



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 Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		(-)60	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		(-)50	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		(-)5	V
Collector Current	I <sub>C</sub>		(-)1	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)2	A
Collector Dissipation	P <sub>C</sub>		500	mW
		Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =(-)50V, I <sub>E</sub> =0A			(-)100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0A			(-)100	nA

Marking 2SB1122 : BE  
2SD1622 : DE

Continued on next page.

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# 2SB1122 / 2SD1622

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	hFE1	$V_{CE}=(-)2V, I_C=(-)100mA$	100*		560*	
	hFE2	$V_{CE}=(-)2V, I_C=(-)1A$	30			
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10V, I_C=(-)50mA$		150		MHz
Output Capacitance	Cob	$V_{CB}=(-)10V, f=1MHz$		(12)8.5		pF
Collector-to-Emitter Saturation Voltage	$V_{CE}(sat)$	$I_C=(-)500mA, I_B=(-)50mA$		(-180)120	(-500)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	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		(40)40		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		(300)350		ns
Fall Time	$t_f$	See specified Test Circuit.		(30)30		ns

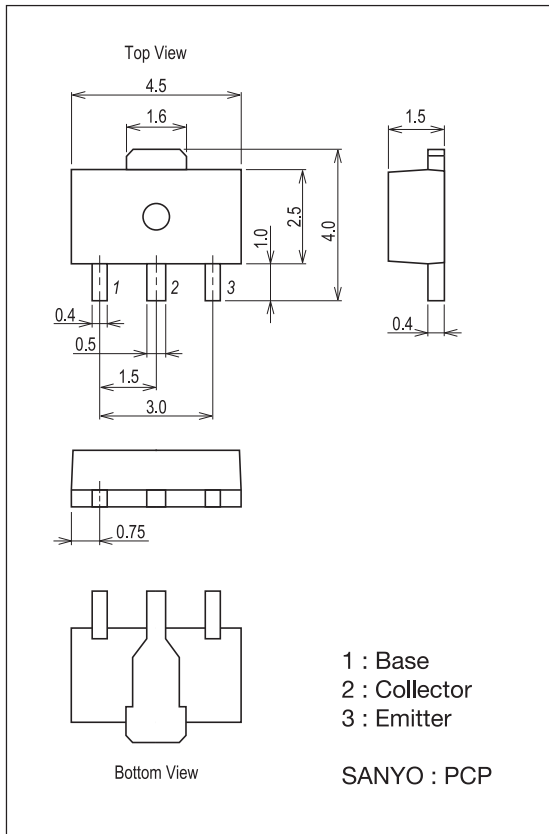
\*: The 2SB1122 / 2SD1622 are classified by 100mA hFE as follows:

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

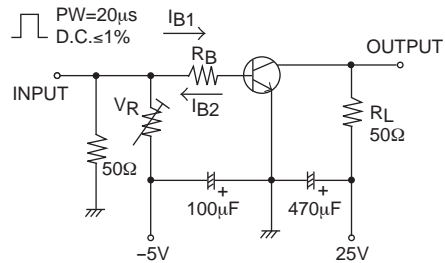
## Package Dimensions

unit : mm (typ)

7007B-004

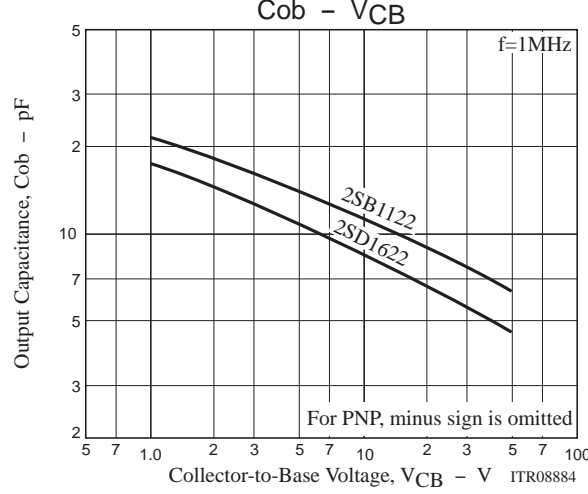
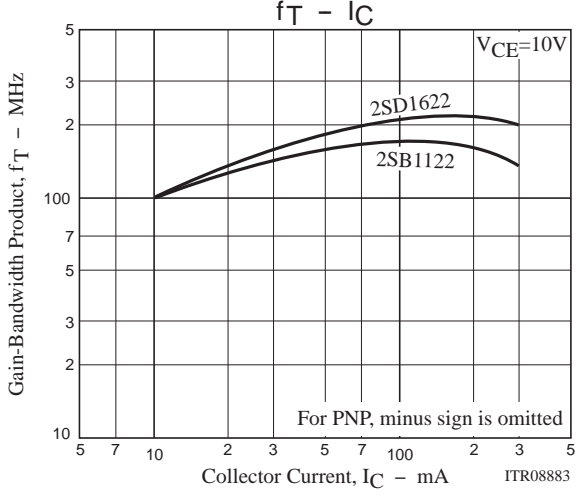
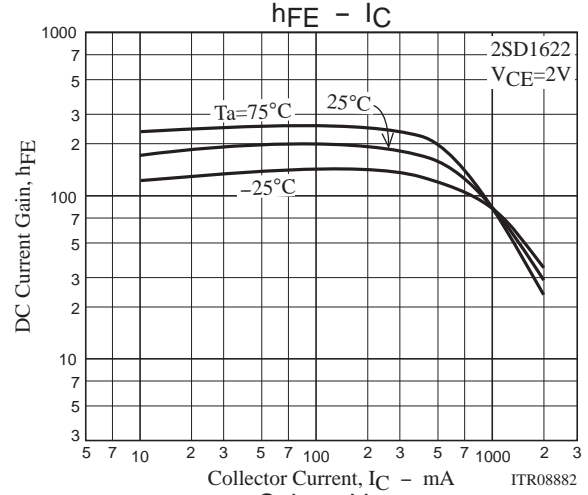
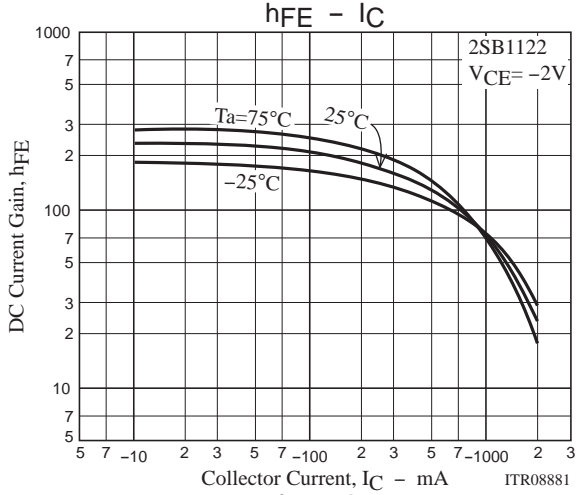
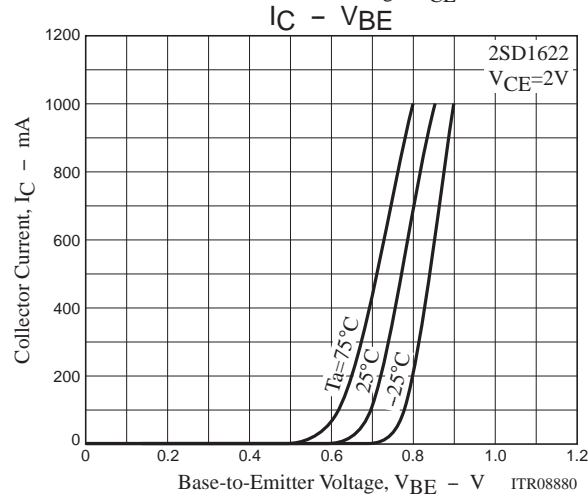
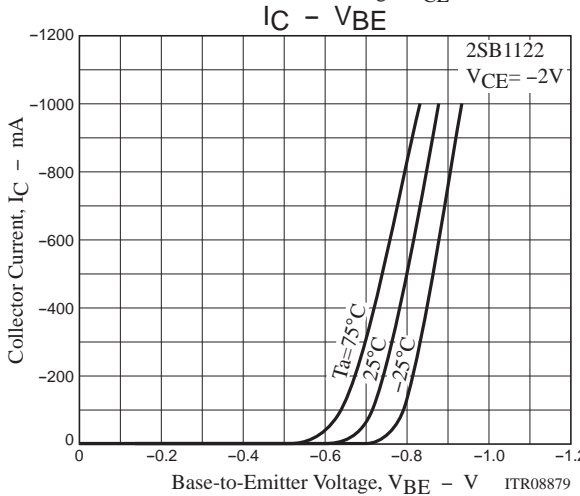
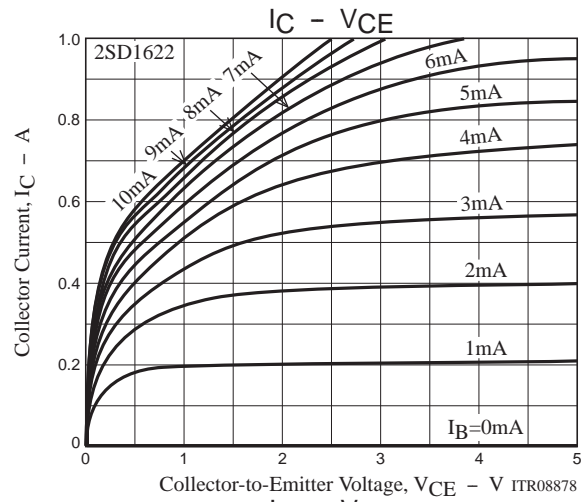
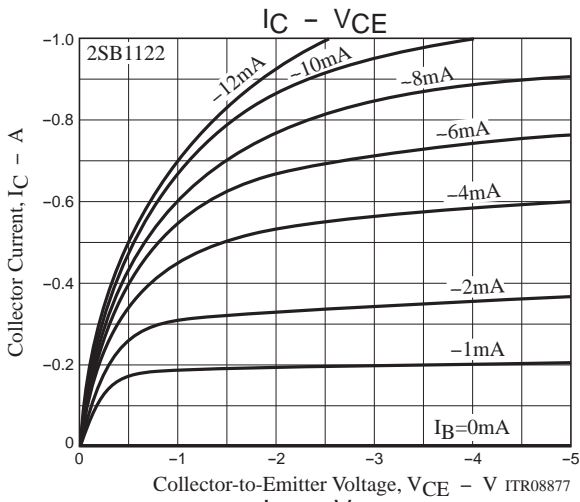


## Switching Time Test Circuit

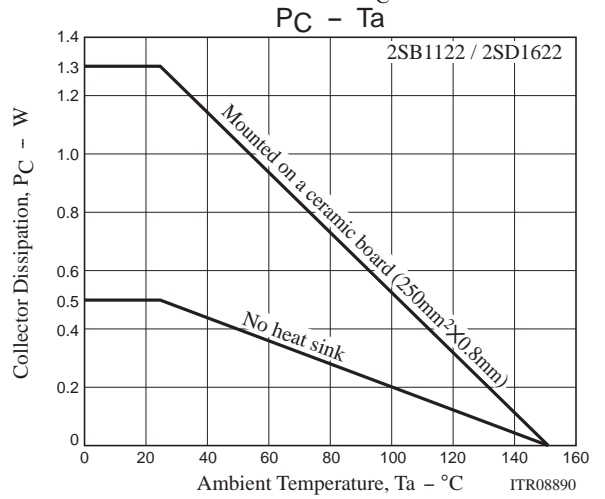
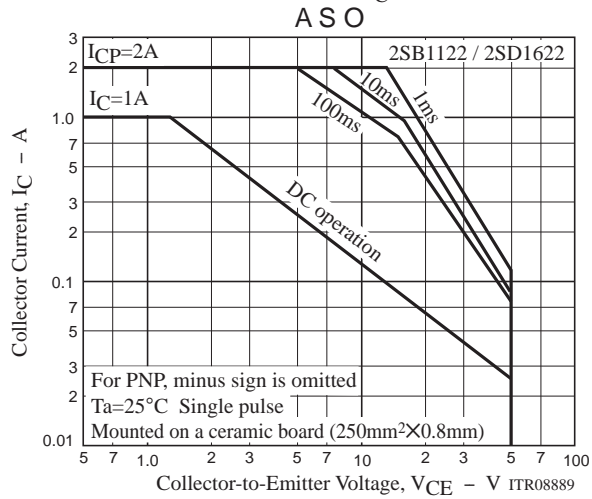
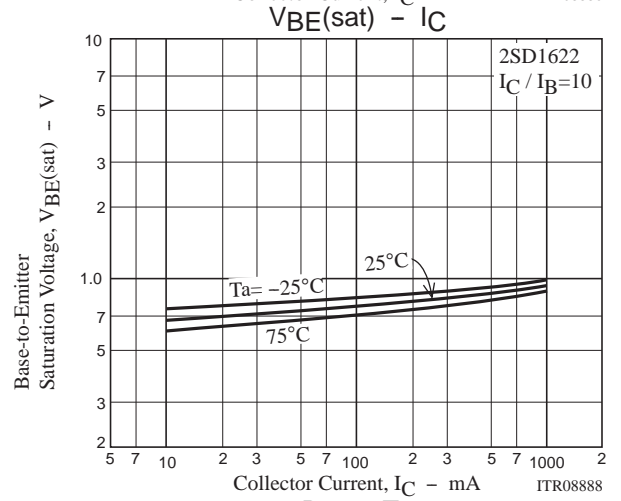
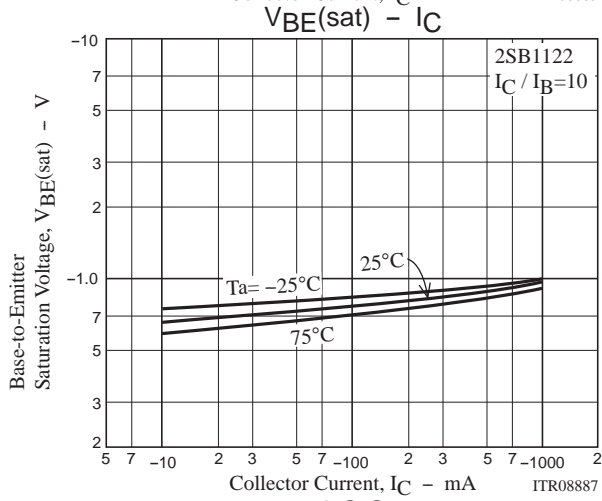
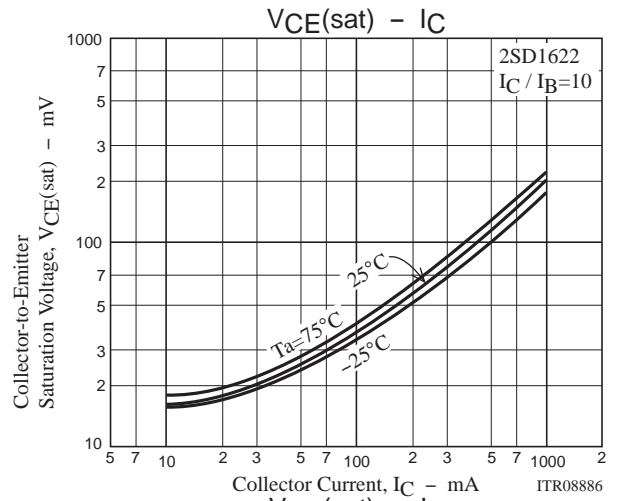
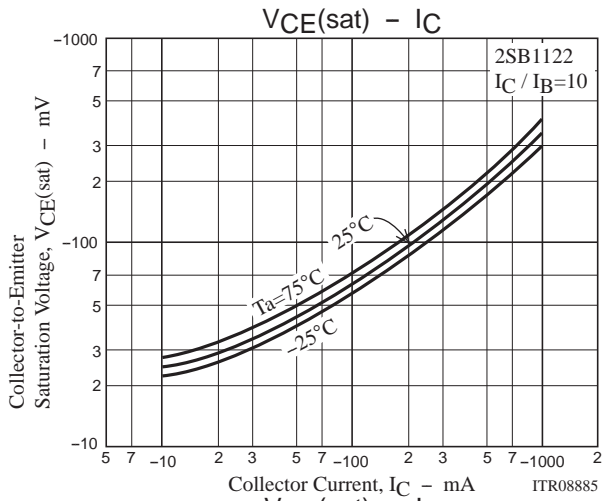


$I_C=10I_{B1} = -10I_{B2}=500mA$   
(For PNP, the polarity is reversed)

# 2SB1122 / 2SD1622



# 2SB1122 / 2SD1622



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