



2SA1706/2SC4486

High-Current Switching Applications

Applications

- Voltage regulators, relay drivers, lamp drivers.

Features

- Adoption of FBET, MBIT processes.
- Large current capacity and wide ASO.
- Fast switching speed.

() : 2SA1706

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)2	A
Collector Current (Pulse)	I_{CP}		(-)4	A
Collector Dissipation	P_C		1	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)50V, I_E = 0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)100	nA
DC Current Gain	h_{FE1}	$V_{CE} = (-)2V, I_C = (-)100mA$	100*		400*	
	h_{FE2}	$V_{CE} = (-)2V, I_C = (-)1.5A$	40			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)50mA$		150		MHz

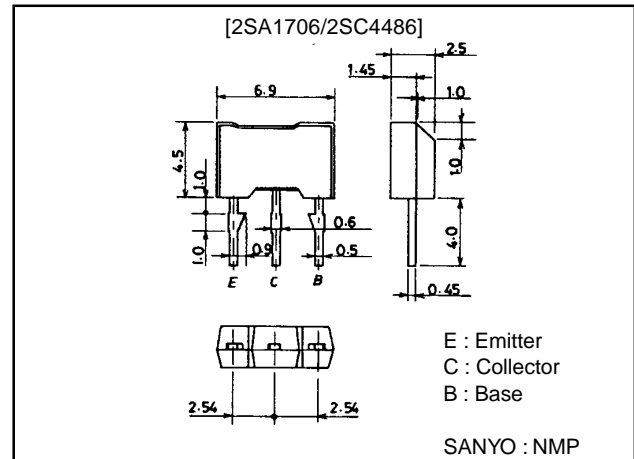
* : The 2SA1706/2SC4486 are classified by 100mA h_{FE} as follows :

100 R 200	140 S 280	200 T 400
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Package Dimensions

unit:mm

2064



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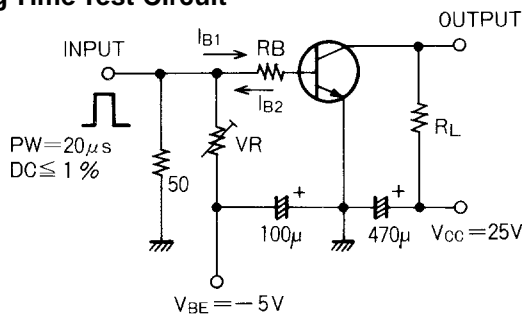
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

2SA1706/2SC4486

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-0.3)	(-0.7)	V
				0.15	0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-)0.9	(-)1.2	V
Output Capacitance	C_{ob}	$V_{CB}(-)10V, f=1MHz$		(22)12		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C(-)10\mu A, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E(-)10\mu A, I_C=0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit		60		ns
Storage Time	t_{stg}	See specified Test Circuit		(450)		ns
				550		ns
Fall Time	t_f	See specified Test Circuit		30		ns

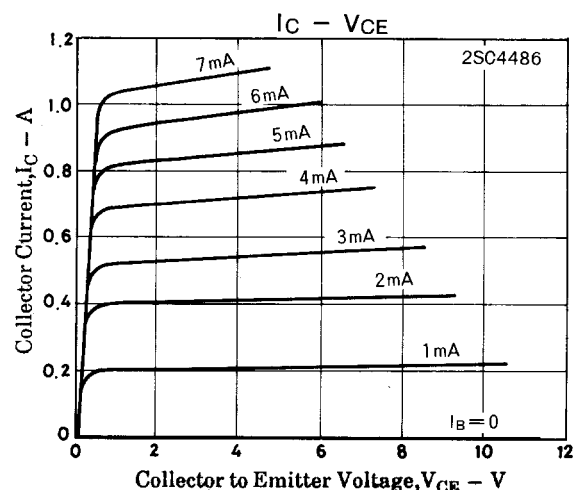
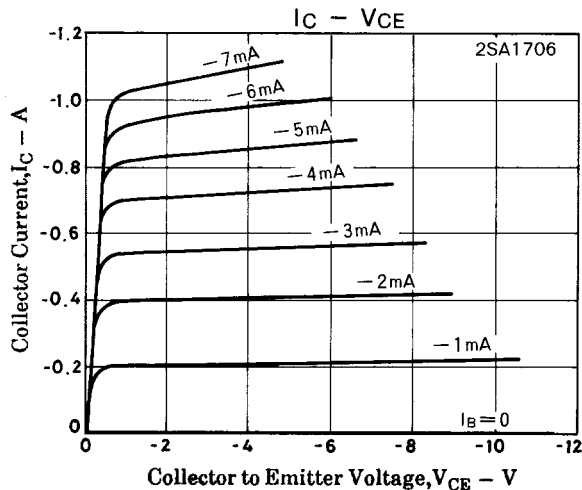
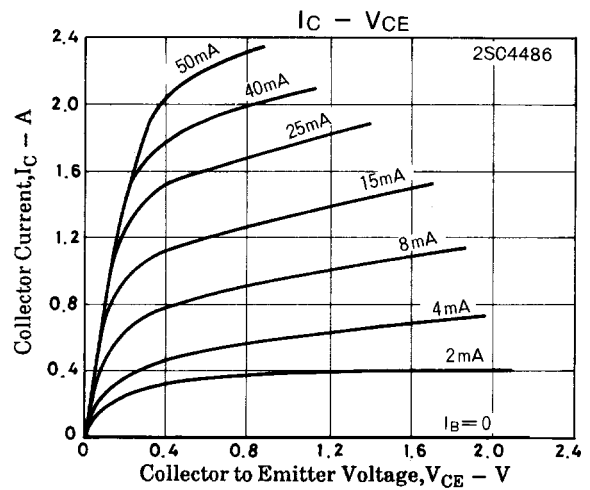
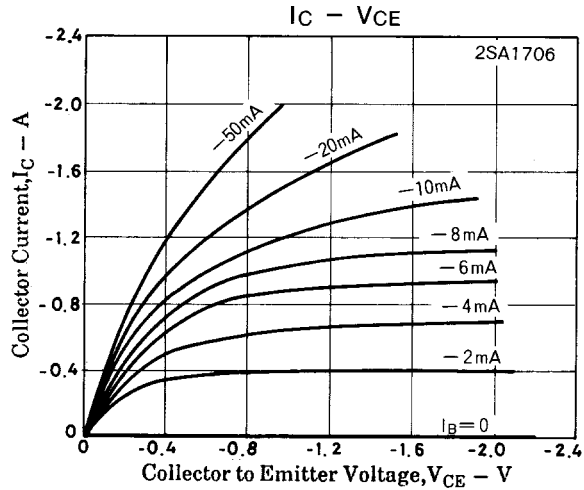
Switching Time Test Circuit



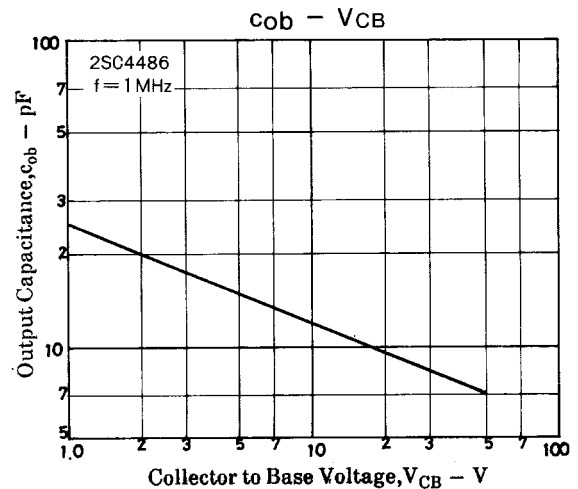
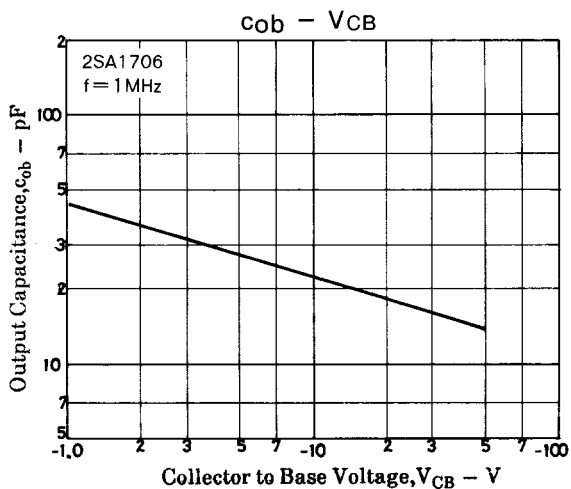
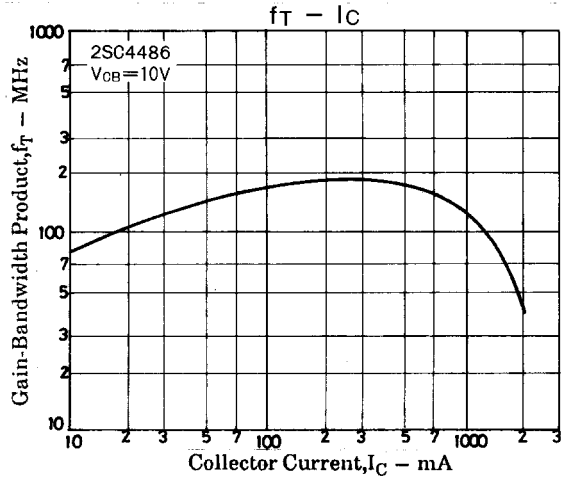
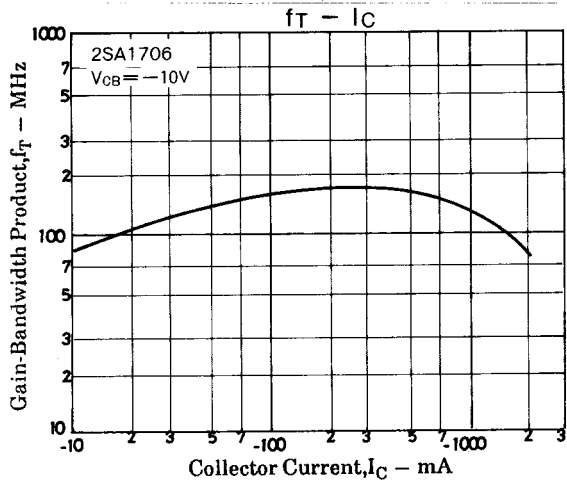
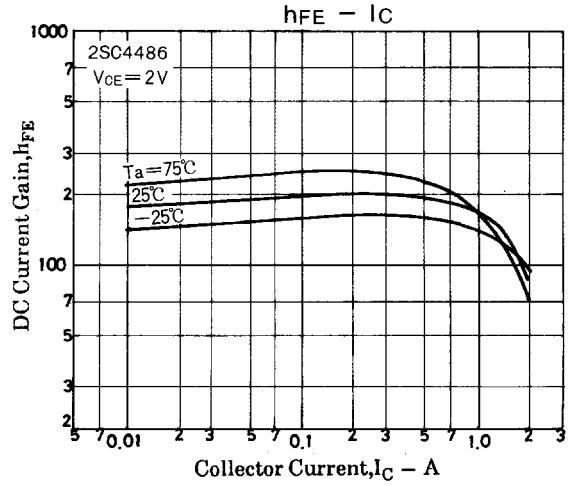
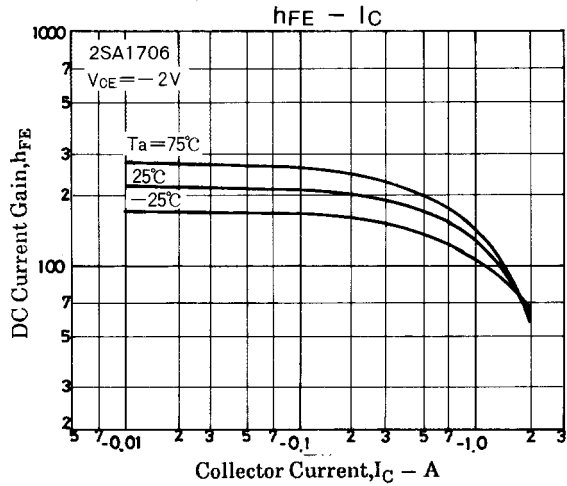
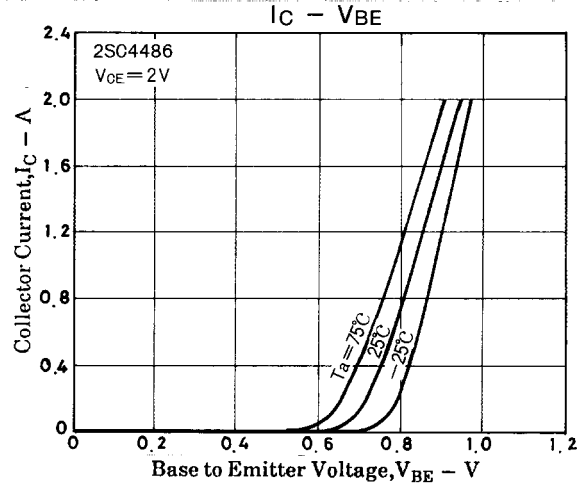
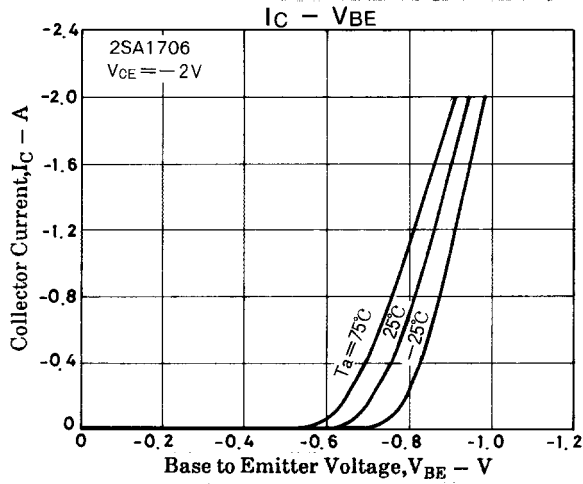
$$10I_{B1} = -10I_{B2} = I_C = 500mA$$

(For PNP, the polarity is reversed.)

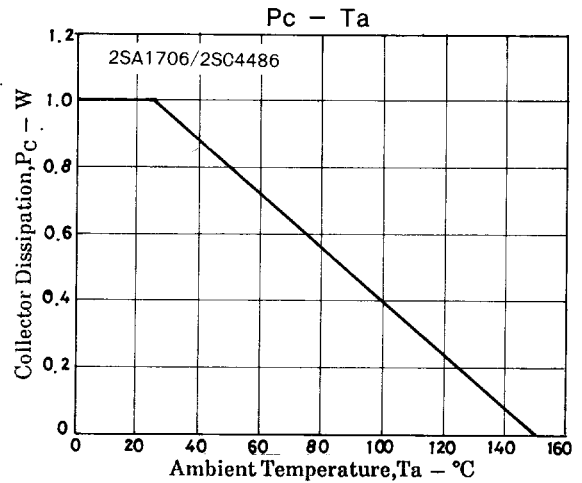
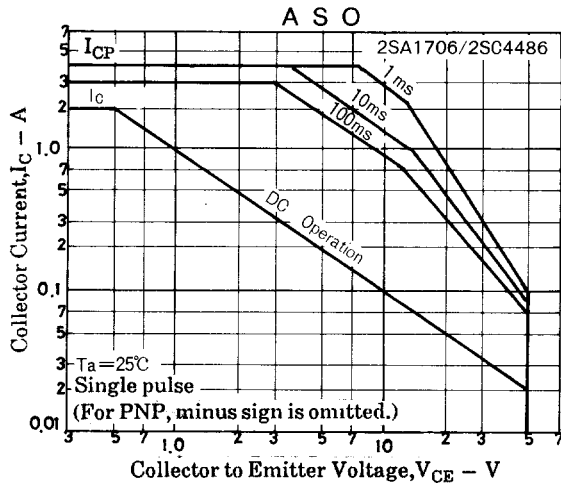
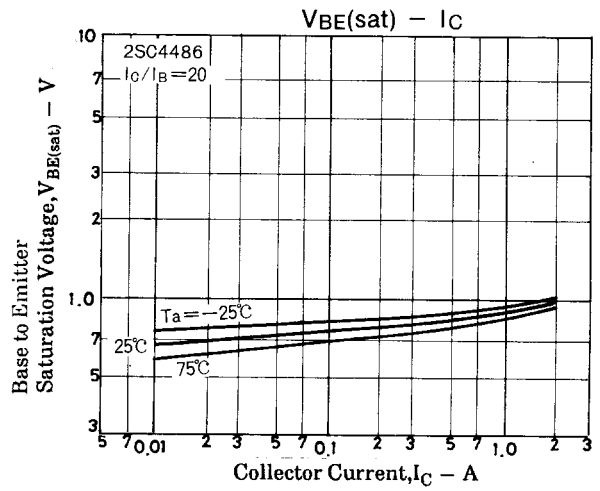
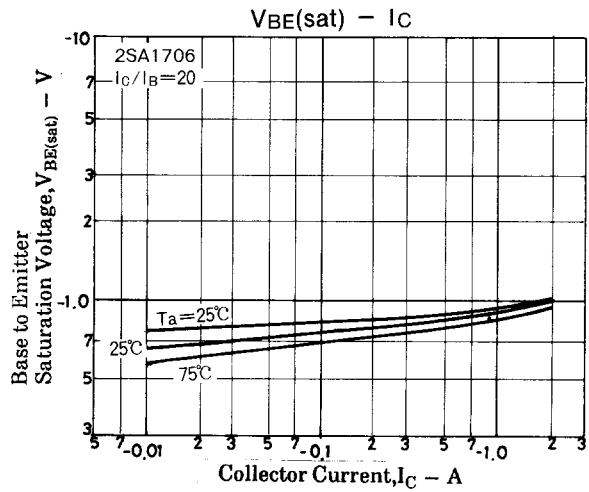
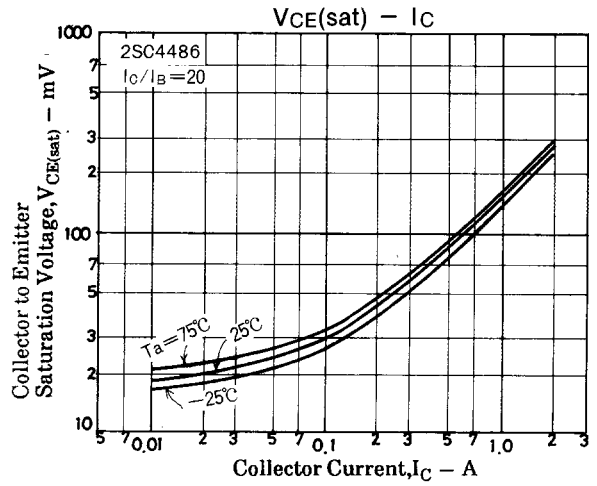
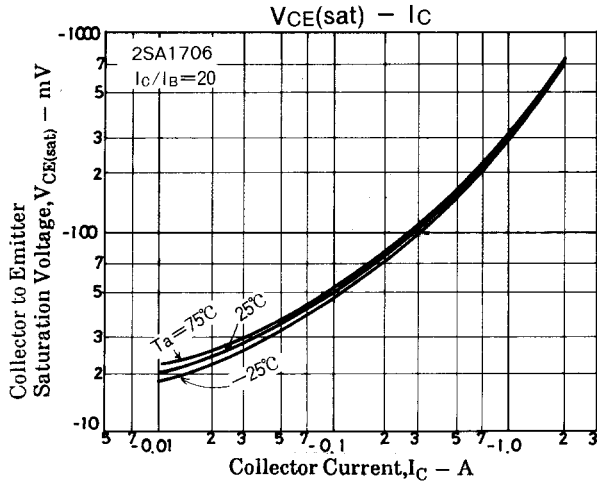
Unit (resistance : Ω , capacitance : F)



2SA1706/2SC4486



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