Ordering number: EN 3025

SANYO

No.3025

2SA1705/2SC4485

PNP/NPN Epitaxial Planar Silicon Transistors

Low-Frequency Power Amp Applications

Applications

. Voltage regulators, relay drivers, lamp drivers.

Features

. Adoption of FBET process.
· Fast switching speed.

( ) : 2SA1705

Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V_{CBO}	(−)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	Tj	150	°C
Storage Temperature	Tstg	−55 to +150	°C

Electrical Characteristics at Ta = 25°C

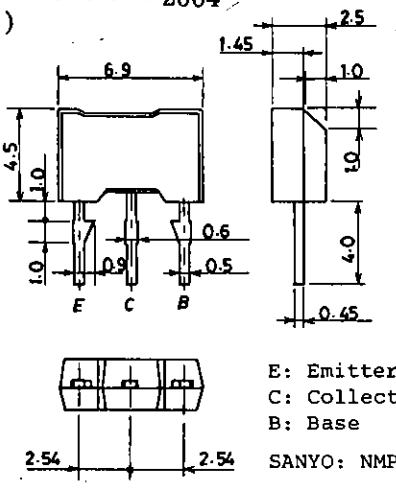
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(−)50V, I_E=0			(−)100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(−)4V, I_C=0			(−)100	nA
DC Current Gain	$h_{FE}(1)$	V_{CE}=(−)2V, I_C=(−)100mA	100※		400※	
	$h_{FE}(2)$	V_{CE}=(−)2V, I_C=(−)1A	30			
Gain-Bandwidth Product	f_T	V_{CE}=(−)10V, I_C=(−)50mA		150		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(−)500mA, I_B=(−)50mA	(−180)120		(−500)300	mV
B-E 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

Continued on next page.

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

100 R 200	140 S 280	200 T 400

Package Dimensions 2064
(unit: mm)



E: Emitter
C: Collector
B: Base
SANYO: NMP

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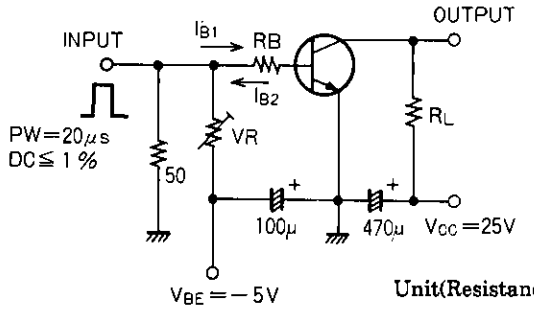
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

Continued from preceding page.

			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(−)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(−)50			V
E-B 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		ns
Storage Time	t_{stg}	〃		(300)350		ns
Fall Time	t_f	〃		30		ns

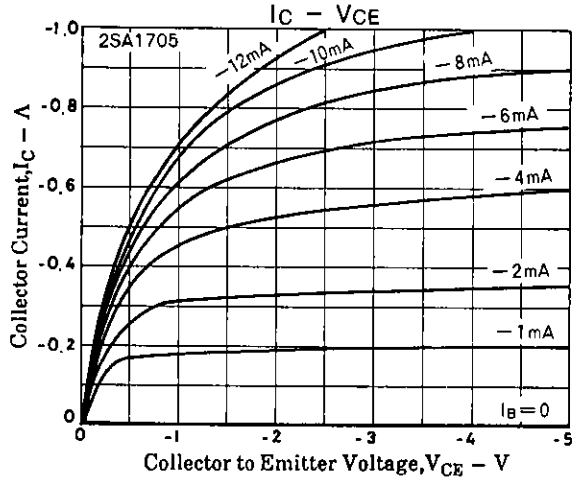
Switching Time Test Circuit

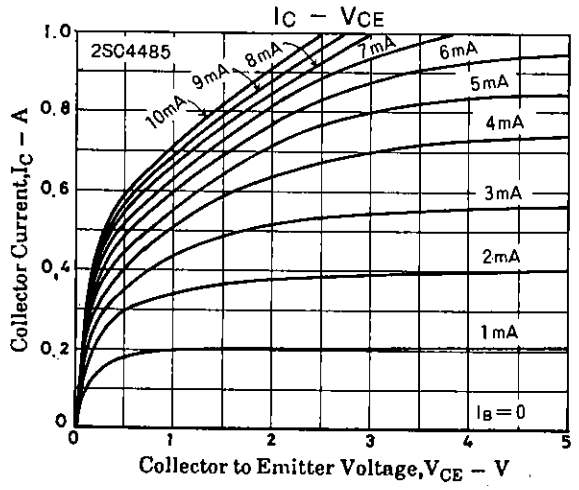


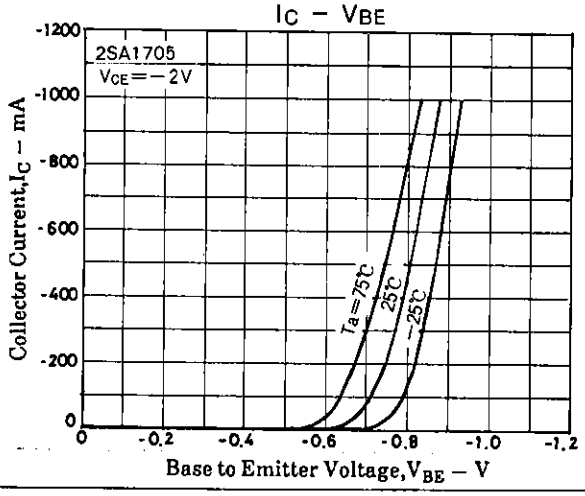
Unit(Resistance : Ω , Capacitance : F)

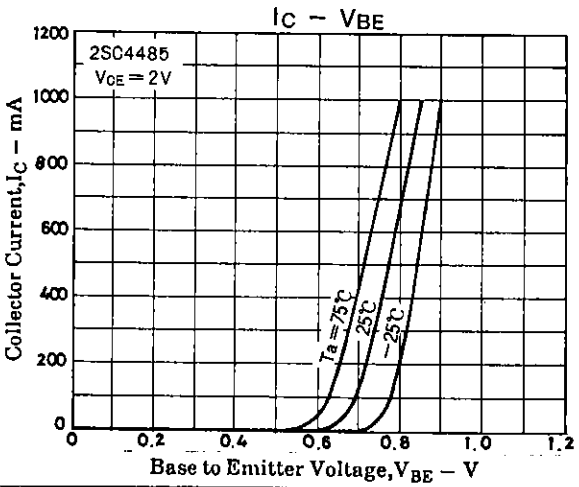
$10I_{B1}=-10I_{B2}=I_C=500mA$

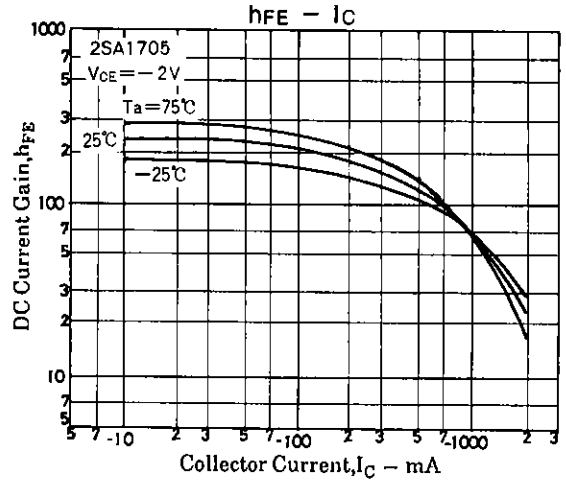
(For PNP, the polarity is reversed.)

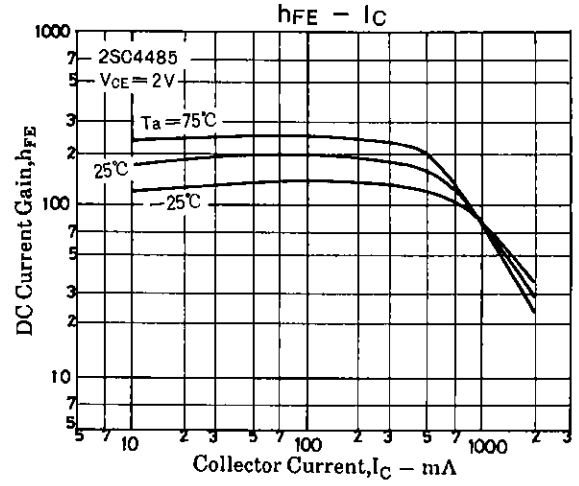


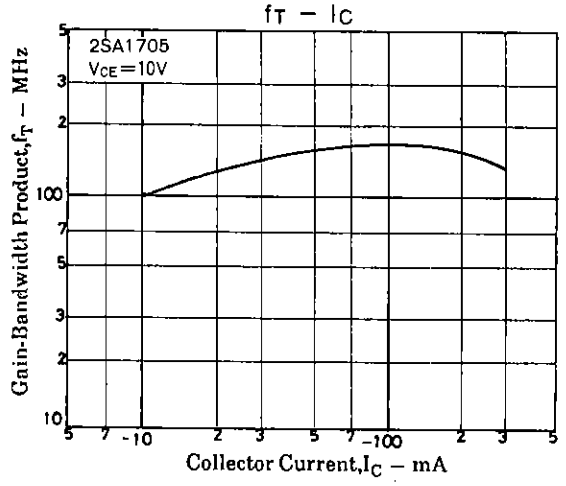


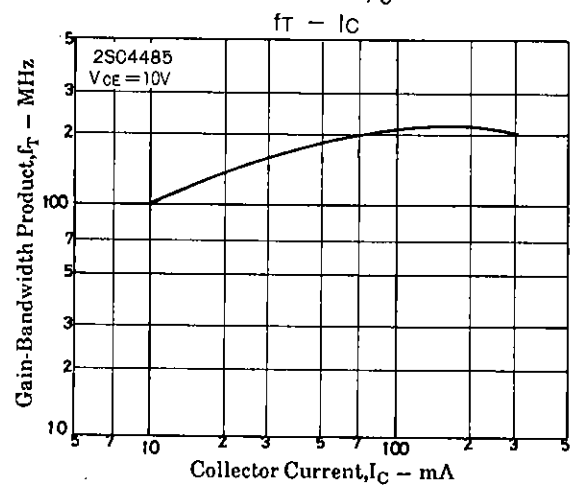


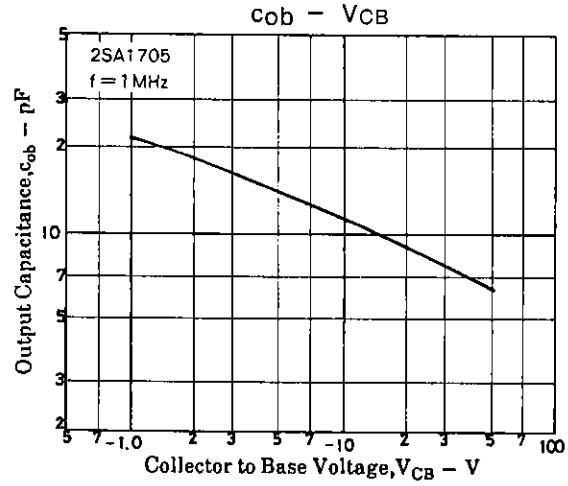


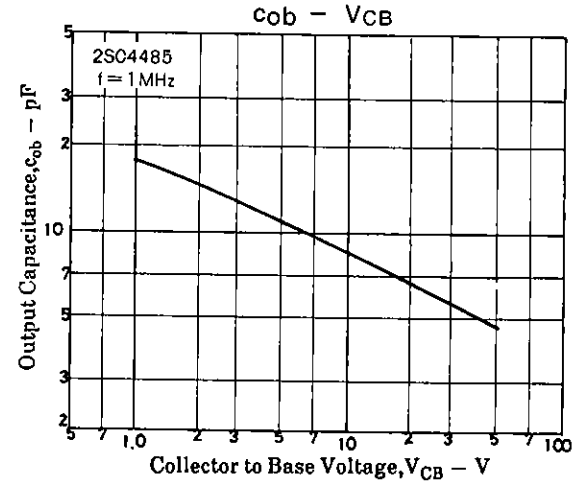

hFE – IC
2SA1705
VCE=–2V
Ta=75℃
25℃
–25℃
DC Current Gain,hFE
Collector Current,IC – mA

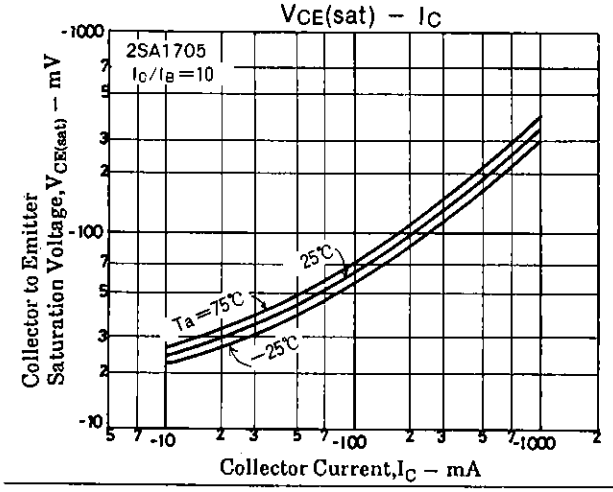

hFE – IC
2SC4485
VCE=2V
Ta=75℃
25℃
–25℃
DC Current Gain,hFE
Collector Current,IC – mA

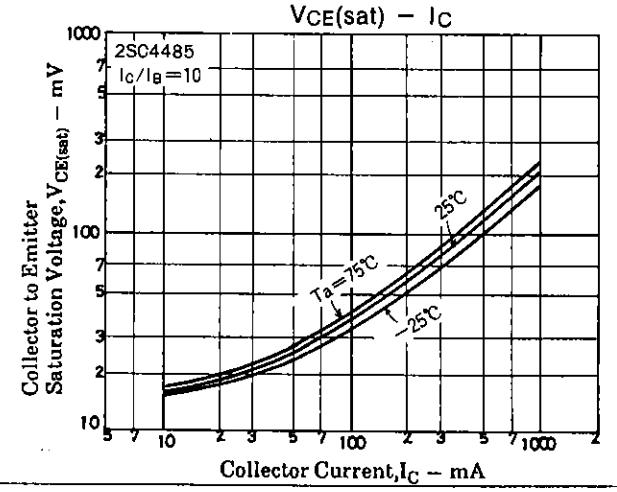

fT – IC
2SA1705
VCE=10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA


fT – IC
2SC4485
VCE=10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA


Cob – VCB
2SA1705
f=1MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V


Cob – VCB
2SC4485
f=1MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V


VCE(sat) – IC
2SA1705
IC/IB=10
Ta=75℃
25℃
–25℃
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – mA


VCE(sat) – IC
2SC4485
IC/IB=10
Ta=75℃
25℃
–25℃
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – mA