Ordering number:EN3022

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1701/2SC4481

Low-Frequency General-Purpose Amplifier Applications

Applications

· AF power amplifier, medium-speed switching, small-sized motor driver applications.

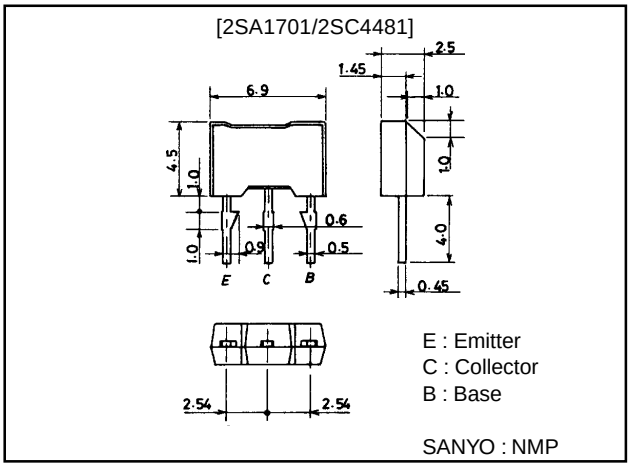
Features

· Large current capacity.
· Low collector-to-emitter saturation voltage.

Package Dimensions

unit:mm

2064



( ) : 2SA1701

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)15	V
Collector-to-Emitter Voltage	V_{CEO}		(–)15	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)1.5	A
Collector Current (Pulse)	I_{CP}		(–)3	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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)12V, 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=(–)50mA	140*		560*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)1A	70			
Gain-Bandwidth Product	f_T	V_{CE}=(–)2V, I_C=(–)50mA		(300)		MHz
				200		MHz

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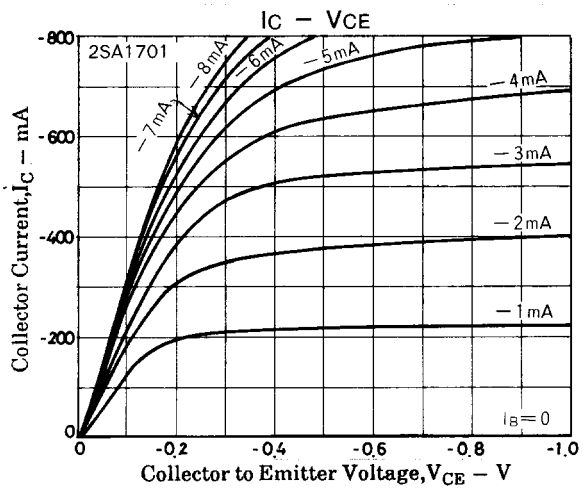
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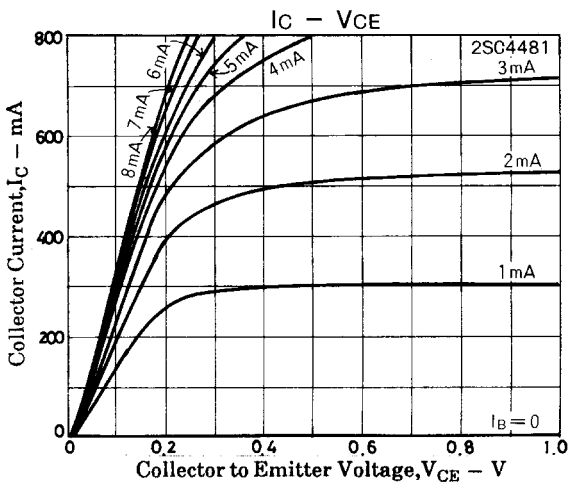
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

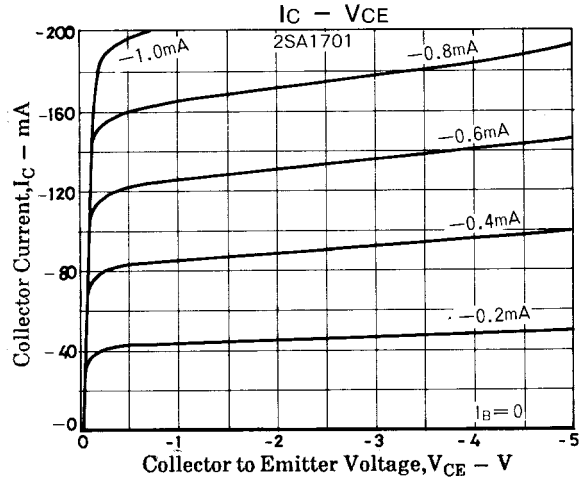
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}1$	I_C=(–)5mA, I_B=(–)0.5mA		(–10)	(–)25	mV
	$V_{CE(sat)}2$	I_C=(–)400mA, I_B=(–)20mA		(–)100	(–)200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)400mA, I_B=(–)20mA		(–)0.9	(–)1.2	V
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(15)10		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)15			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V

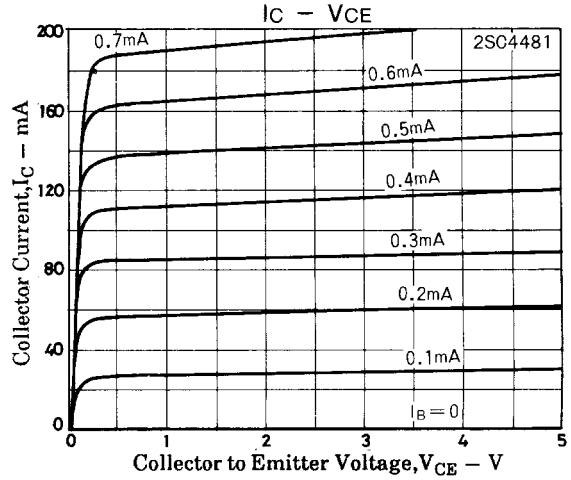
* : 2SA1701/2SC4481 are classified by 50mA h_{FE} as follows :

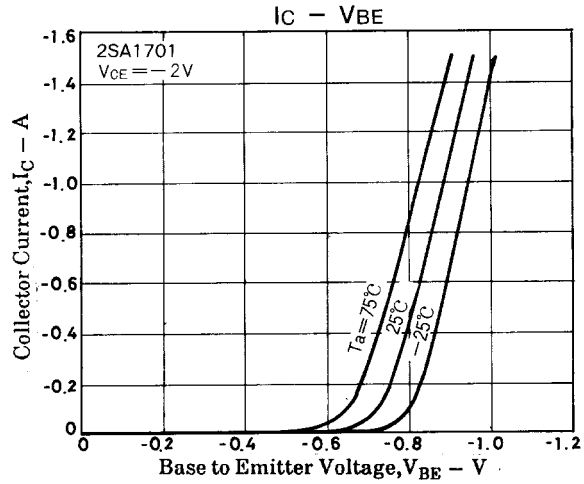
140 S 280	200 T 400	280 U 560

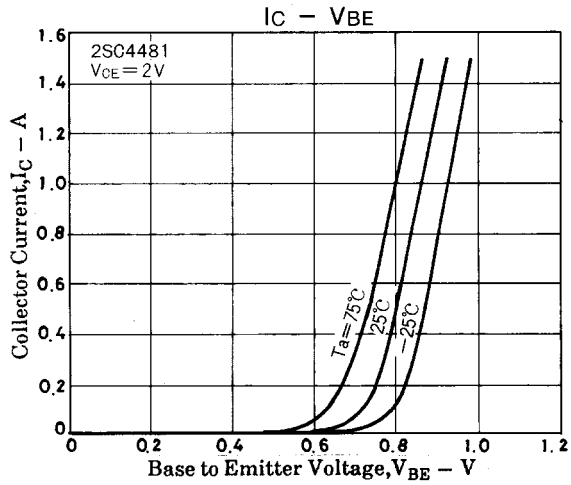


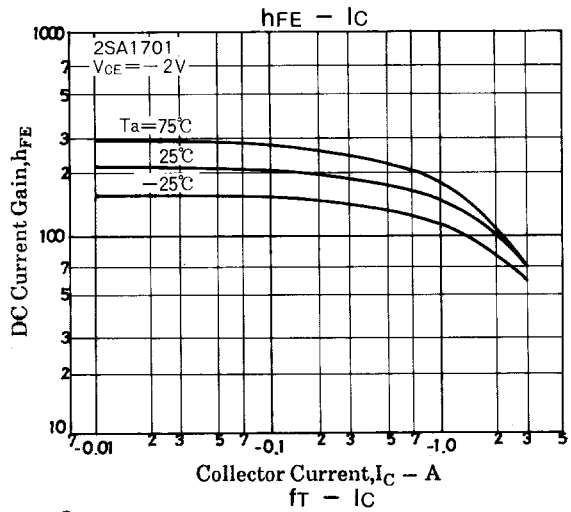


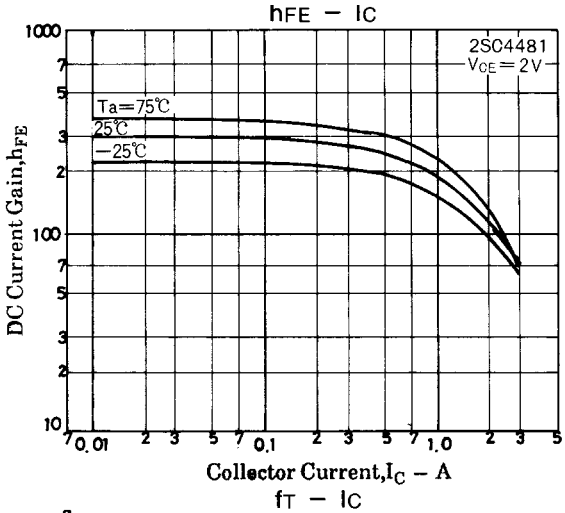


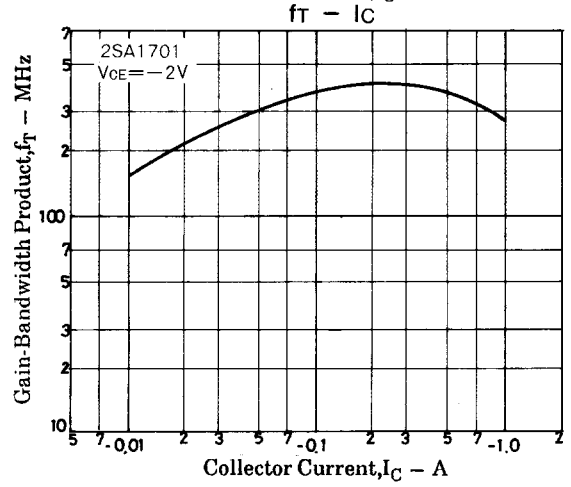


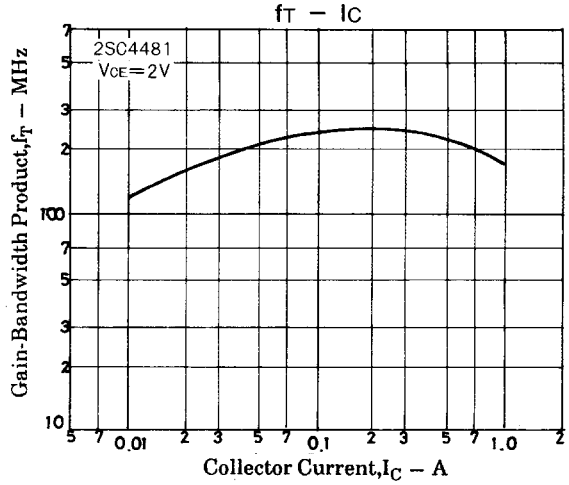


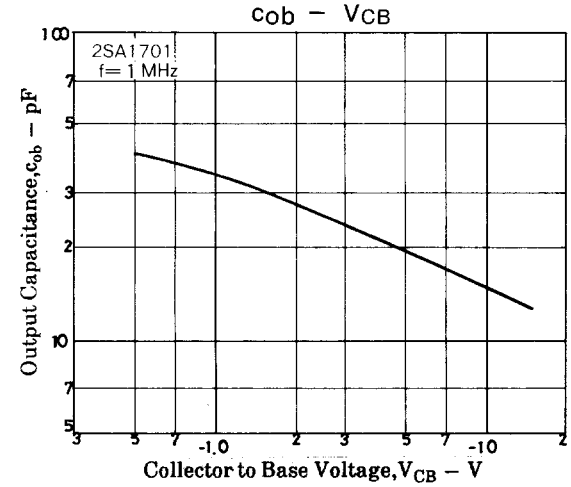


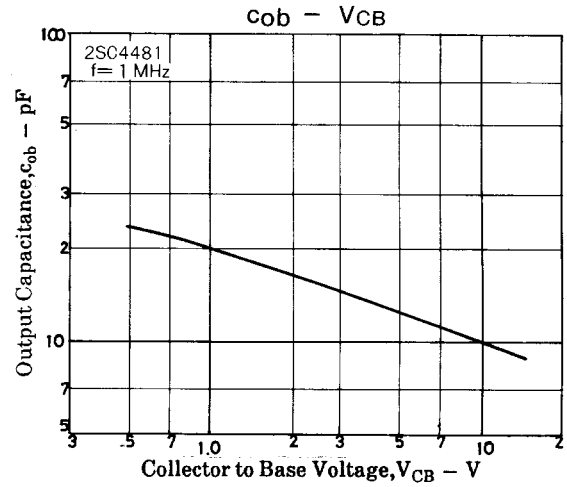

hFE – IC
2SA1701
VCE=–2V
Ta=75℃
25℃
–25℃
DC Current Gain,hFE
Collector Current,IC – A

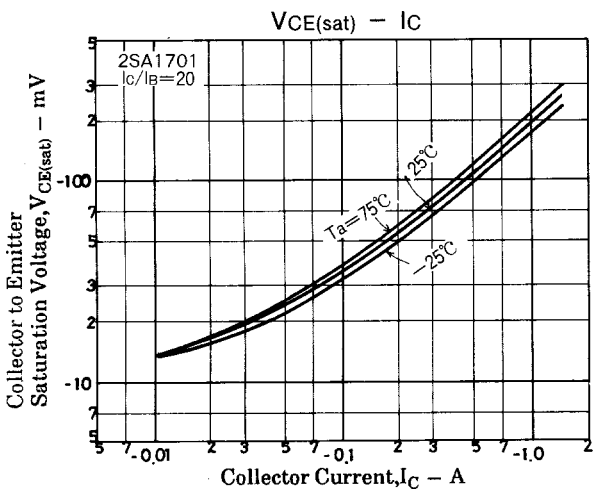

hFE – IC
2SC4481
VCE=2V
Ta=75℃
25℃
–25℃
DC Current Gain,hFE
Collector Current,IC – A

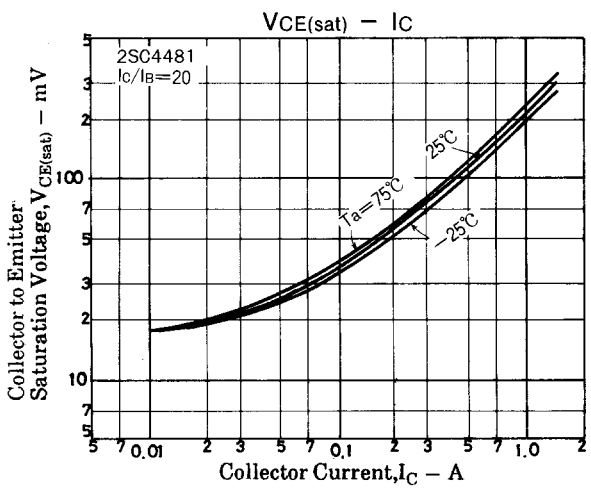

fT – IC
2SA1701
VCE=–2V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – A

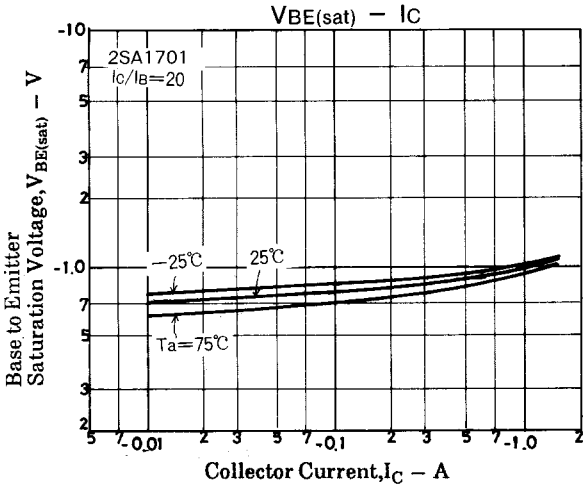

fT – IC
2SC4481
VCE=2V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – A

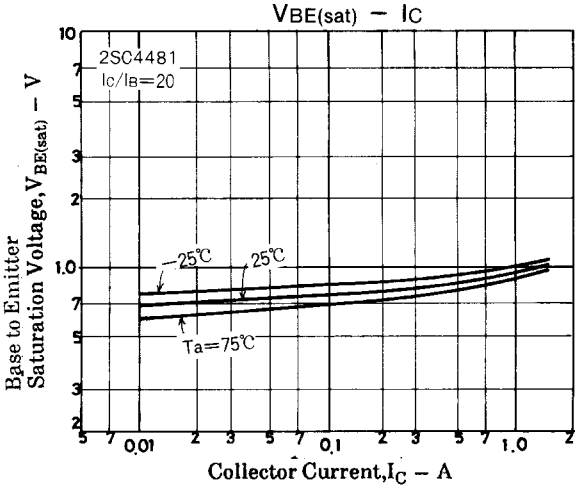

Cob – VCB
2SA1701
f=1 MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V

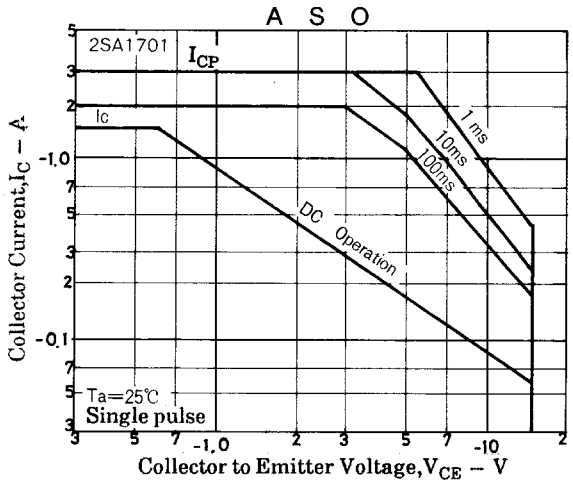

Cob – VCB
2SC4481
f=1 MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V

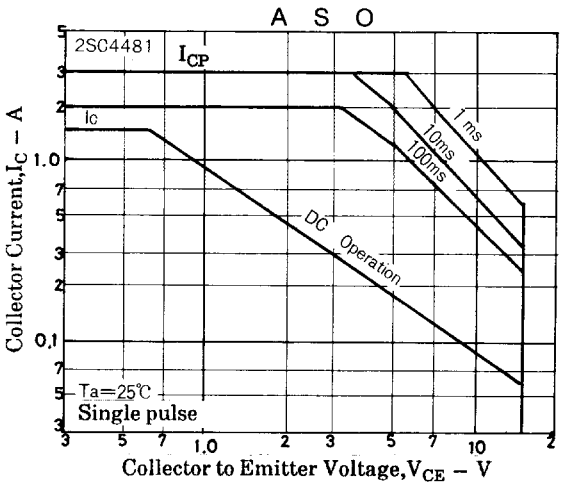

VCE(sat) – IC
2SA1701
IC/IB=20
Ta=75℃
25℃
–25℃
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – A

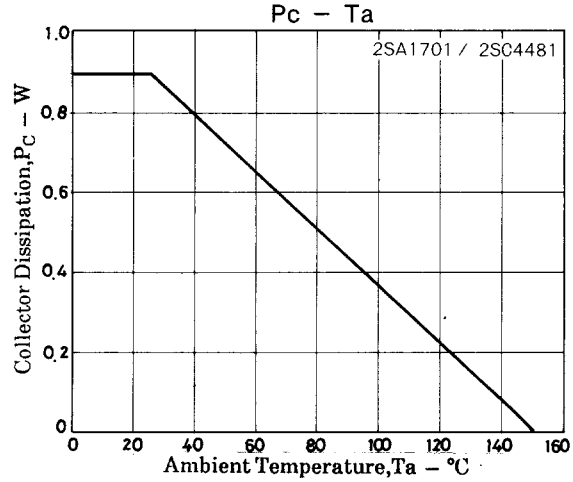

VCE(sat) – IC
2SC4481
IC/IB=20
Ta=75℃
25℃
–25℃
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – A


VBE(sat) – IC
2SA1701
IC/IB=20
25℃
25℃
Ta=75℃
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A


VBE(sat) – IC
2SC4481
IC/IB=20
25℃
25℃
Ta=75℃
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A


A S O
2SA1701
ICP
IC
1 ms
10ms
100ms
DC Operation
Ta=25℃
Single pulse
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V


A S O
2SC4481
ICP
IC
1 ms
10ms
100ms
DC Operation
Ta=25℃
Single pulse
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V


PC – Ta
2SA1701 / 2SC4481
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C

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