Ordering number: EN 2040A

SANYO

No.2040A

2SB1122/2SD1622

PNP/NPN Epitaxial Planar Silicon Transistors

Low-Frequency Power Amp 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 ICs.

( ): 2SB1122

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	500	mW
	Mounted on ceramic board (250mm^2 X 0.8mm)	1.3	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

Electrical Characteristics at Ta=25°C

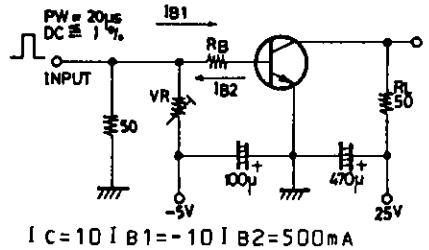
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)50V, I_E=0			(-)100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)4V, I_C=0			(-)100	nA
DC Current Gain	$h_{FE}(1)$	V_{CE}=(-)2V, I_C=(-)100mA	100*		560*	
	$h_{FE}(2)$	V_{CE}=(-)2V, I_C=(-)1A	30			
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)50mA		150		MHz
Output Capacitance	C_{ob}	V_{CB}=(-)10V, f=1MHz		(12)		pF
				8.5		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)500mA, I_B=(-)50mA		(-180)	(-500)	mV
				120	300	mV
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=(-)500mA, I_B=(-)50mA		(-)0.9	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)1mA, R_{BE}=∞	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)10μA, I_C=0	(-)5			V

Continued on next page.

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

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

Switching Time Test Circuit

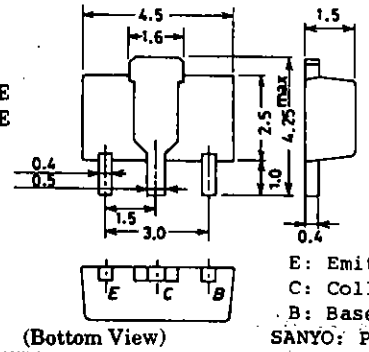


I C=10 I B1=-10 I B2=500mA
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω, Capacitance : F)

Package Dimensions 2038
(unit: mm)

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



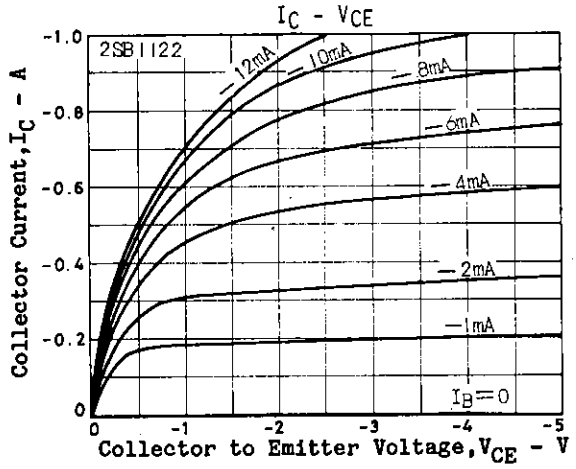
(Bottom View)

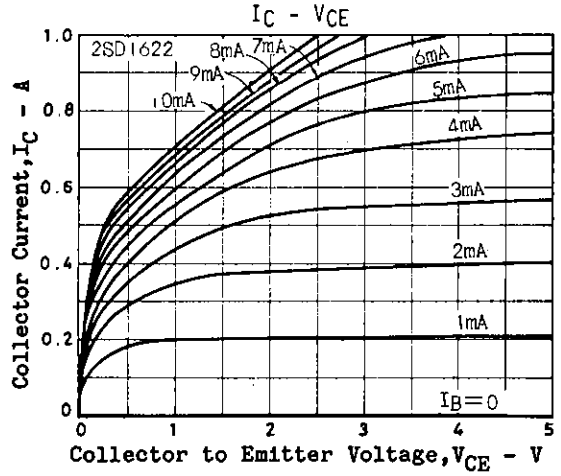
E: Emitter
C: Collector
B: Base
SANYO: PCP

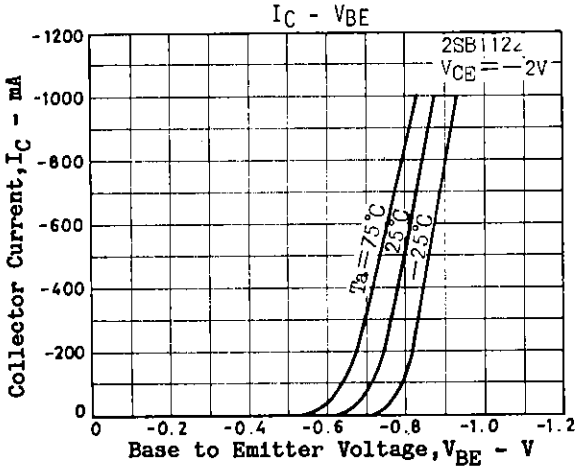
SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10,1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

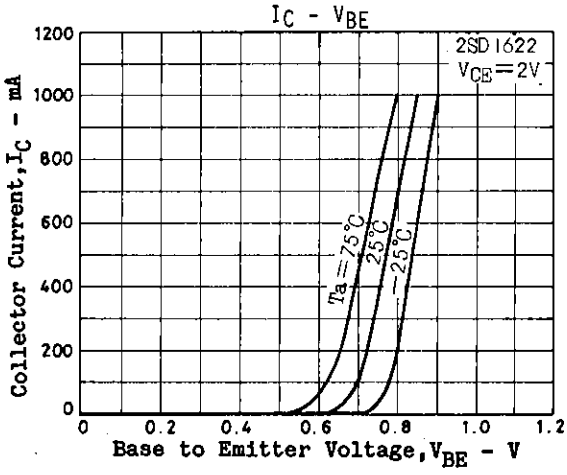
Continued from preceding page.

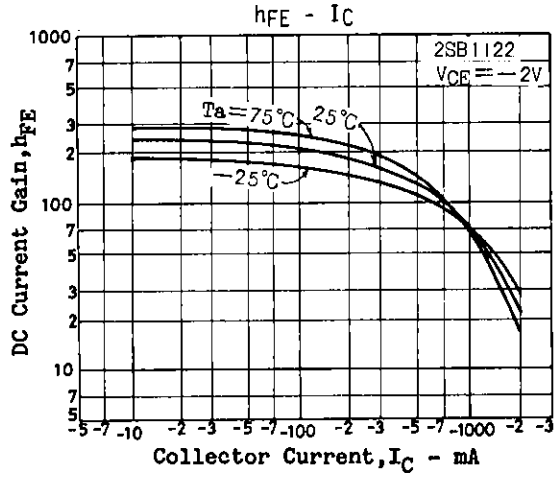
			min	typ	max	unit
Turn-on Time	t_{on}	See specified Test Circuit.		(40)		ns
		"		40		ns
Storage Time	t_{stg}	"		(300)		ns
		"		350		ns
Fall Time	t_f	"		(30)		ns
		"		30		ns

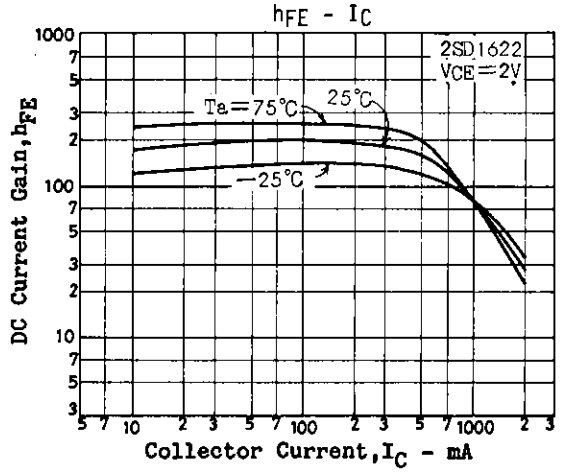


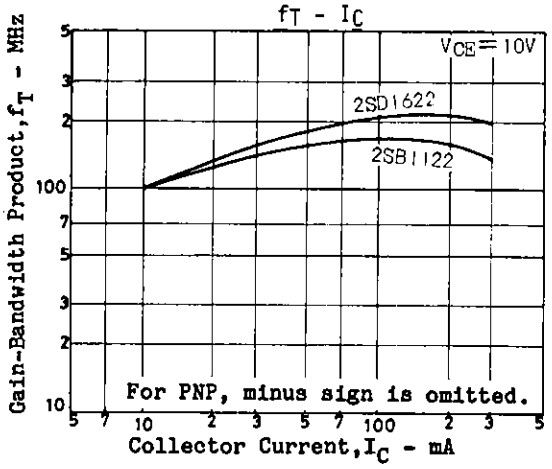


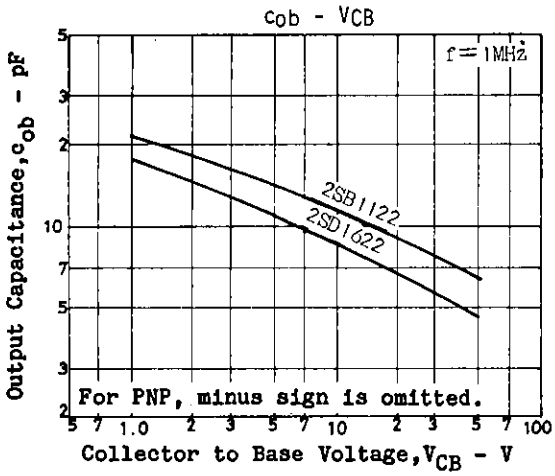


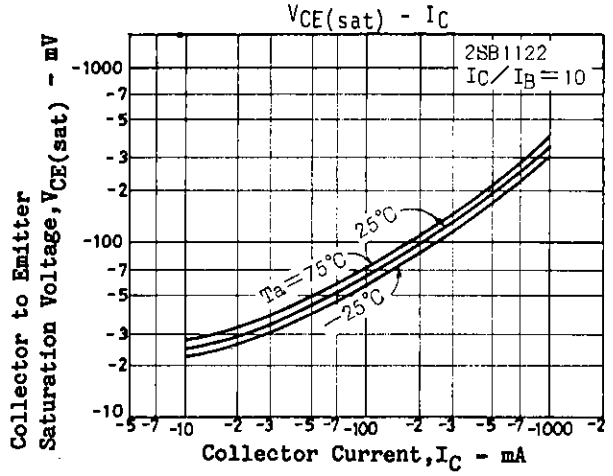


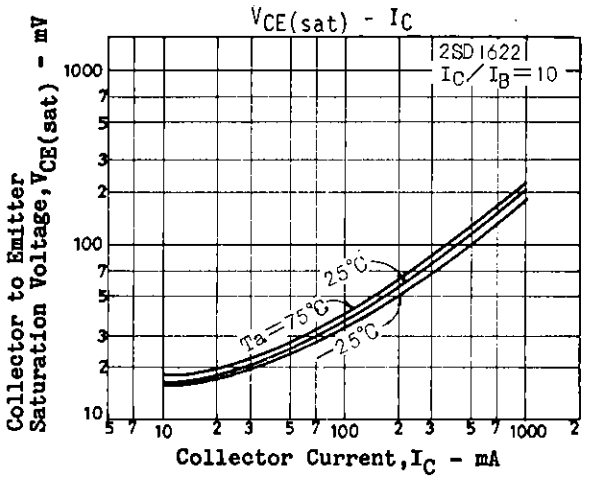


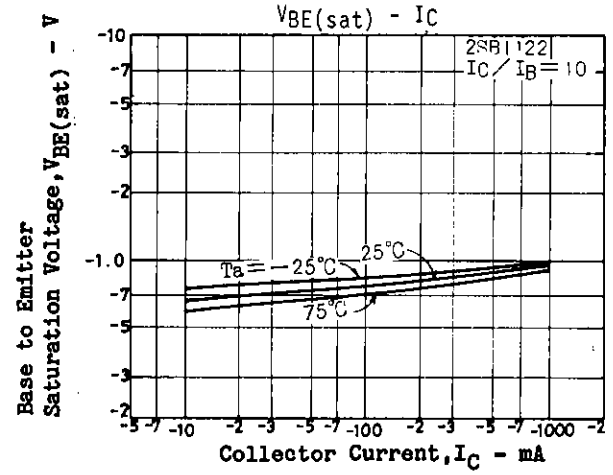


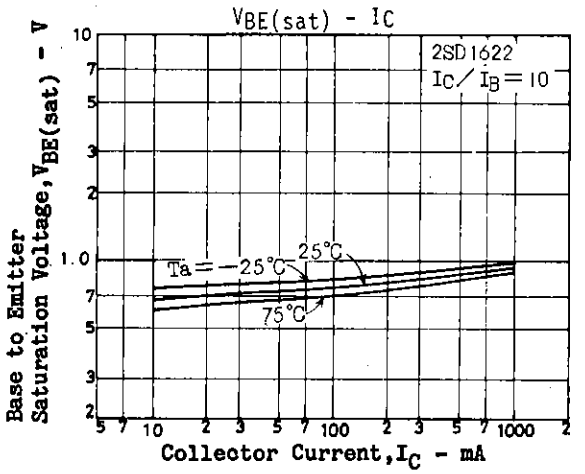

fT - IC
VCE=10V
2SD1622
2SB1122
For PNP, minus sign is omitted.
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

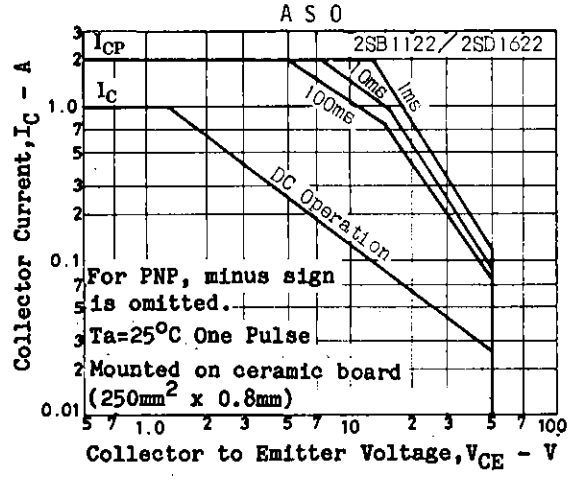

Cob - VCB
f=1MHz
2SB1122
2SD1622
For PNP, minus sign is omitted.
Output Capacitance, Cob - pF
Collector to Base Voltage, VCB - V

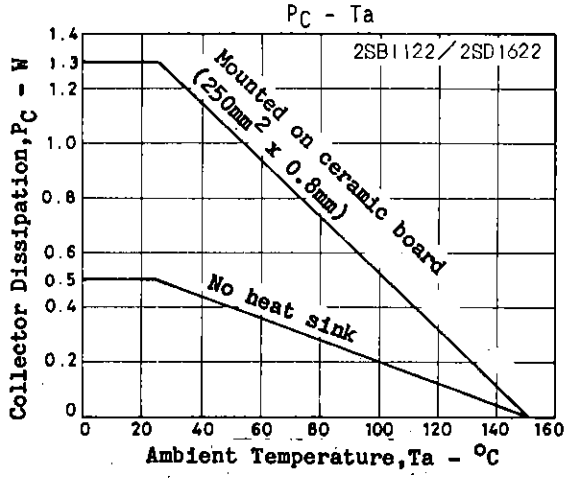

VCE(sat) - IC
2SB1122
IC/IB=10
25°C
Ta=75°C
-25°C
Collector to Emitter Saturation Voltage, VCE(sat) - mV
Collector Current, IC - mA


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


A S O
2SB1122/2SD1622
ICP
IC
1Oms
1ms
100ms
DC Operation
For PNP, minus sign is omitted.
Ta=25°C One Pulse
Mounted on ceramic board (250mm2 x 0.8mm)
Collector Current, IC - A
Collector to Emitter Voltage, VCE - V


PC - Ta
2SB1122/2SD1622
Mounted on ceramic board (250mm2 x 0.8mm)
No heat sink
Collector Dissipation, PC - W
Ambient Temperature, Ta - °C

■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:
① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.