Ordering number:EN2930A

NPN Epitaxial Planar Silicon Transistor

2SC4306

High-Current Switching Applications

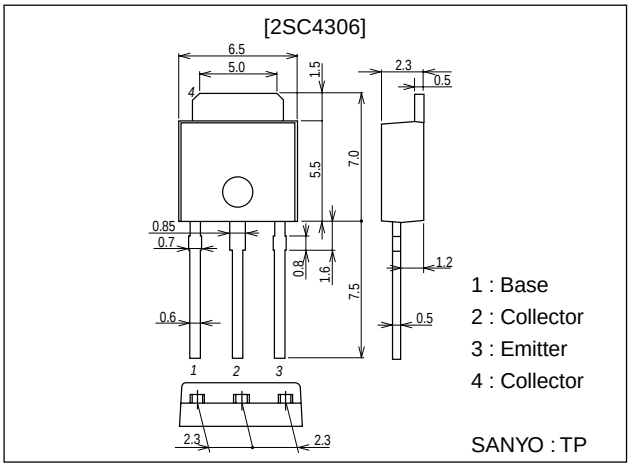
Features

- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- Small and slim package making it easy to make 2SC4306-used set smaller.

Package Dimensions

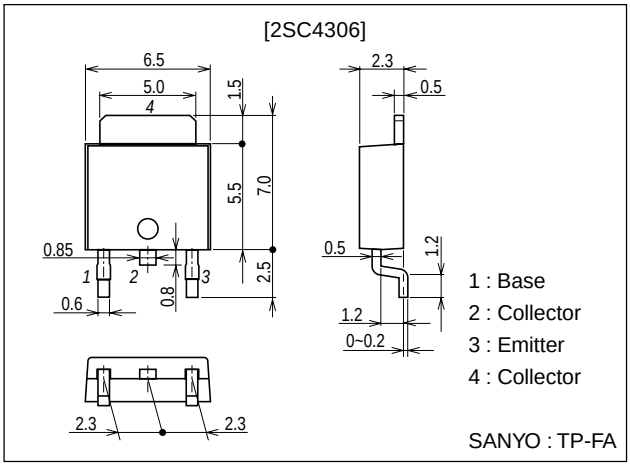
unit:mm

2045B



unit:mm

2044B



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}		30	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		8	A
Collector Current (Pulse)	I_{CP}		12	A
Base Current	I_B		1.5	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	15	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

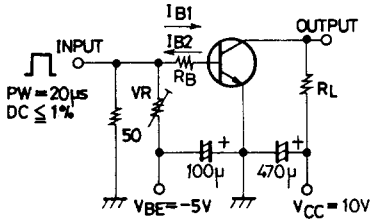
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=500mA	100*		400*	
	$h_{FE}2$	V_{CE}=2V, I_C=6A	70			
Gain-Bandwidth Product	f_T	V_{CE}=2V, I_C=500mA		250		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		60		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=5A, I_B=250mA		220	400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=5A, I_B=250mA		1	1.3	V
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}=∞	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.		30	300	ns
Storage Time	t_{stg}	See specified test circuit.		250	1000	ns
Fall Time	t_f	See specified test circuit.		15	150	ns

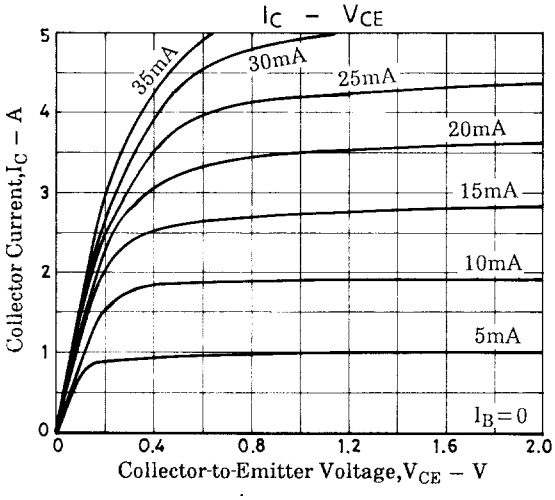
* : The 2SC4306 is classified by 500mA h_{FE} as follows :

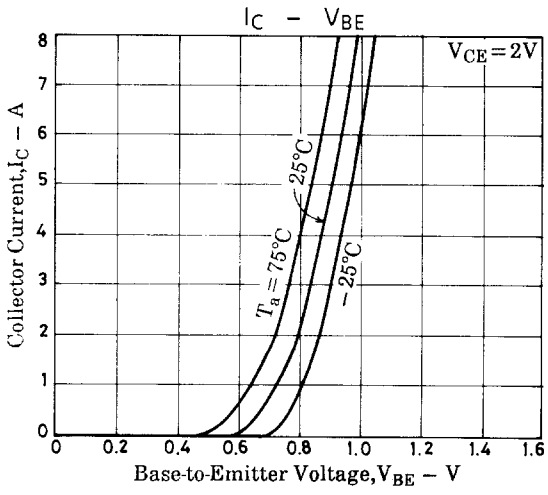
100	R	200	140	S	280	200	T	400

Switching Time Test Circuit

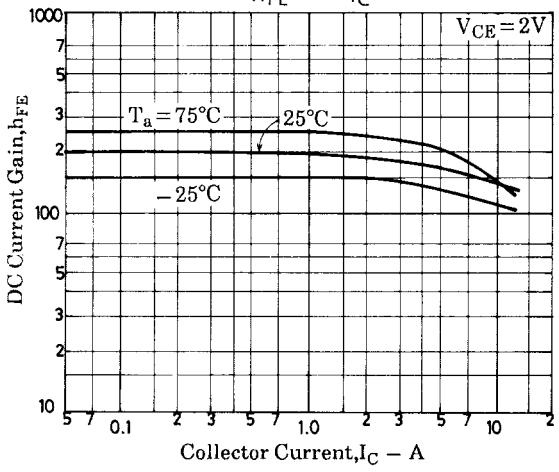


$20I_{B1} = -20I_{B2} = I_C = 5A$ **Unit (resistance : Ω, capacitance : F)**

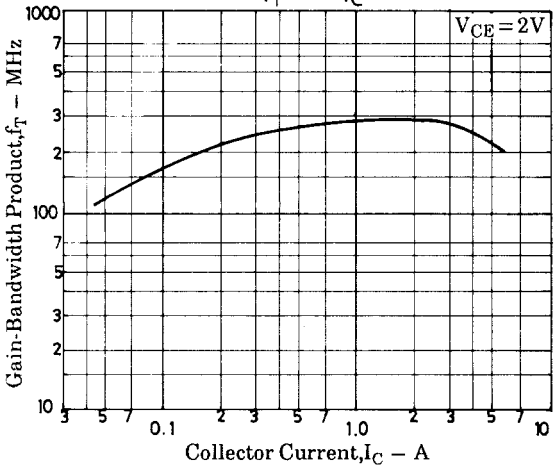




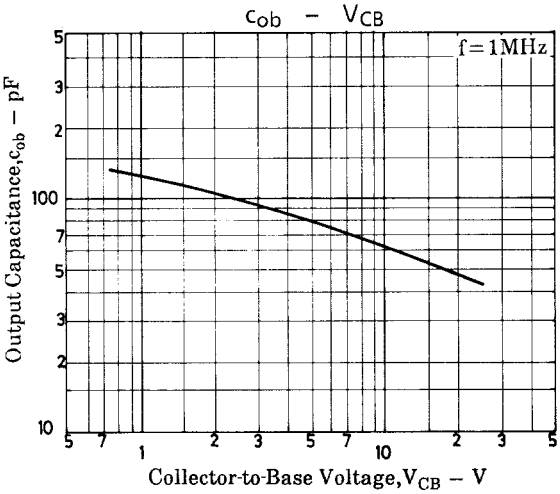
h_{FE} – I_C



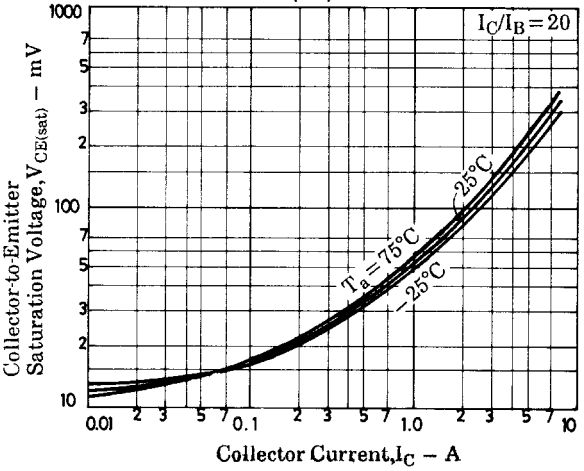
f_T – I_C



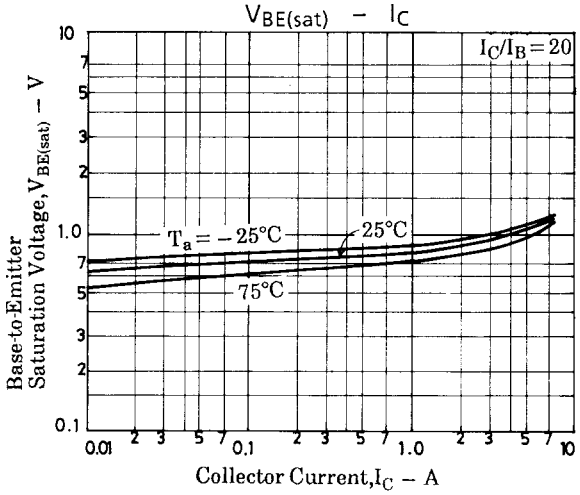
C_{ob} – V_{CB}



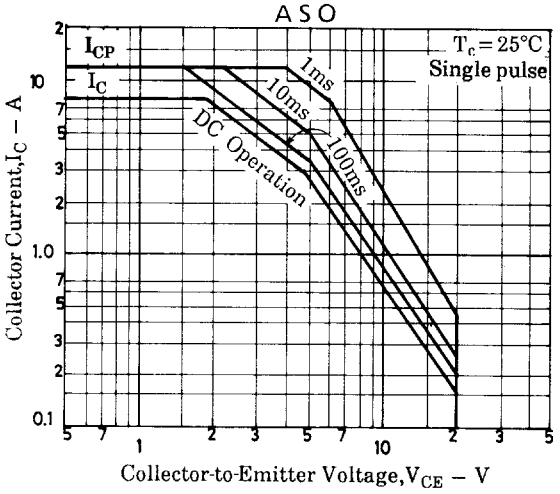
$V_{CE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C



ASO



P_C – Ta