Ordering number:2040A

PNP/NPN Epitaxial Planar Silicon Transistors

2SB1122/2SD1622

Low-Frequency Power Amplifier Applications

Applications

- Voltage regulators relay drivers, lamp drivers, electrical equipment.

Features

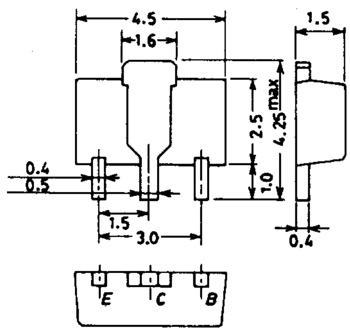
- Adoption of FBET process..
- Very small size making it easy to provide high-density hybrid IC's.

Package Dimensions

unit:mm

2038

[2SB1122/2SD1622]



E : Emitter
C : Collector
B : Base

SANYO : PCP
(Bottom view)

( ) : 2SB1122

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}		(–)5	V
Collector Current	I_C		(–)1	A
Collector Current (Pulse)	I_{CP}		(–)2	A
Collector Dissipation	P_C		500	mW
		Mounted on ceramic board (250mm²×0.8mm)	1.3	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}=(–)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*		560*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)1A	30			
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		150		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(12)		pF
				8.5		pF

* ; The 2SB1122/2SD1622 are classified by 100mA h_{FE} as follows :

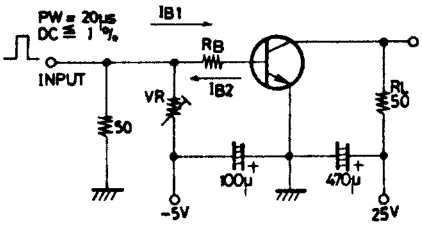
100	R	200
140	S	280
200	T	400
280	U	560

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

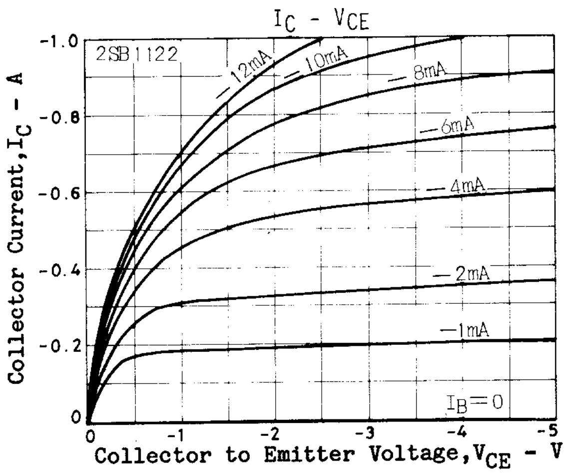
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)500mA, I_B=(–)50mA		(–180)	(–500)	mV
				120	300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)500mA, I_B=(–)50mA		(–)0.9	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
				(40)		ns
Storage Time	t_{stg}	See specified Test Circuit.		350		ns
				(300)		ns
Fall Time	t_f	See specified Test Circuit.		30		ns
				(30)		ns

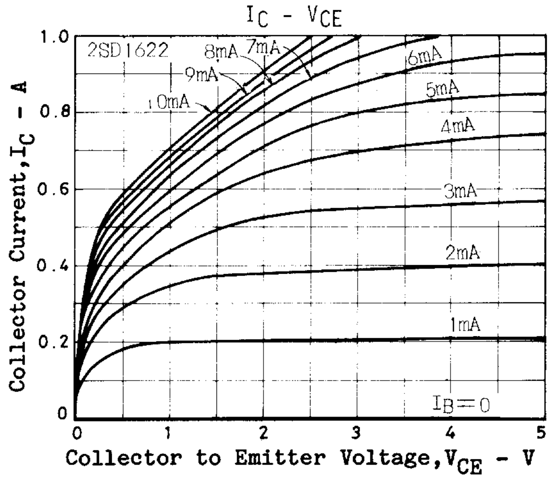
Switching Time Test Circuit

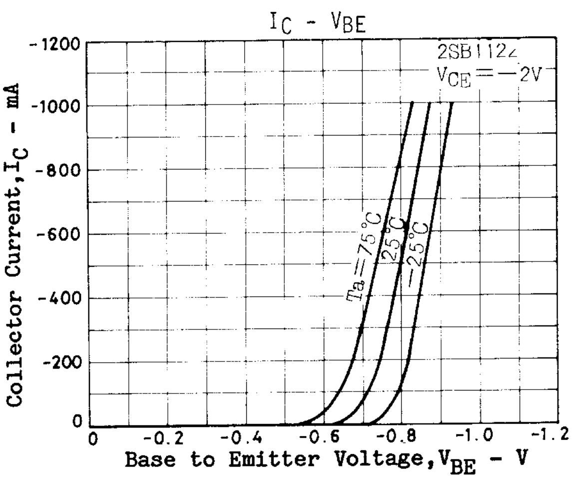


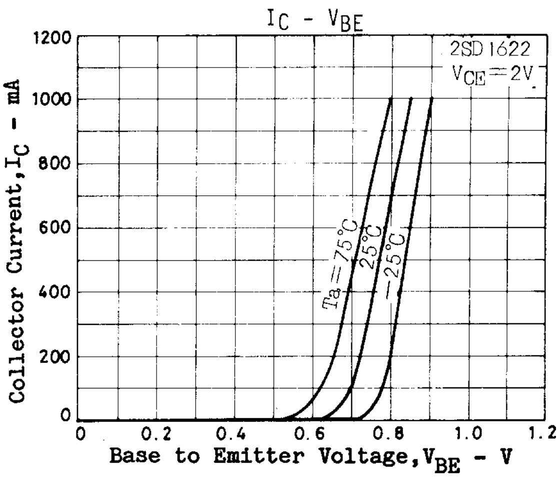
Marking 2SB1122:BE
2SD1622:DE
h_{FE} rank :R,S,T,U

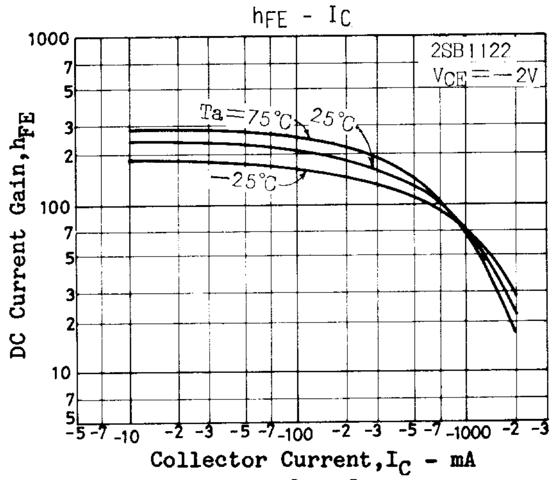
$I_C=10I_{B1}=-10I_{B2}=500mA$
(For PNP, the polarity is reversed.)
Unit (resistance : Ω, capacitance : F)

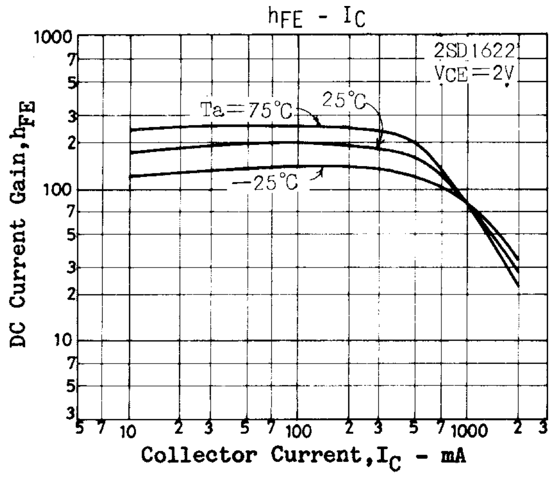


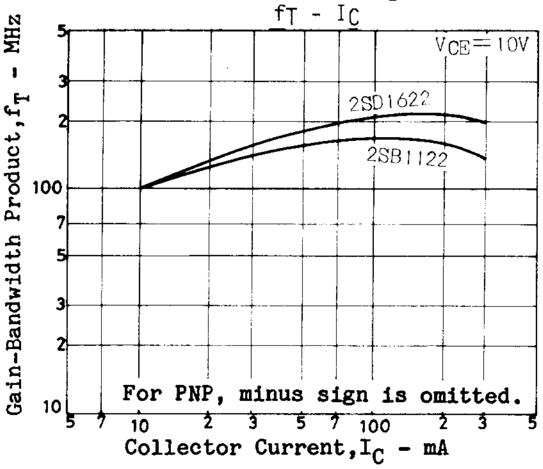


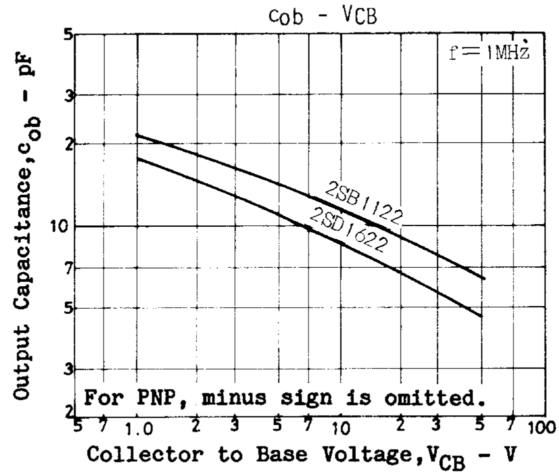


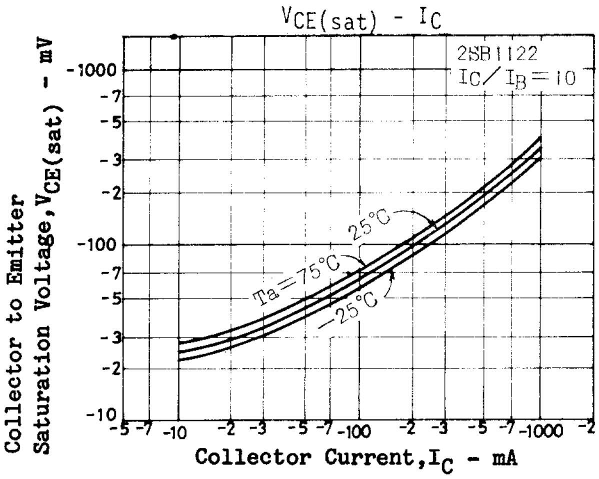


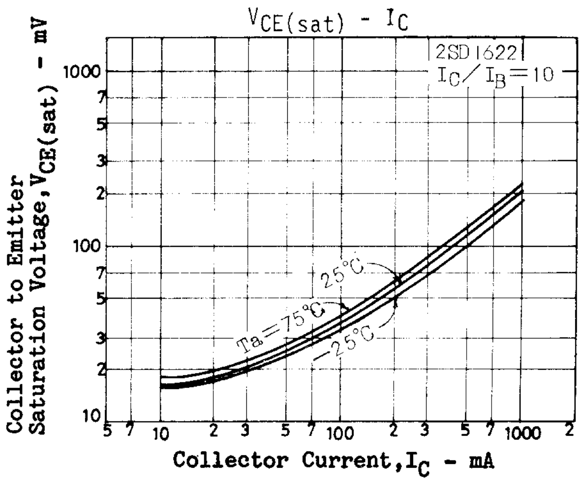

hFE - IC
2SB1122
VCE = −2V
Ta = 75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC - mA

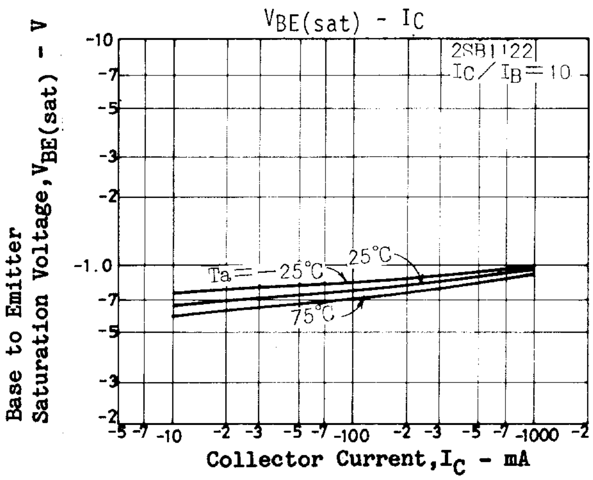

hFE - IC
2SD1622
VCE = 2V
Ta = 75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC - mA

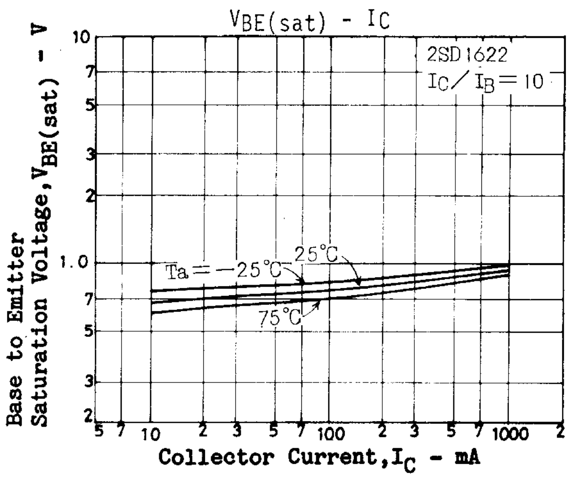

fT - IC
VCE = 10V
2SD1622
2SB1122
For PNP, minus sign is omitted.
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

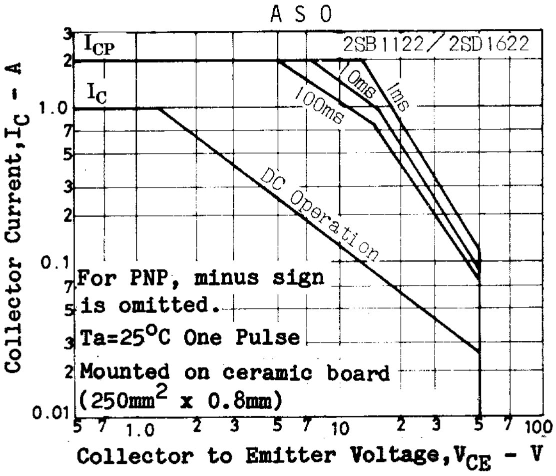

Cob - VCB
f = 1MHz
2SB1122
2SD1622
For PNP, minus sign is omitted.
Output Capacitance, Cob - pF
Collector to Base Voltage, VCB - V

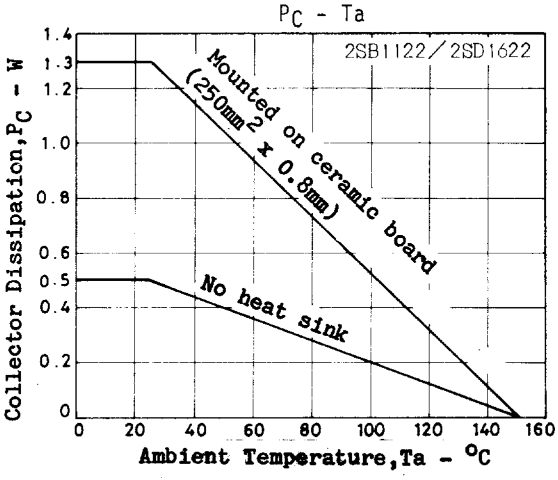

VCE(sat) - IC
2SB1122
IC / IB = 10
25°C
Ta = 75°C
−25°C
Collector to Emitter Saturation Voltage, VCE(sat) - mV
Collector Current, IC - mA


VCE(sat) - IC
2SD1622
IC / IB = 10
25°C
Ta = 75°C
−25°C
Collector to Emitter Saturation Voltage, VCE(sat) - mV
Collector Current, IC - mA


VBE(sat) - IC
2SB1122
IC / IB = 10
Ta = −25°C
25°C
75°C
Base to Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA


VBE(sat) - IC
2SD1622
IC / IB = 10
Ta = −25°C
25°C
75°C
Base to Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA





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