Ordering number:EN2114B

PNP Epitaxial Planar Silicon Transistor

2SB1205

Strobe High-Current Switching Applications

Applications

· Strobe, voltage regulators, relay drivers, lamp drivers.

Features

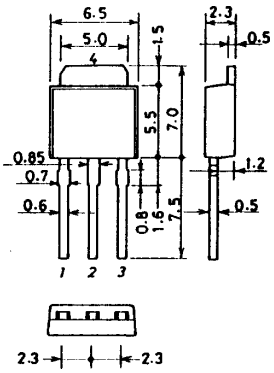
· Adoption of FBET, MBIT processes.
· Low saturation voltage.
· Fast switching speed.
· Large current capacity.
· Small and slim package making it easy to make 2SB1205-applied sets smaller.

Package Dimensions

unit:mm

2045B

[2SB1205]



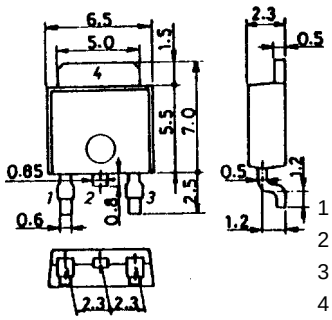
1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP

unit:mm

2044B

[2SB1205]



1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP-FA

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

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
Base Current	IB		–0.5	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	10	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

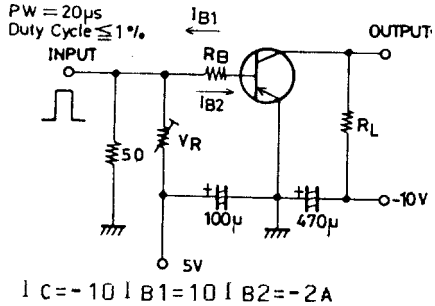
Electrical Characteristics at Ta = 25˚C

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_{CE}=–10V, f=1MHz		60		pF
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	$V_{(BE)EBO}$	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

* : The 2SB1205 is classified by 500mA h_{FE} as follows :

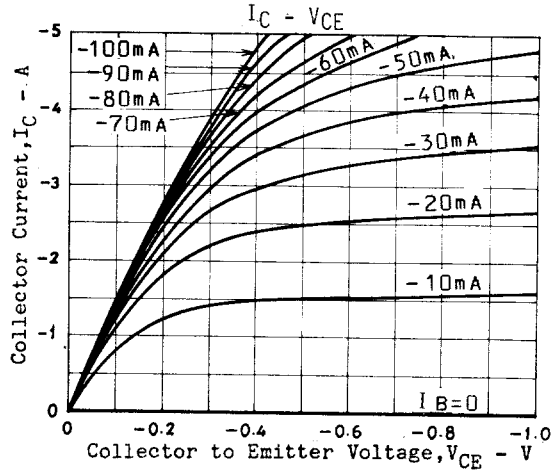
100 R 200	140 S 280	200 T 400

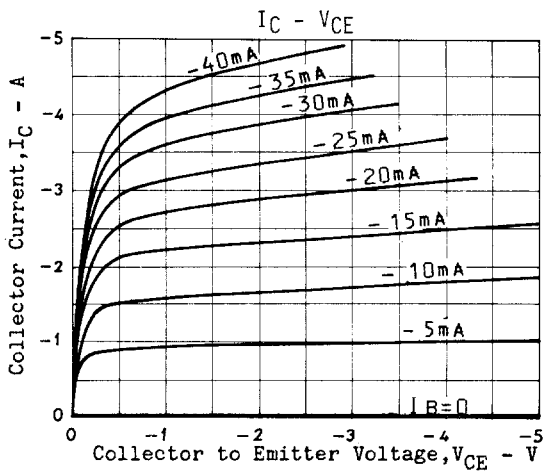
Switching Time Test Circuit

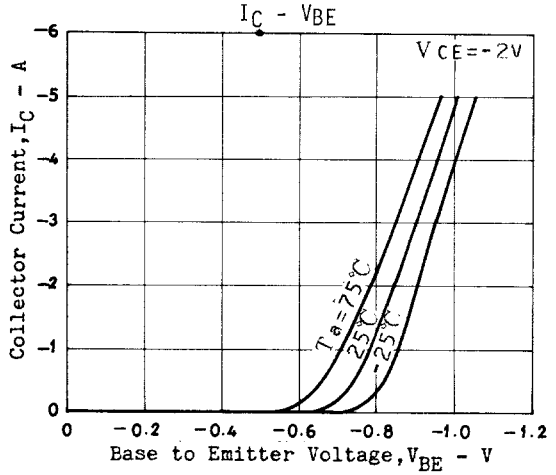


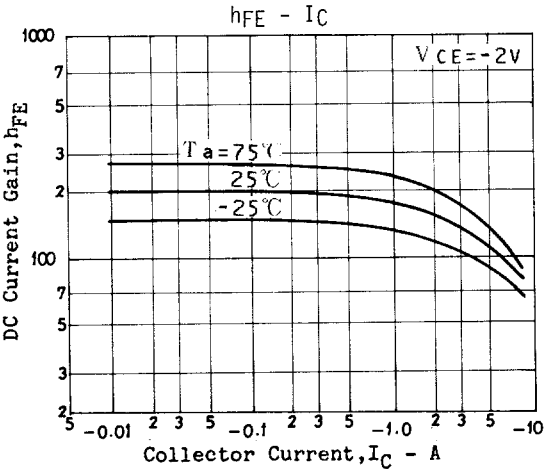
I C = - 10 I B1 = 10 I B2 = - 2A

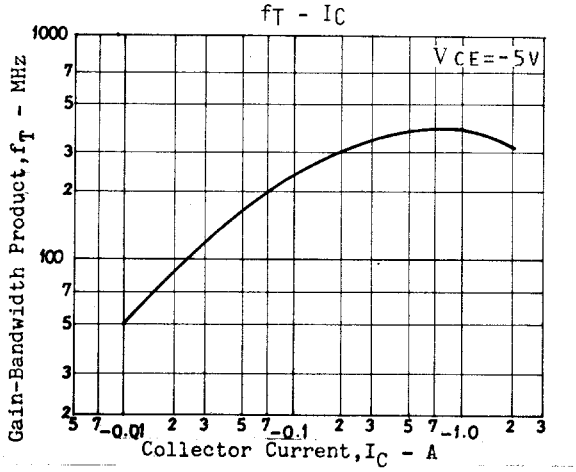
Unit (resistance : Ω, capacitance : F)

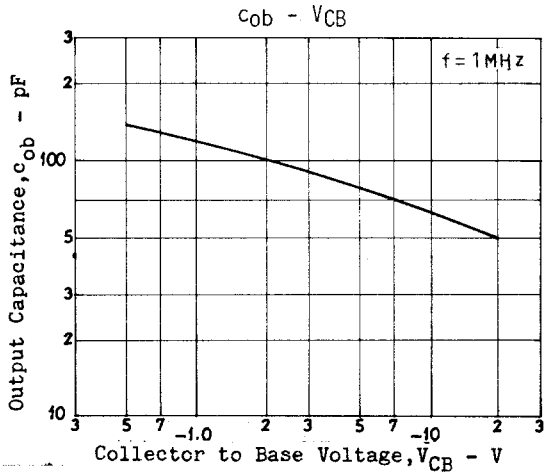

I_C - V_{CE}
-100mA
-90mA
-80mA
-70mA
-60mA
-50mA
-40mA
-30mA
-20mA
-10mA
I_B=0
Collector Current, I_C - A
Collector to Emitter Voltage, V_{CE} - V

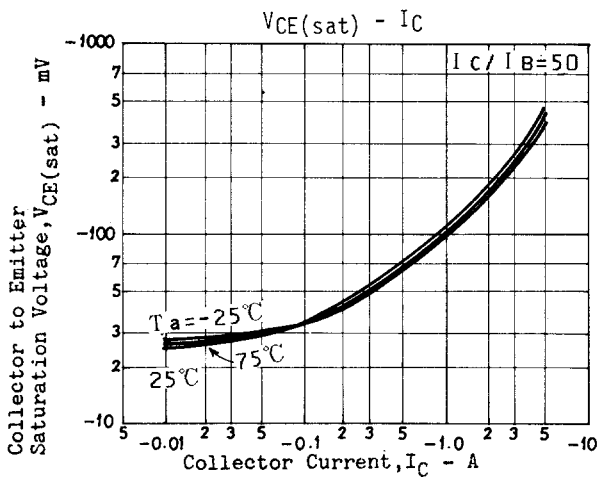

I_C - V_{CE}
-40mA
-35mA
-30mA
-25mA
-20mA
-15mA
-10mA
-5mA
I_B=0
Collector Current, I_C - A
Collector to Emitter Voltage, V_{CE} - V

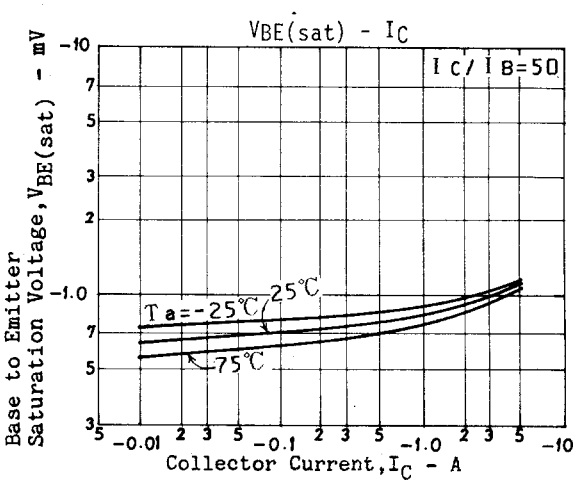

I_C - V_{BE}
V_{CE}=-2V
Ta=75℃
25℃
-25℃
Collector Current, I_C - A
Base to Emitter Voltage, V_{BE} - V


h_{FE} - I_C
V_{CE}=-2V
Ta=75℃
25℃
-25℃
DC Current Gain, h_{FE}
Collector Current, I_C - A


f_T - I_C
V_{CE}=-5V
Gain-Bandwidth Product, f_T - MHz
Collector Current, I_C - A


C_{ob} - V_{CB}
f=1MHz
Output Capacitance, C_{ob} - pF
Collector to Base Voltage, V_{CB} - V


$V_{CE(sat)}$ - I_C
I_C/I_B=50
Ta=-25℃
75℃
25℃
Collector to Emitter Saturation Voltage, $V_{CE(sat)}$ - mV
Collector Current, I_C - A


$V_{BE(sat)}$ - I_C
I_C/I_B=50
Ta=-25℃
25℃
75℃
Base to Emitter Saturation Voltage, $V_{BE(sat)}$ - mV
Collector Current, I_C - A