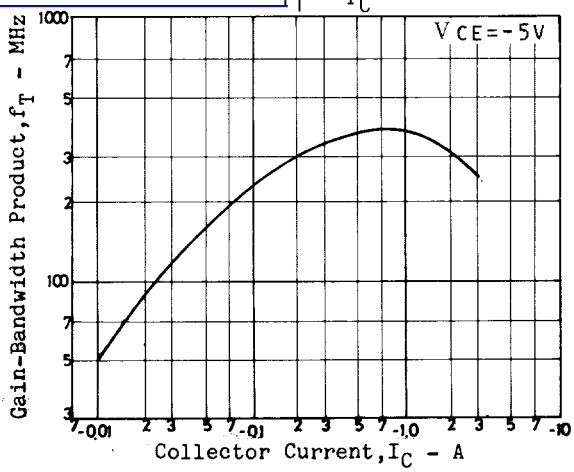




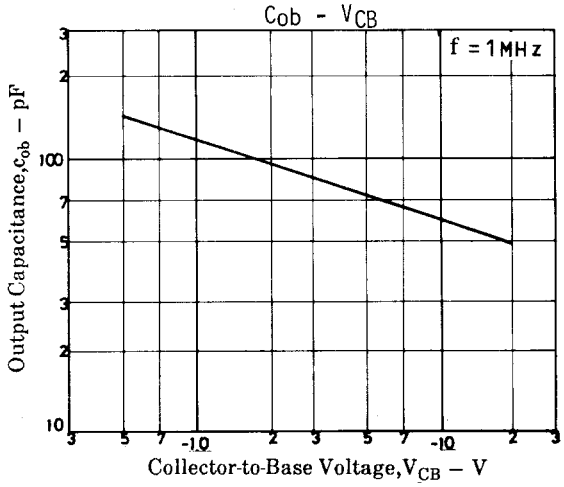




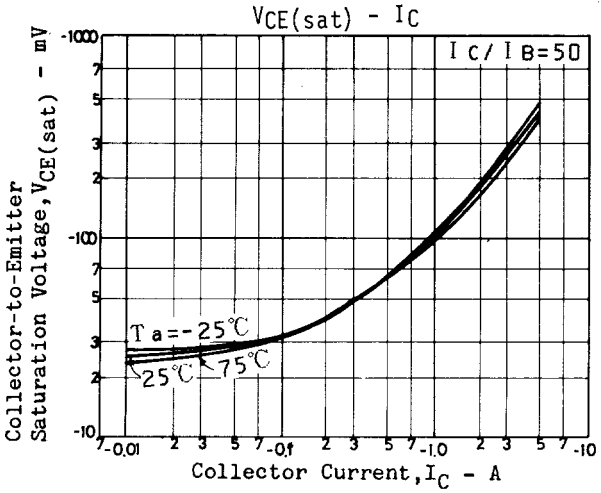
f_T - I_C



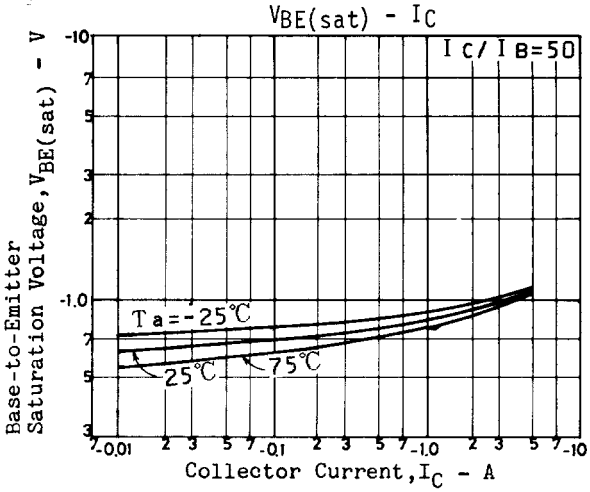
Cob - V_{CB}



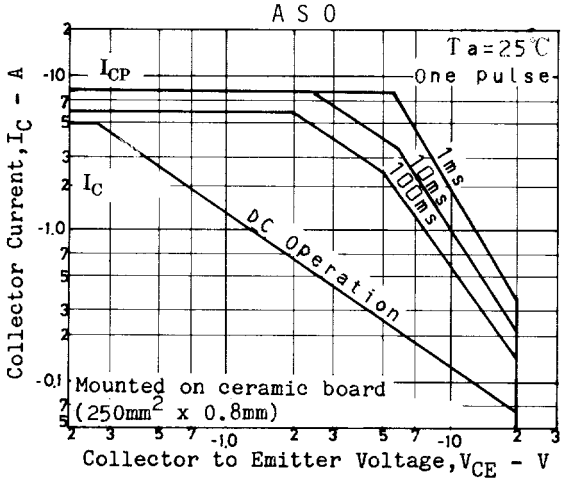
$V_{CE(sat)}$ - I_C



$V_{BE(sat)}$ - I_C



A S O



P_C - T_a