



SANYO Semiconductors

## DATA SHEET

# 2SB1122 / 2SD1622

PNP / NPN Epitaxial Planar Silicon Transistors

Low-Frequency Power Amplifier Applications

## Applications

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

## Features

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

## Specifications ( ) : 2SB1122

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	$V_{CE0}$		(-)50	V
Emitter-to-Base Voltage	$V_{EB0}$		(-)5	V
Collector Current	$I_C$		(-)1	A
Collector Current (Pulse)	$I_{CP}$		(-)2	A
Collector Dissipation	PC		500	mW
		Mounted on a ceramic board (250mm $\times$ 0.8mm)	1.3	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	$I_{CBO}$	$V_{CB}=-50\text{V}, I_E=0\text{A}$			(-)100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0\text{A}$			(-)100	nA

Marking 2SB1122 : BE  
2SD1622 : DE

Continued on next page.

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Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	hFE1	VCE=(-)2V, IC=(-)100mA	100*		560*	
	hFE2	VCE=(-)2V, IC=(-)1A	30			
Gain-Bandwidth Product	fT	VCE=(-)10V, IC=(-)50mA		150		MHz
Output Capacitance	Cob	VCB=(-)10V, f=1MHz		(12)8.5		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=(-)500mA, IB=(-)50mA		(-180)120	(-500)300	mV
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=(-)500mA, IB=(-)50mA		(-)0.9	(-)1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=(-)10μA, IE=0A	(-)60			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=(-)1mA, RBE=∞	(-)50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=(-)10μA, IC=0A	(-)5			V
Turn-ON Time	ton	See specified Test Circuit.		(40)40		ns
Storage Time	tstg	See specified Test Circuit.		(300)350		ns
Fall Time	tf	See specified Test Circuit.		(30)30		ns

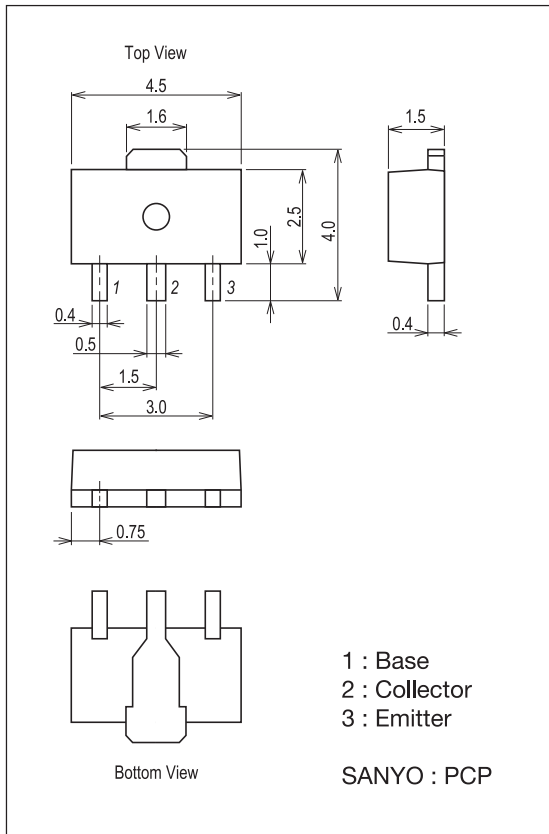
\*: The 2SB1122 / 2SD1622 are classified by 100mA hFE as follows:

Rank	R	S	T	U
hFE	100 to 200	140 to 280	200 to 400	280 to 560

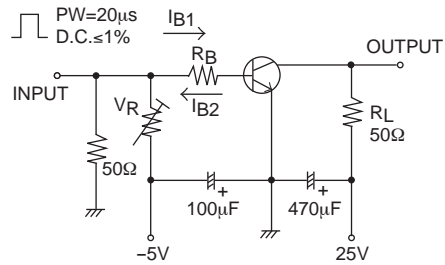
## Package Dimensions

unit : mm (typ)

7007B-004

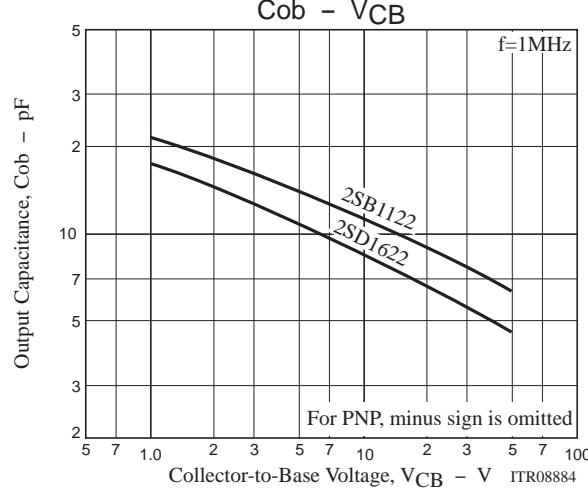
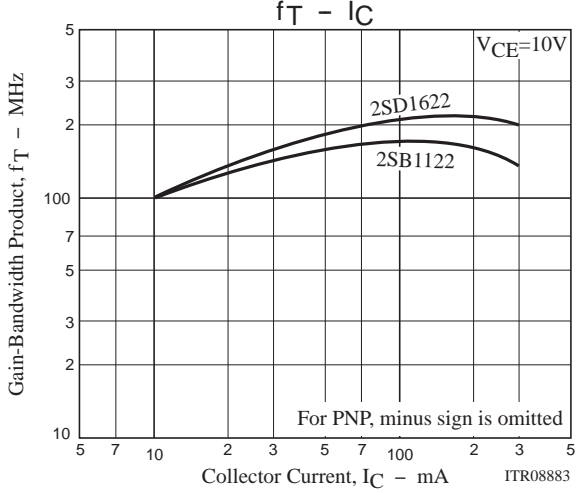
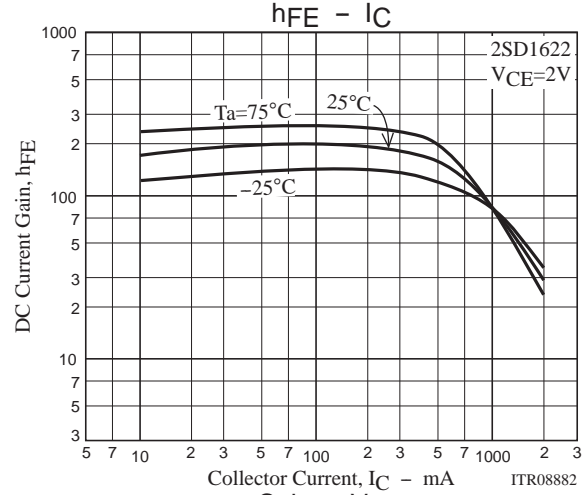
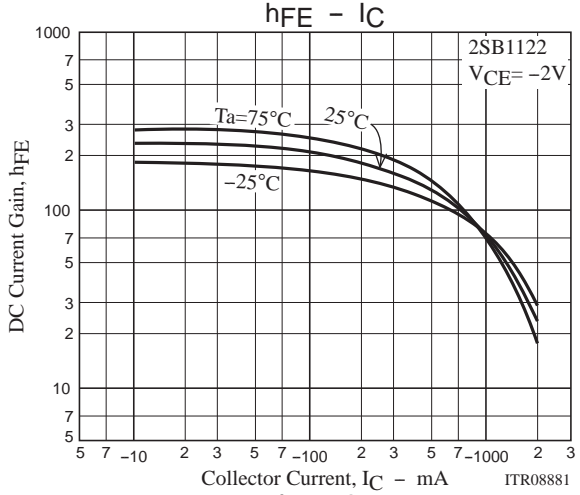
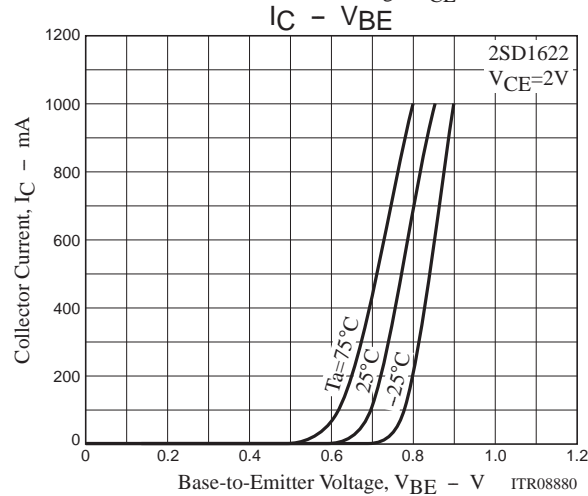
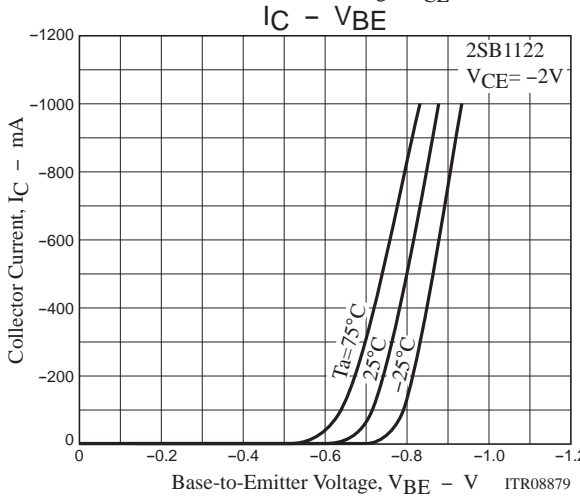
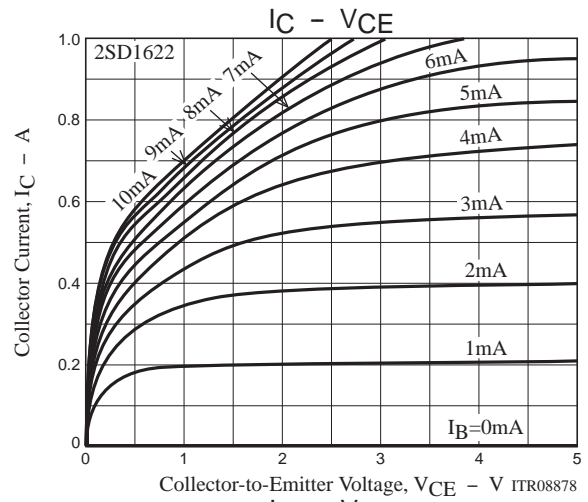
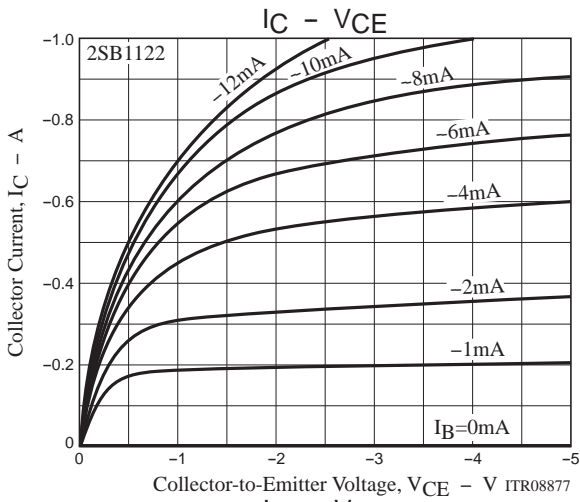


## Switching Time Test Circuit

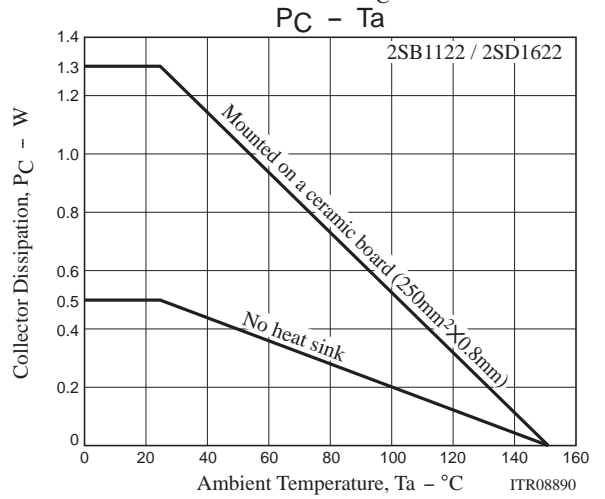
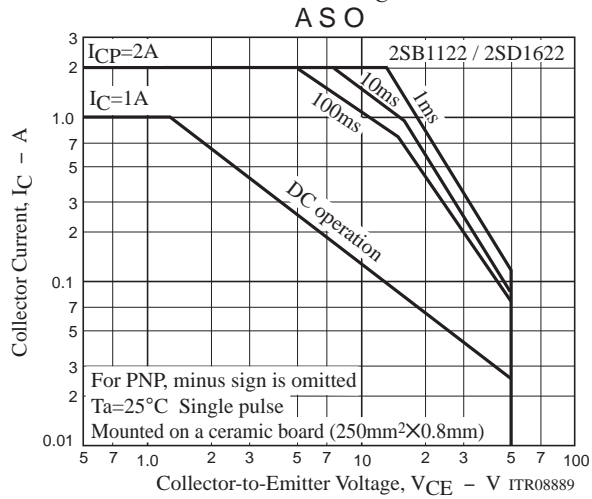
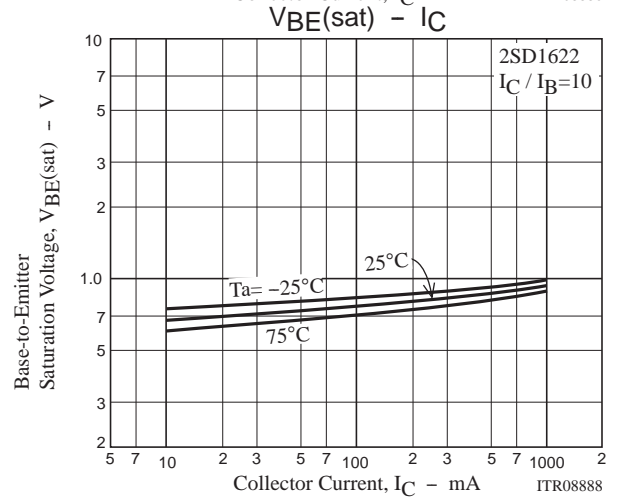
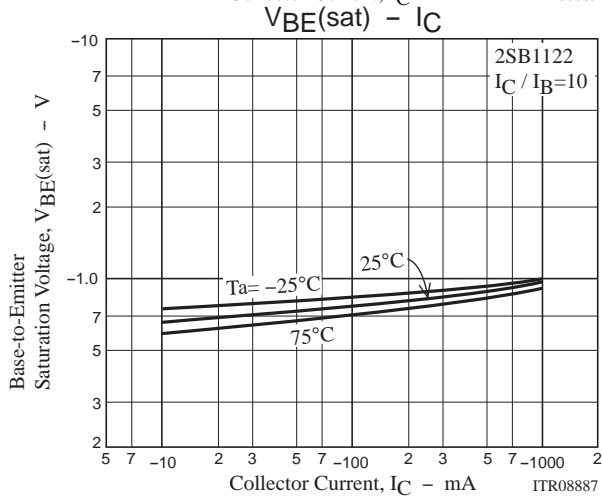
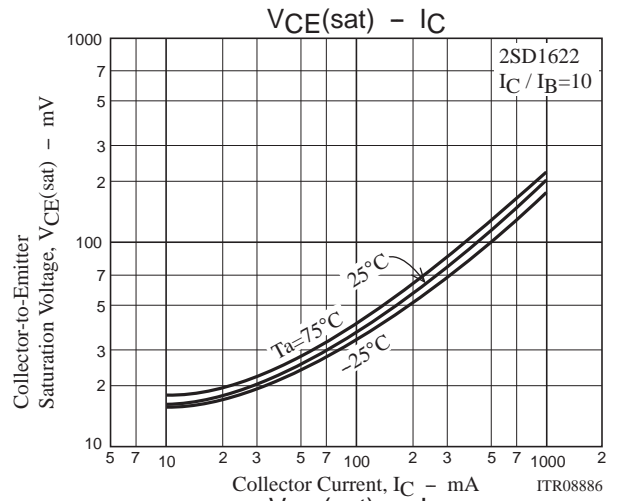
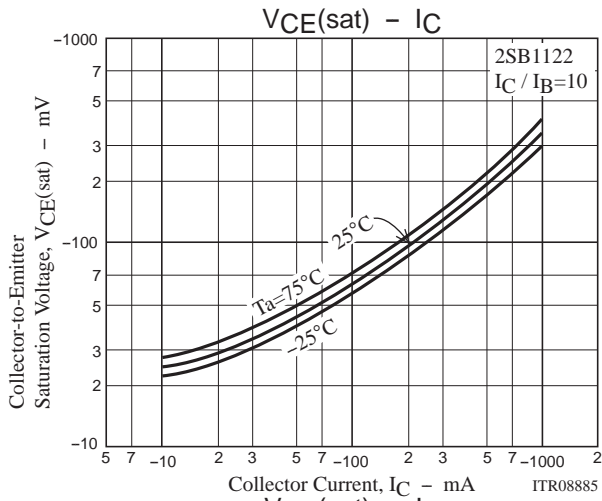


IC=10IB1 = -10IB2=500mA  
(For PNP, the polarity is reversed)

# 2SB1122 / 2SD1622



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