



2SB1122/2SD1622

Low-Frequency Power Amplifier Applications

Applications

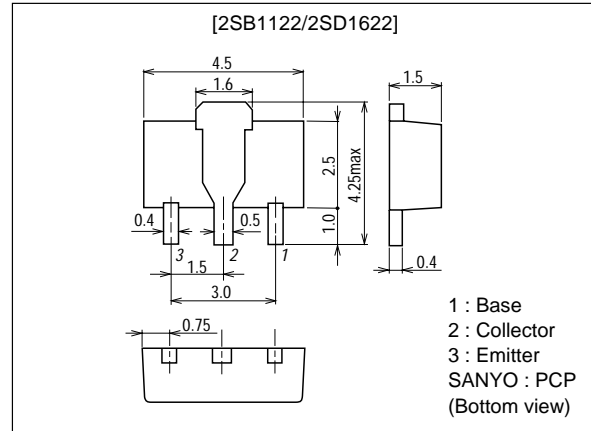
- Voltage regulators relay drivers, lamp drivers, electrical equipment.

Features

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

Package Dimensions

unit:mm
2038A



() : 2SB1122

Specifications

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_{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 \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_{CB0}	$V_{CB} = (-)50\text{V}, I_E = 0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)100	nA
DC Current Gain	h_{FE1}	$V_{CE} = (-)2\text{V}, I_C = (-)100\text{mA}$	100*		560*	
	h_{FE2}	$V_{CE} = (-)2\text{V}, I_C = (-)1\text{A}$	30			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$		150		MHz

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

Marking 2SB1122 : BE
2SD1622 : DE

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Rank	R	S	T	U
h_{FE}	100 to 200	140 to 280	200 to 400	280 to 560

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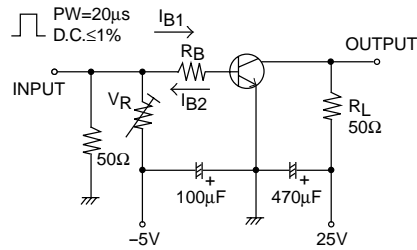
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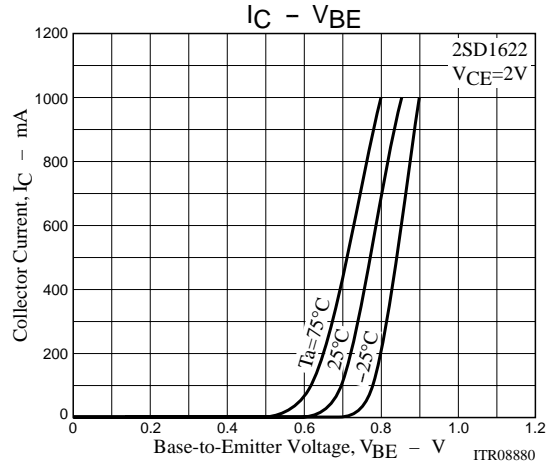
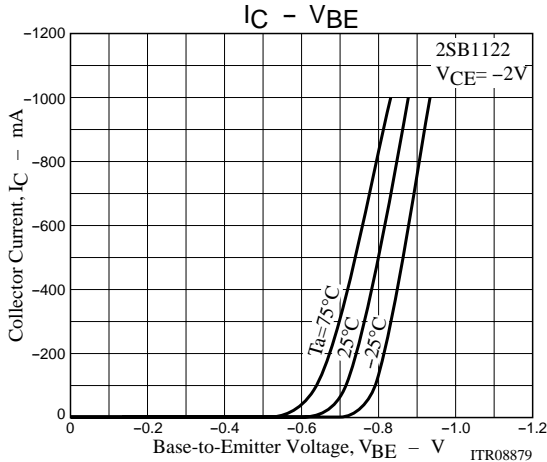
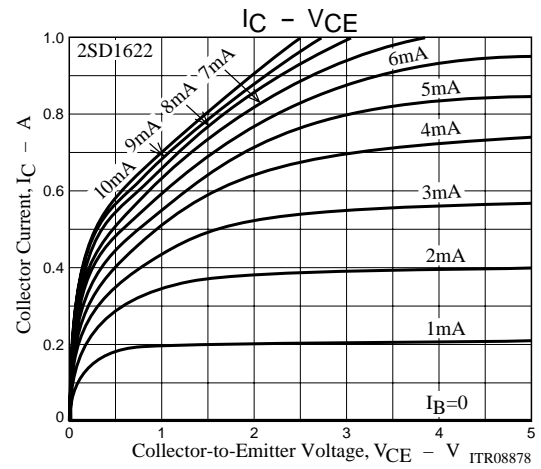
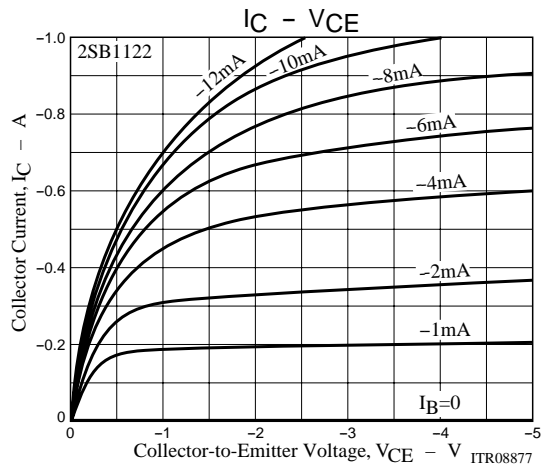
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(12)		pF
				8.5		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-180)	(-500)	mV
				120	300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-0.9)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)	60		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)	50		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)	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

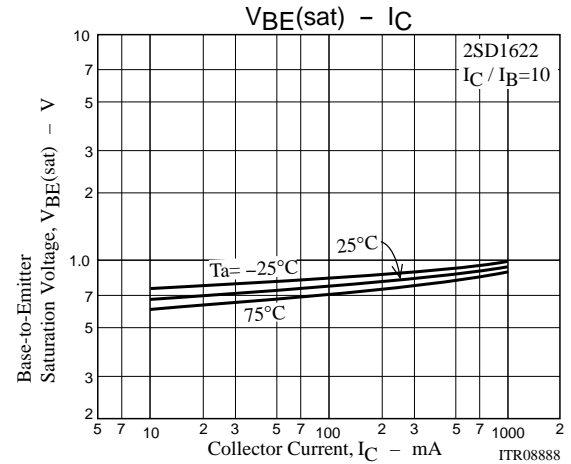
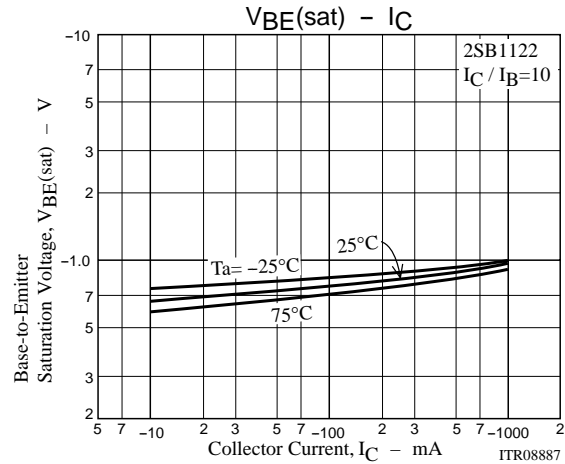
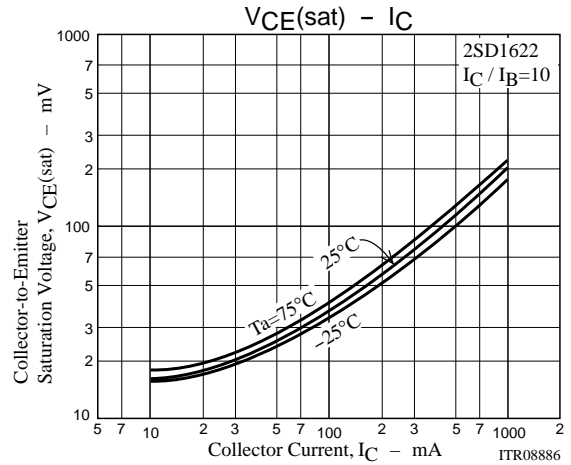
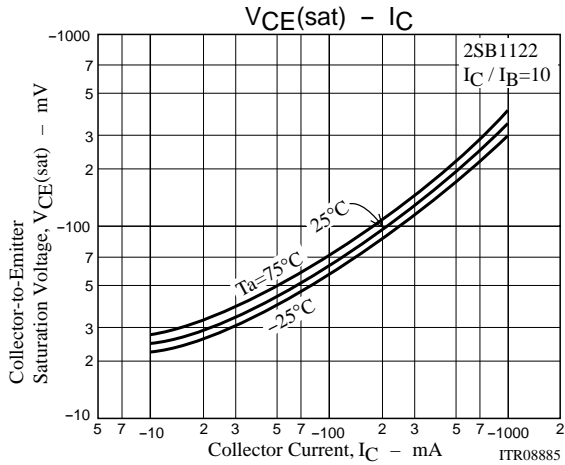
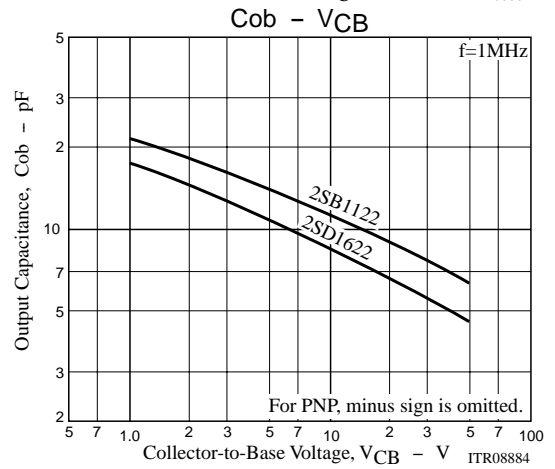
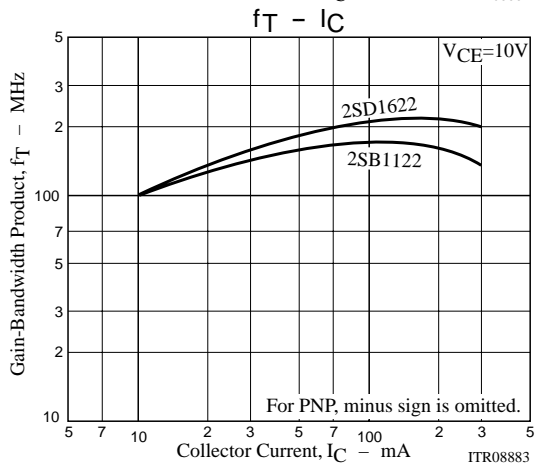
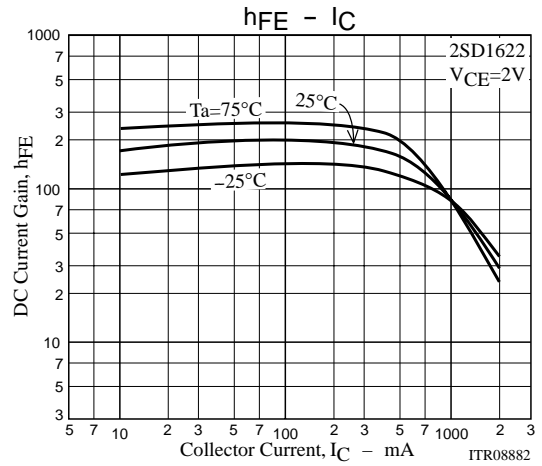
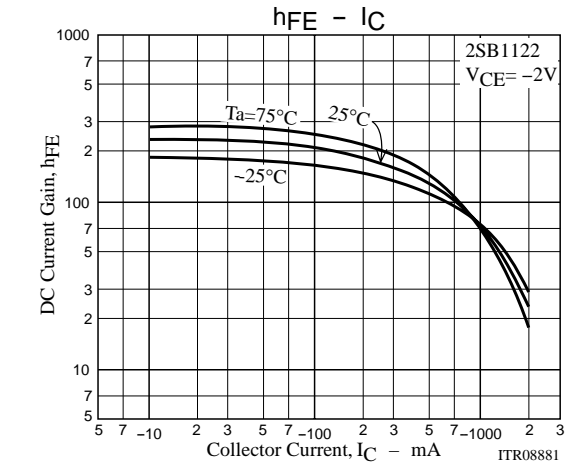
Switching Time Test Circuit



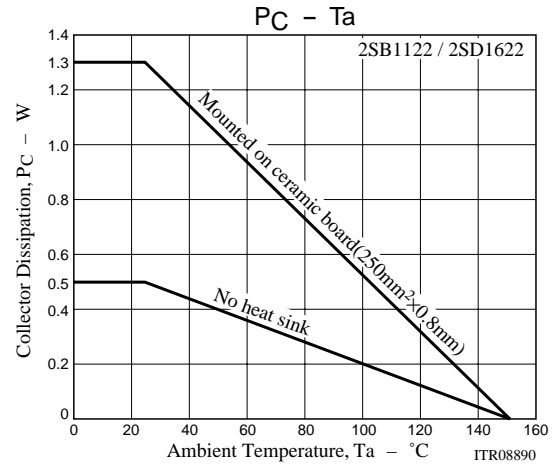
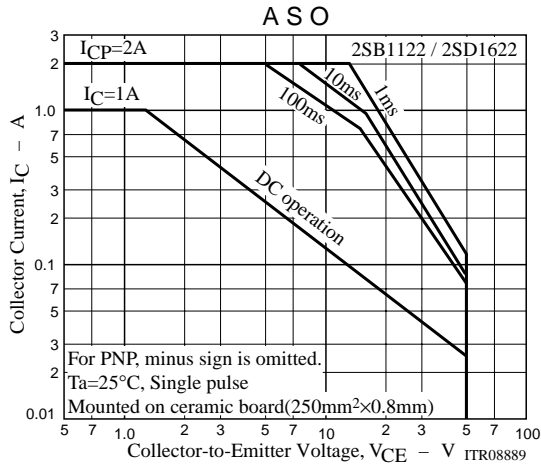
$I_C=10I_{B1}=-10I_{B2}=500mA$
(For PNP, the polarity is reversed.)



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