



2SA1705/2SC4485

Low-Frequency Power Amplifier Applications

Applications

- Voltage regulators, relay drivers, lamp drivers.

Features

- Adoption of FBET process.
- Fast switching speed.

() : 2SA1705

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}		(-)5	V
Collector Current	I_C		(-)1	A
Collector Current (Pulse)	I_{CP}		(-)2	A
Collector Dissipation	P_C		0.9	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

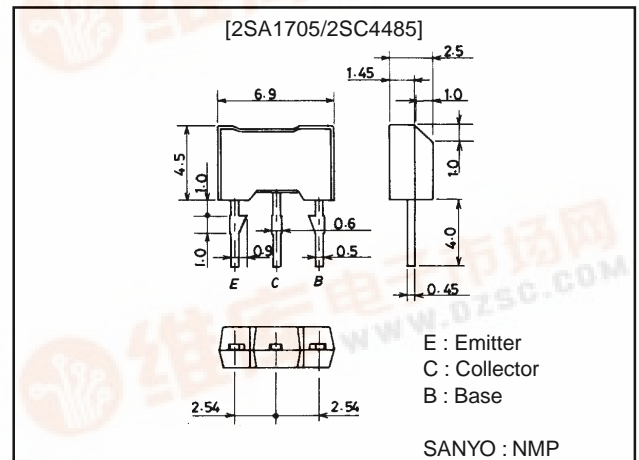
Electrical Characteristics at Ta = 25°C

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}	$V_{CE} = (-)2V, I_C = (-)1A$	30			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)50mA$		150		MHz

Package Dimensions

unit:mm

2064



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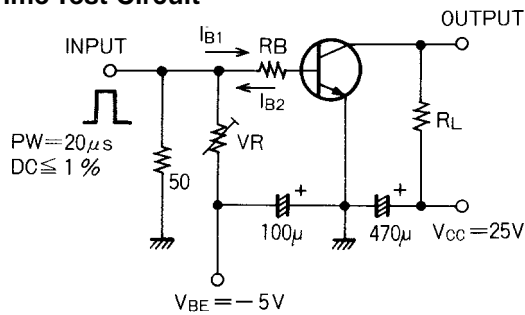
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500\text{mA}, I_B=(-)50\text{mA}$		(-180)	(-500)	mV
				120	300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500\text{mA}, I_B=(-)50\text{mA}$		(-0.9)	(-1.2)	V
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(12)8.5		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-60)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-50)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}, I_C=0$	(-5)			V
Turn-ON Time	t_{ON}	See specified Test Circuit		40		V
Storage Time	t_{stg}	See specified Test Circuit		(300)		ns
				350		ns
Fall Time	t_f	See specified Test Circuit		30		ns

* : The 2SA1705/2SC4485 are classified by 100mA h_{FE} as follows :

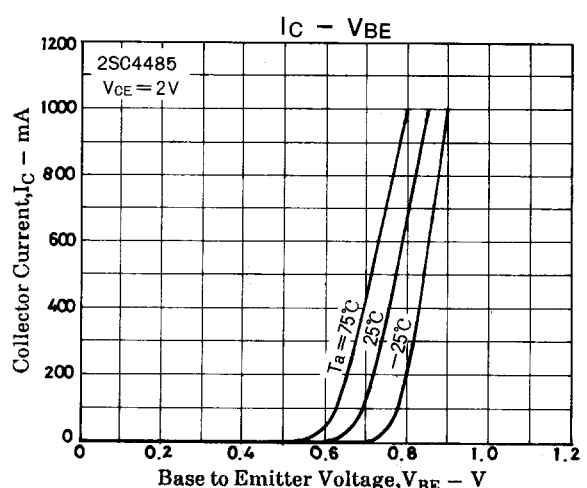
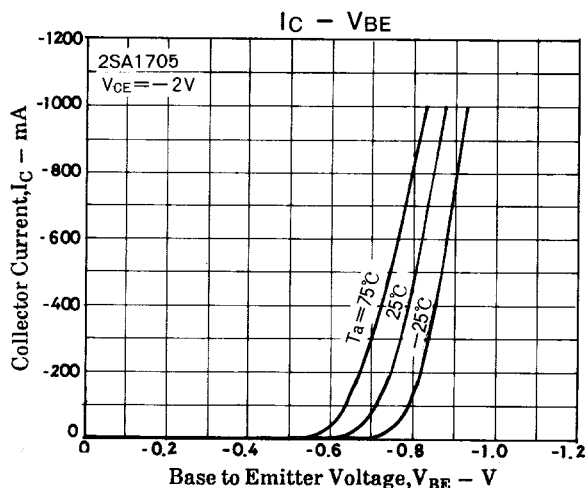
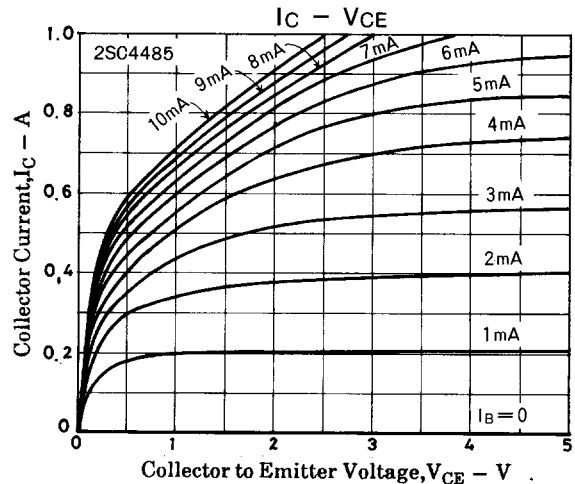
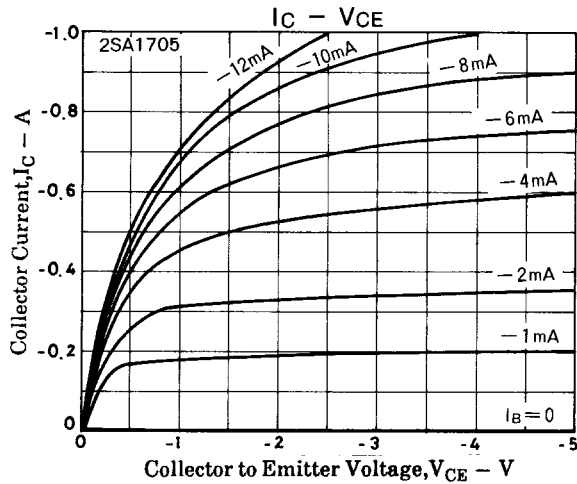
100	R	200	140	S	280	200	T	400
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Switching Time Test Circuit

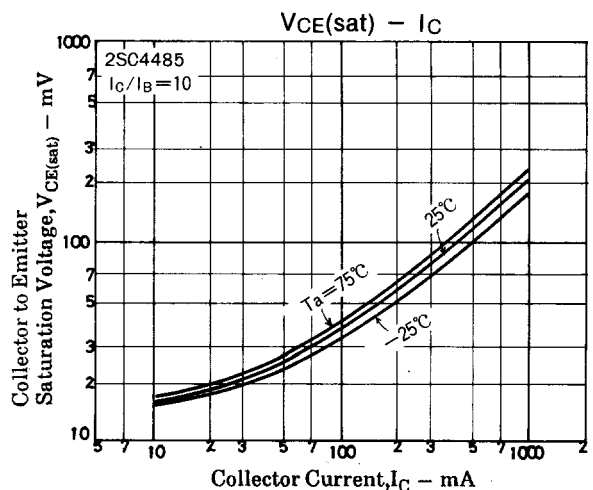
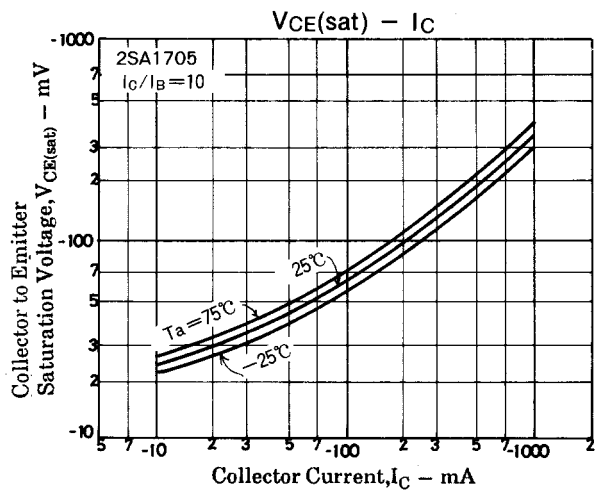
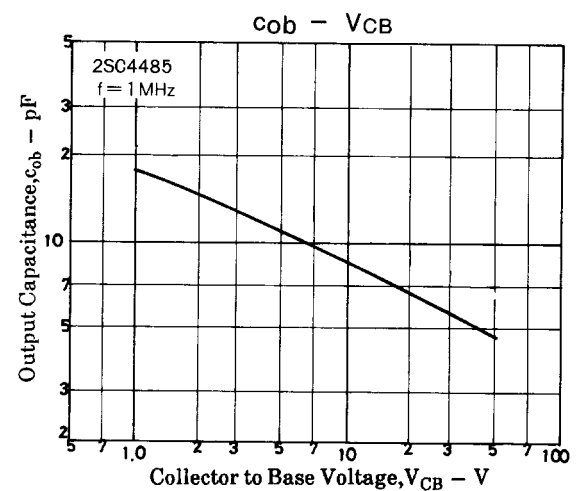
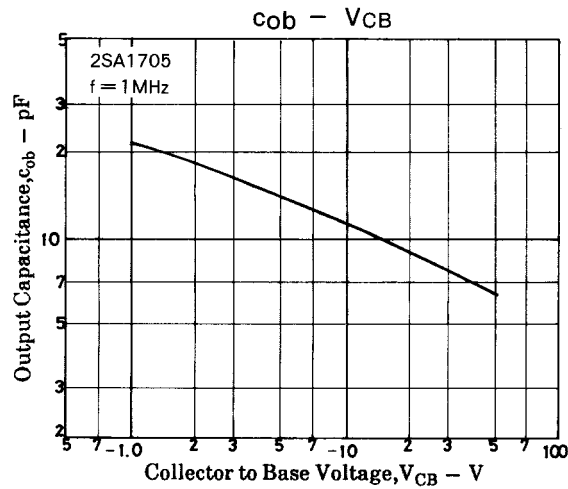
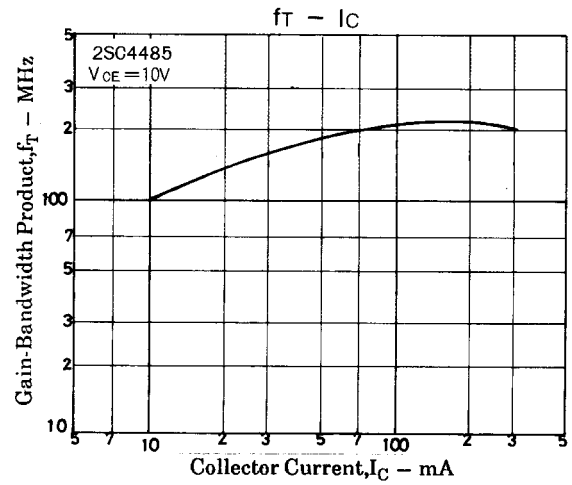
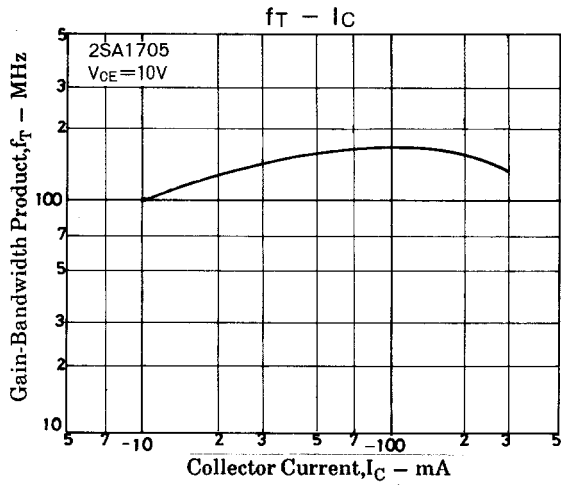
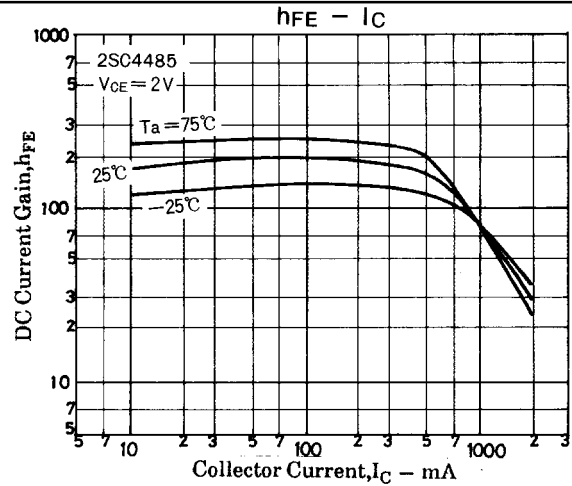
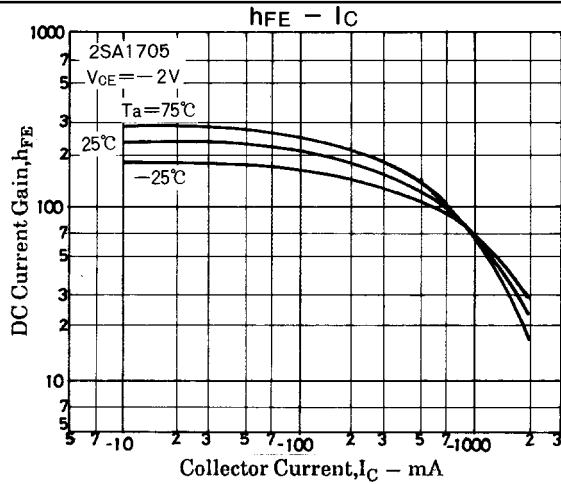


$$10I_{B1} = -10I_{B2} = I_C = 500\text{mA}$$

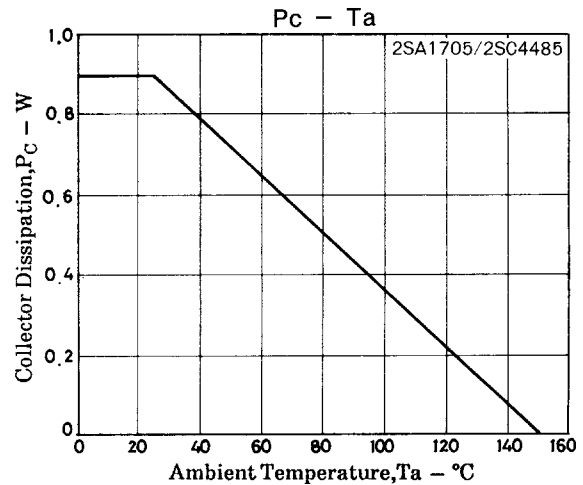
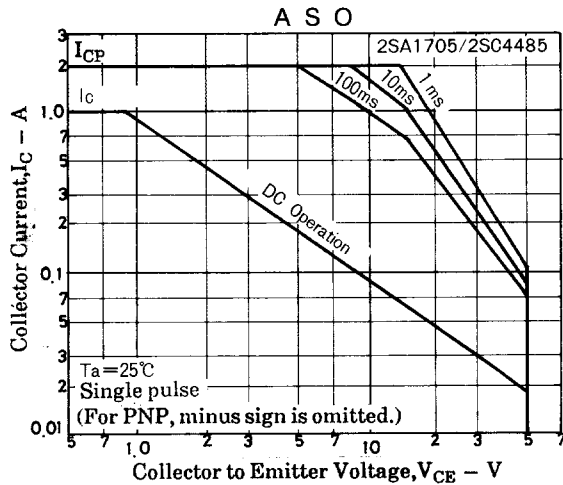
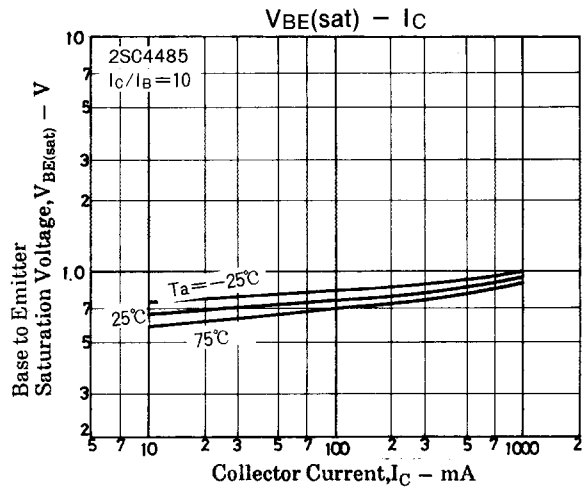
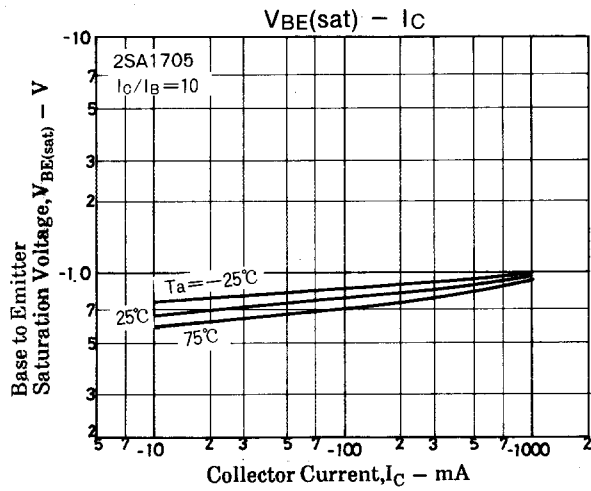
(For PNP, the polarity is reversed.)
Unit (resistance : Ω , capacitance : F)



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