

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1706/2SC4486**SANYO****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 _{CBO}		(-)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_{FE} 1	V _{CE} =(-)2V, I _C =(-)100mA	100*		400*	
	h_{FE} 2	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 :

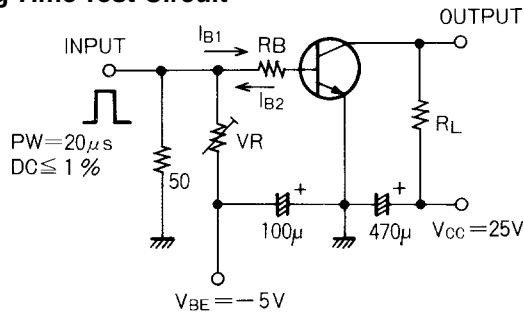
100 R 200 | 140 S 280 | 200 T 400

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

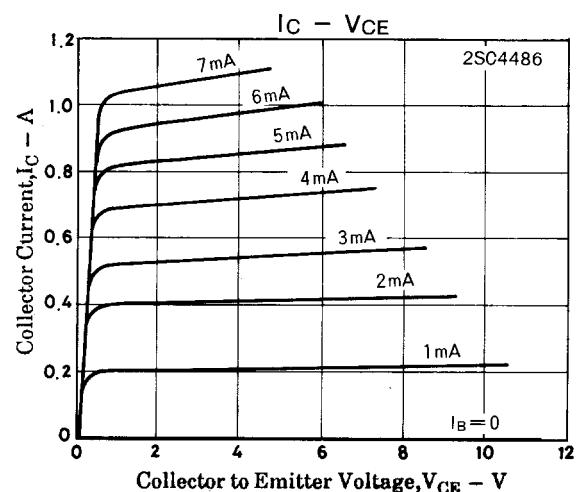
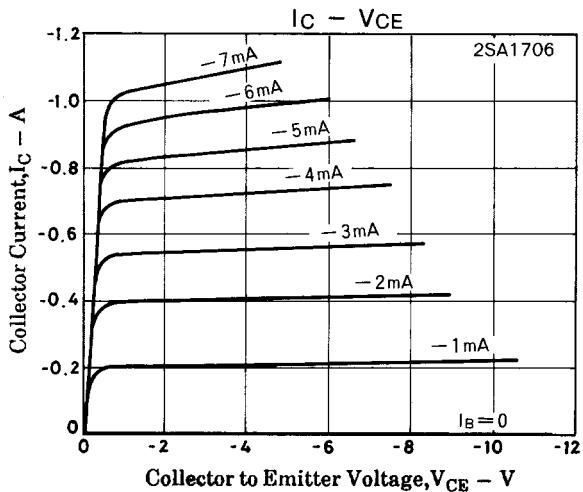
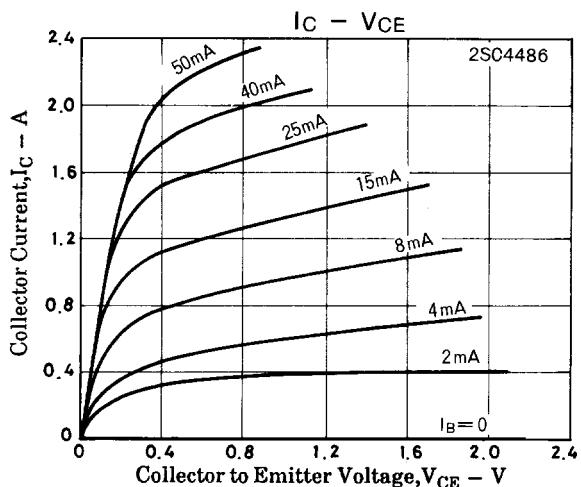
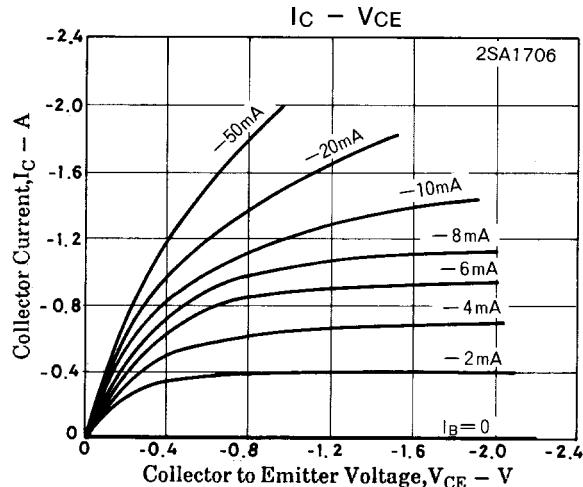
Switching Time Test Circuit



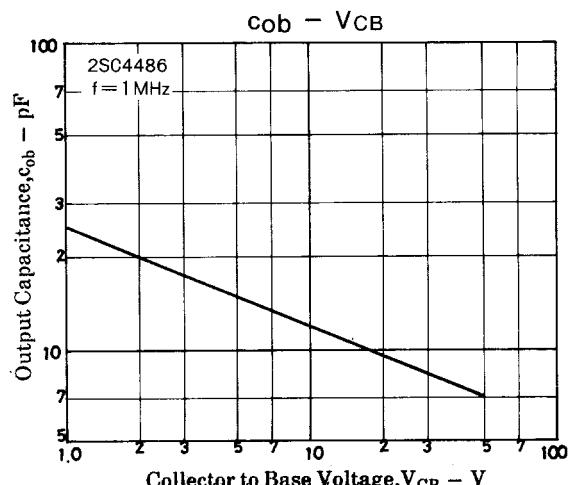
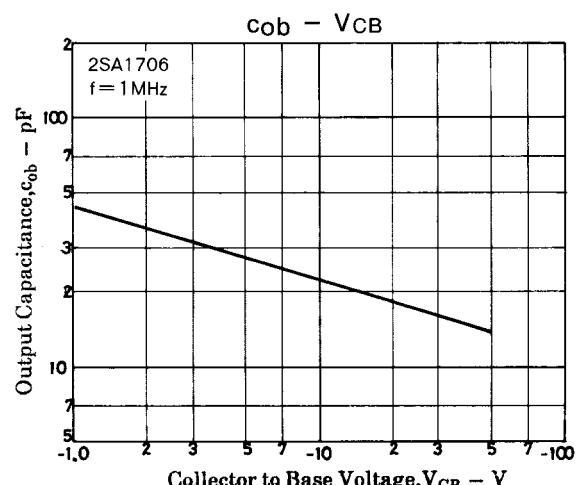
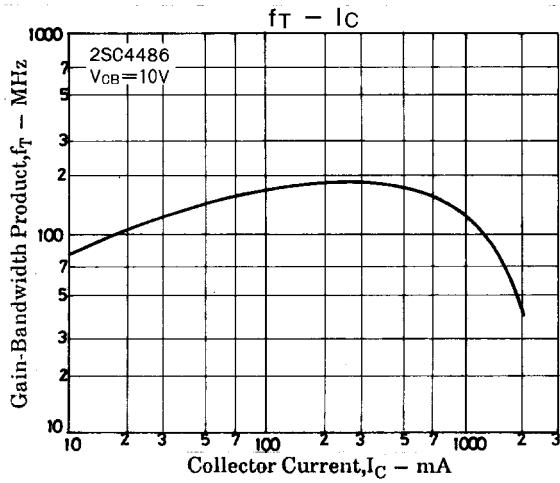
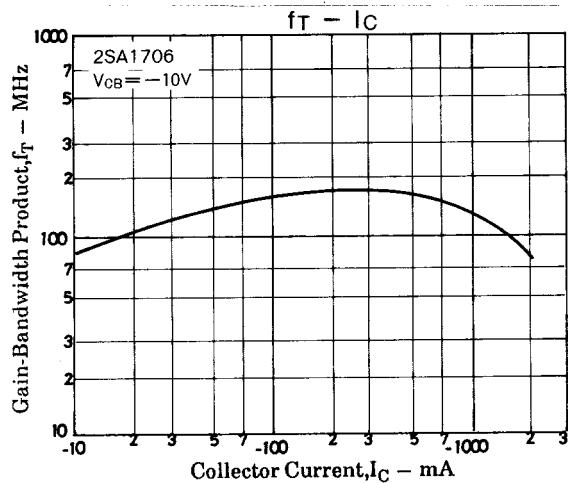
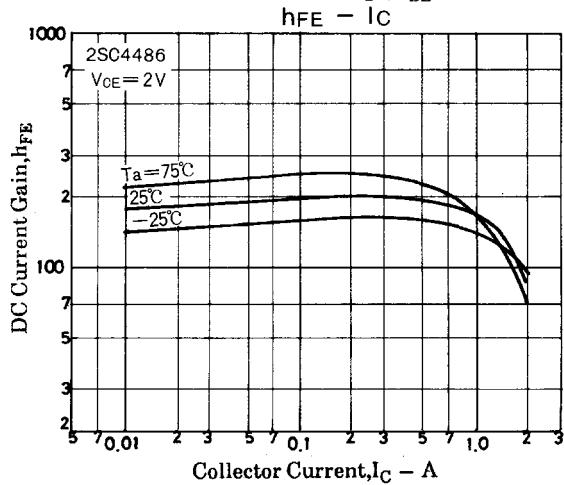
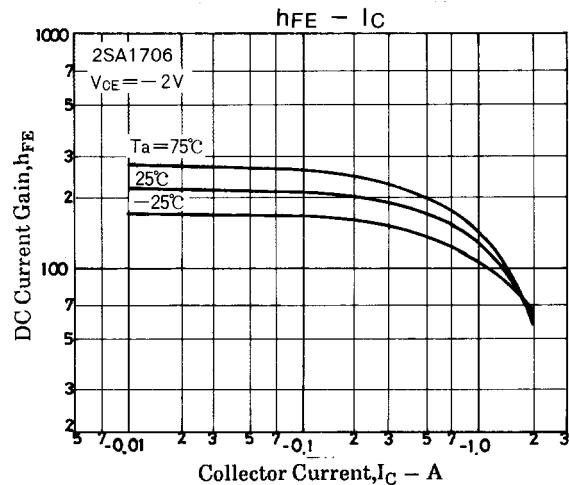
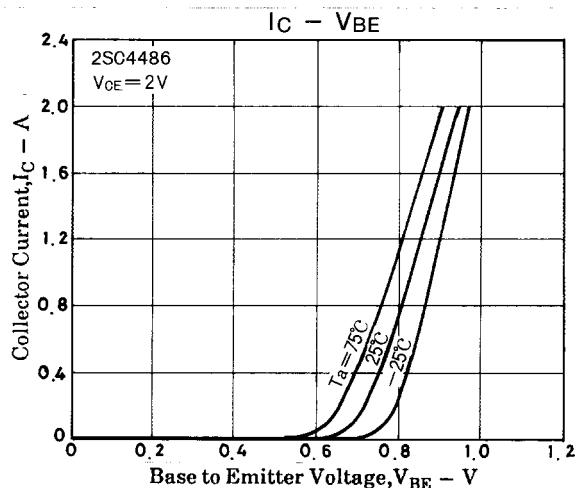
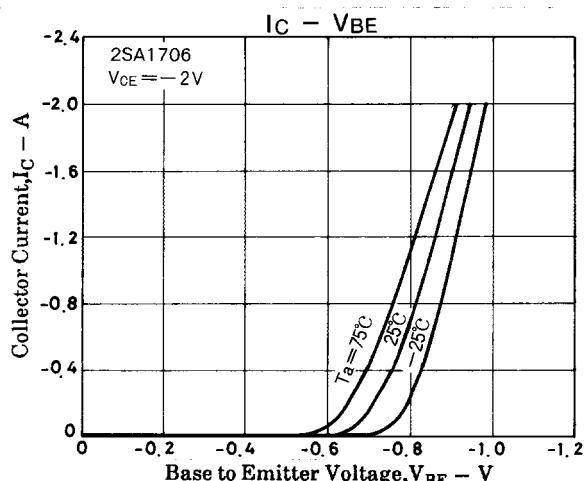
$$10I_{B1} = -10I_{B2} = I_C = 500mA$$

(For PNP, the polarity is reversed.)

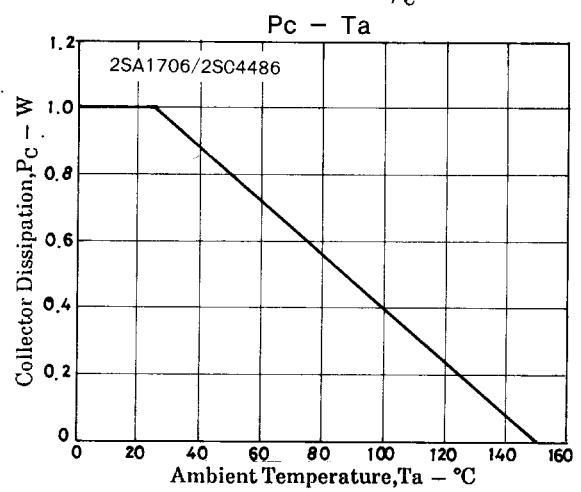
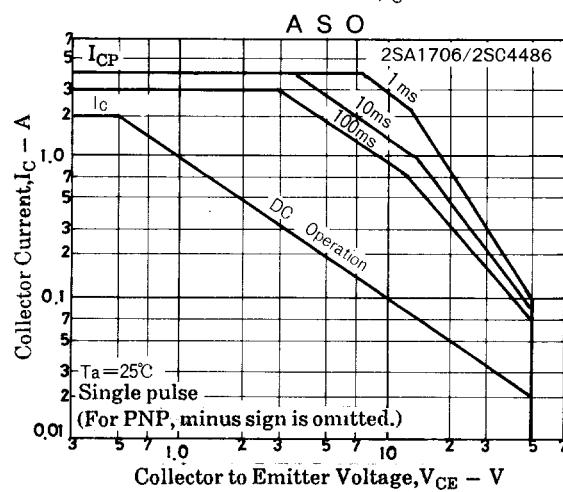
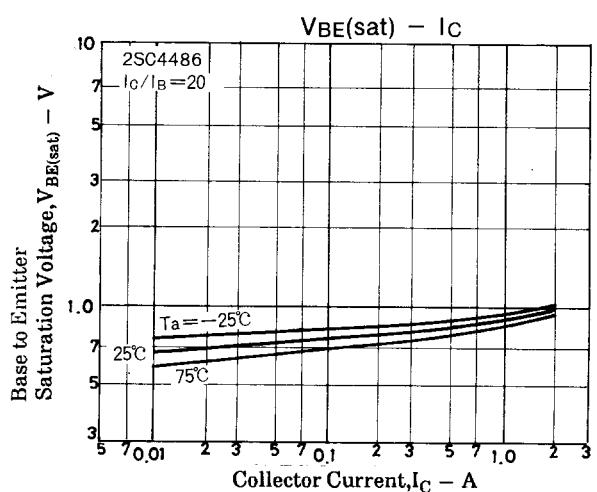
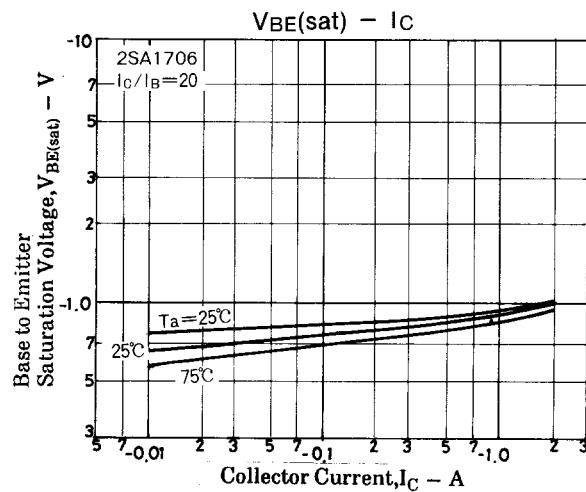
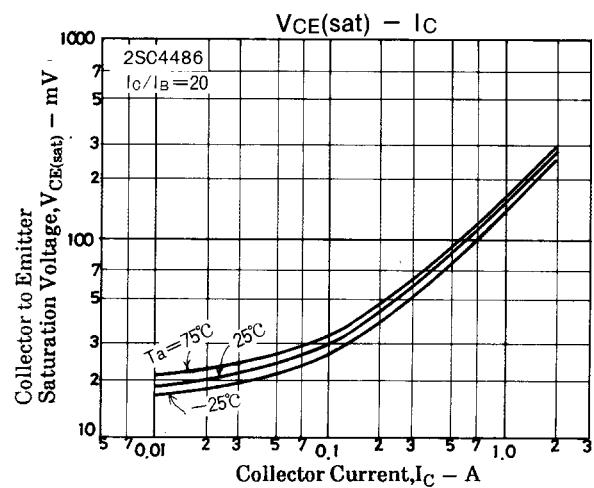
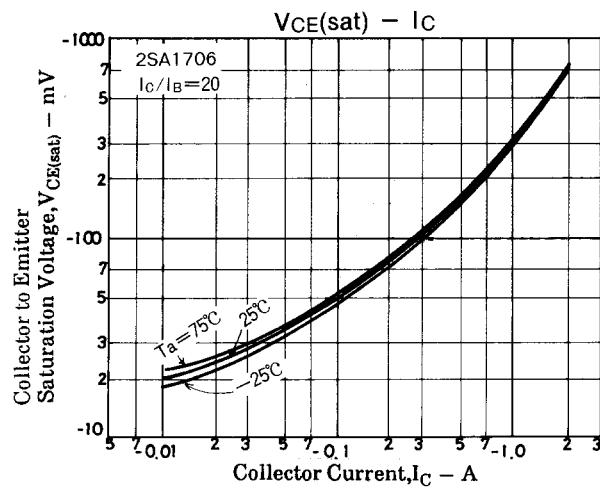
Unit (resistance : Ω, capacitance : F)



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