



## 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  $T_a = 25^\circ\text{C}$

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	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$

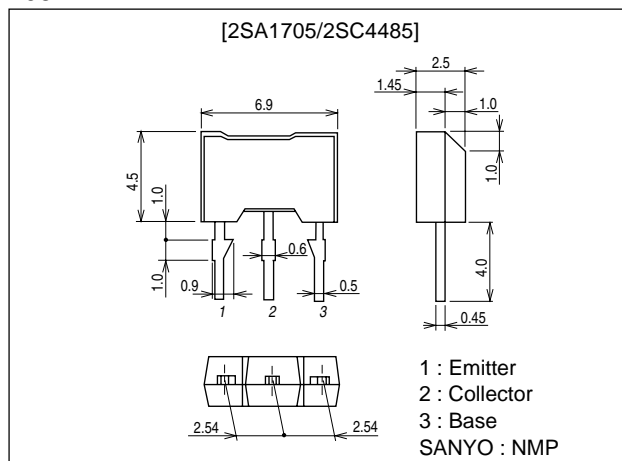
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)50\text{V}, I_E = 0$			(-)100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)100	nA
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)2\text{V}, I_C = (-)100\text{mA}$	100*		400*	
	$h_{FE2}$	$V_{CE} = (-)2\text{V}, I_C = (-)1\text{A}$	30			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$		150		MHz

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#### Package Dimensions

unit:mm

2064A



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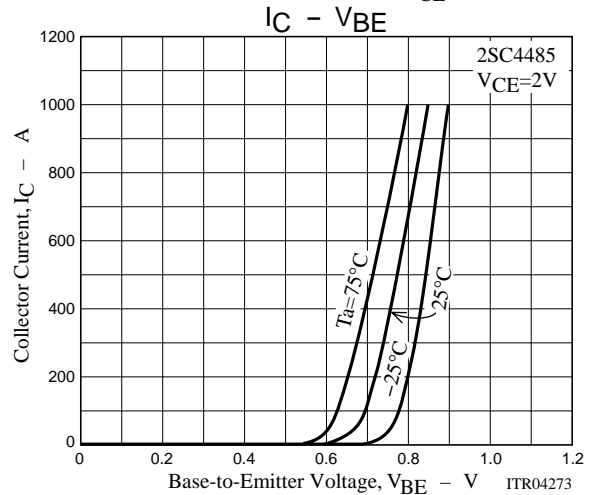
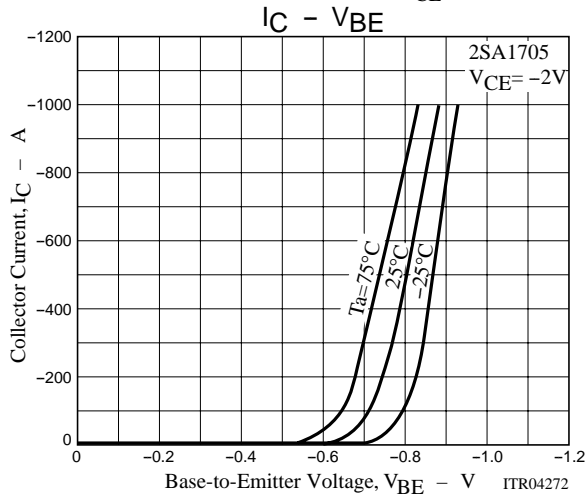
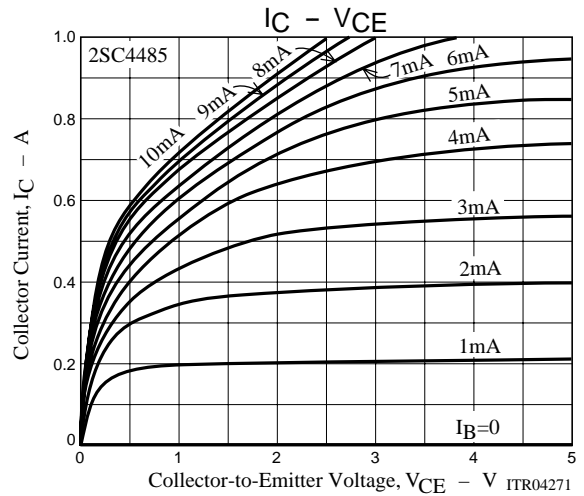
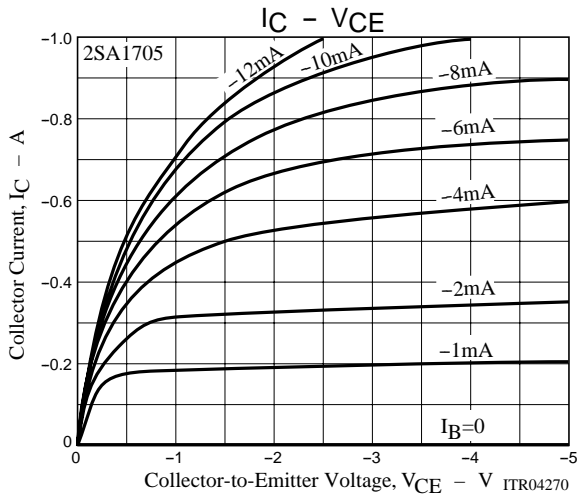
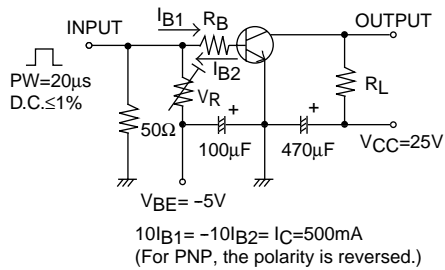
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-180)	(-500)	mV
				120	300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-)0.9	(-)1.2	V
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10V, f=1MHz$		(12)8.5		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	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$		(-)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

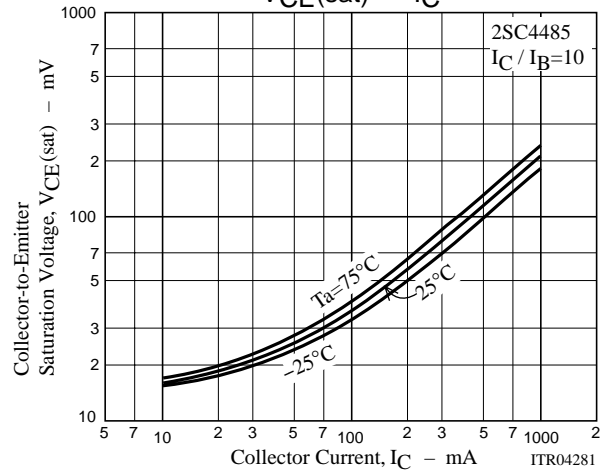
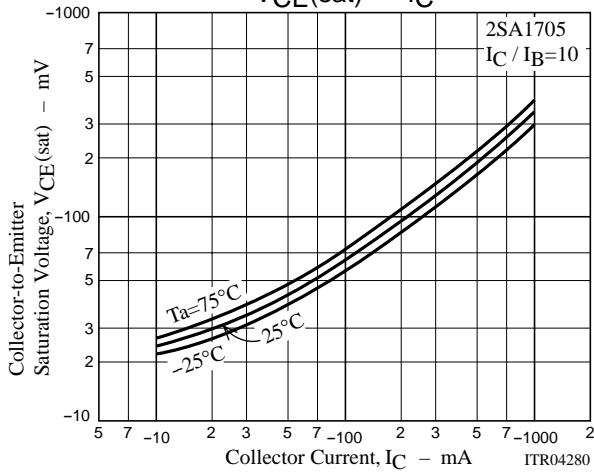
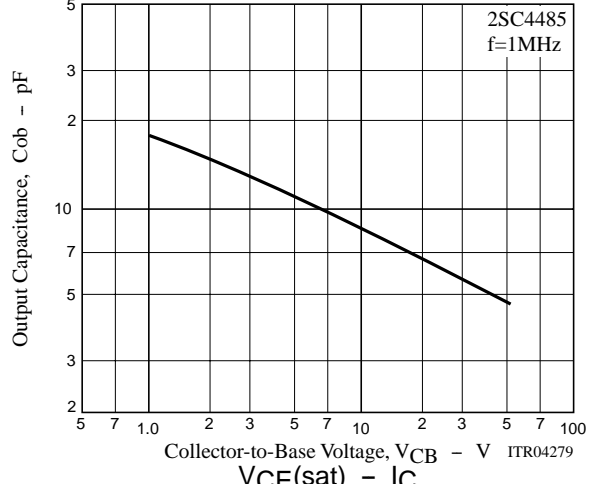
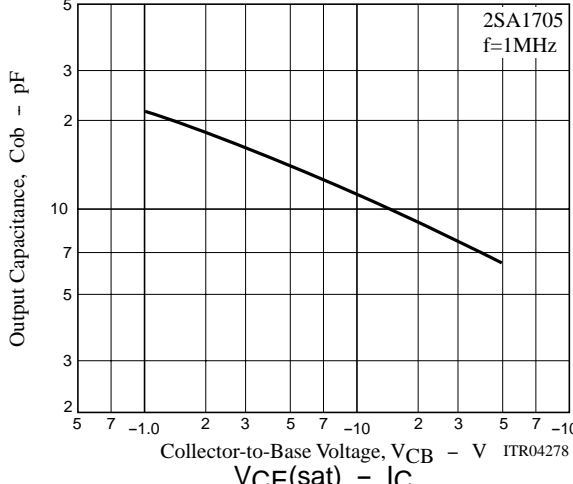
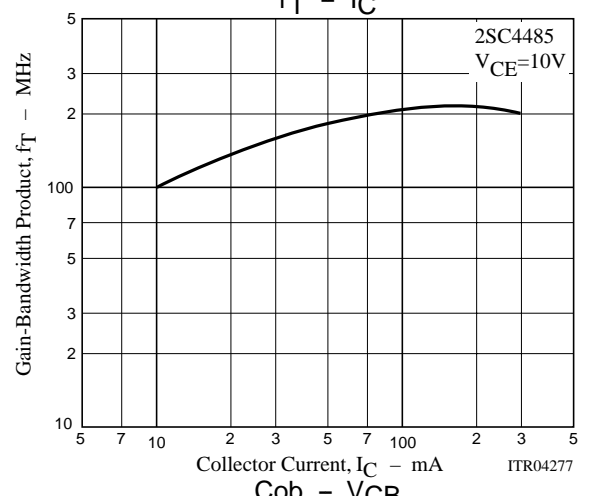
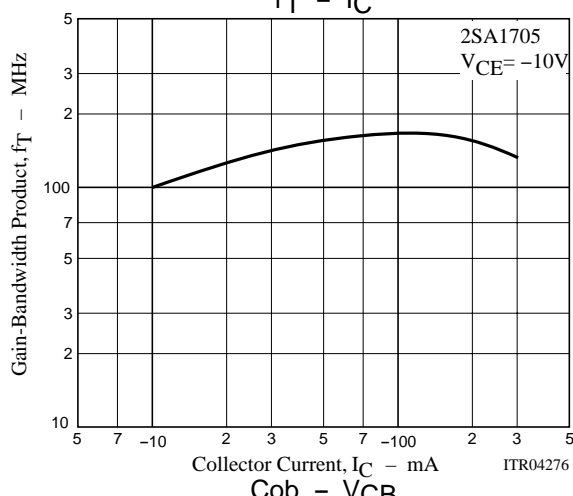
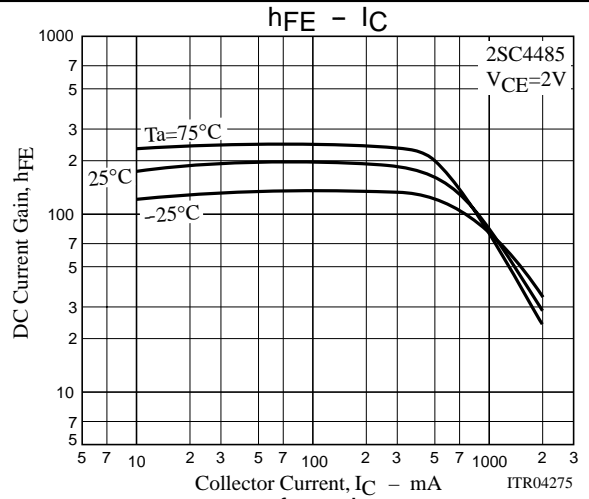
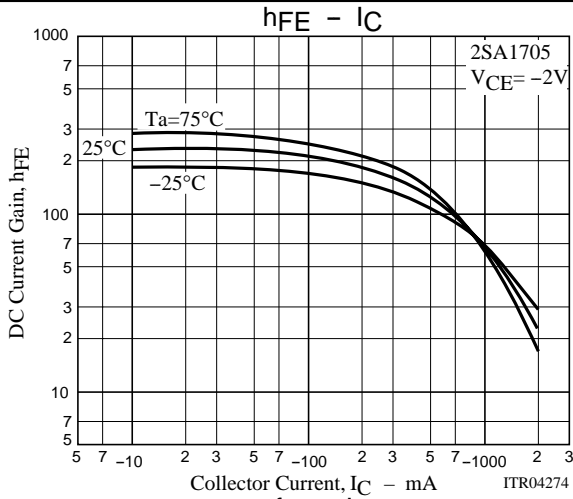
\* : The 2SA1705/2SC4485 are classified by 100mA  $h_{FE}$  as follows :

Rank	R	S	T
$h_{FE}$	100 to 200	140 to 280	200 to 400

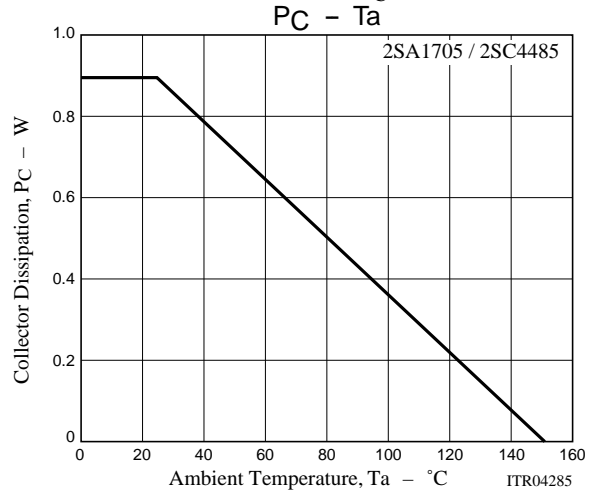
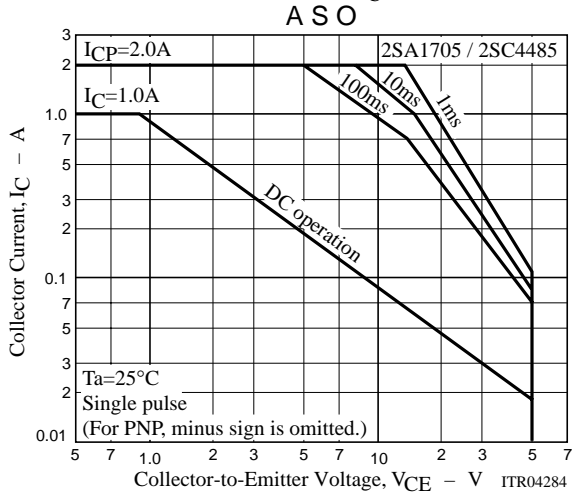
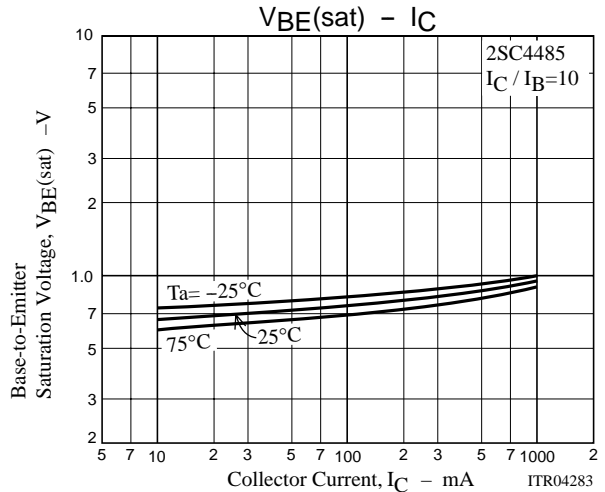
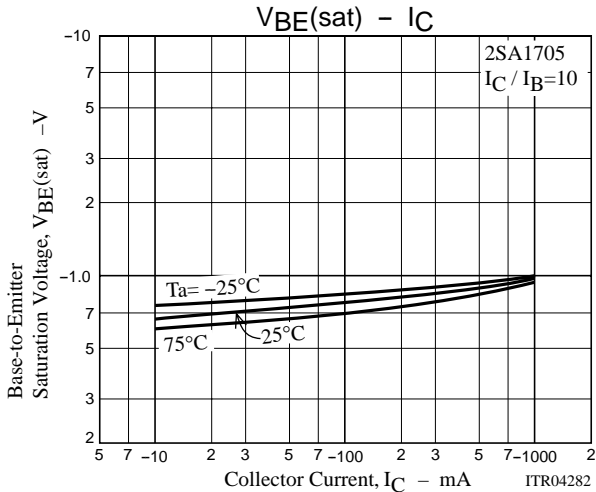
## Switching Time Test Circuit



# 2SA1705/2SC4485



# 2SA1705/2SC4485



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