

	No. 2019A	2SB1124/2SD1624
	PNP/NPN Epitaxial Planar Silicon Transistors High-Current Switching Applications	

Applications

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

Features

- Adoption of FBIT, MBIT processes.
- Low collector-to-emitter saturation voltage.
- Fast switching speed.
- Large current capacity and wide ASO

(): 2SB1124

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	(-)60	V
Collector to Emitter Voltage	V_{CE0}	(-)50	V
Emitter to Base Voltage	V_{EB0}	(-)6	V
Collector Current	I_C	(-)3	A
Collector Current(Pulse)	I_{CP}	(-)6	A
Collector Dissipation	P_C	500	mW
Mounted on ceramic board (250mm ² x 0.8mm)			
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CB}=(-)40\text{V}, I_E=0$			(-)1	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)1	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=(-)2\text{V}, I_C=(-)100\text{mA}$	100*		560*	
	$h_{FE}(2)$	$V_{CE}=(-)2\text{V}, I_C=(-)3\text{A}$	35			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		150		MHz
Output Capacitance	c_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(39)		pF
				25		pF

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*:The 2SB1124/2SD1624 are classified by 100mA h_{FE} as follows:

100	R	200	140	S	280	200	T	400	280	U	560
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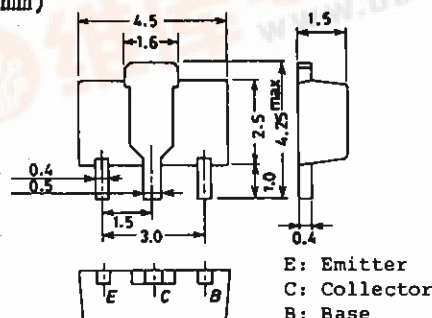
Marking 2SB1124:BG

2SD1624:DG

h_{FE} rank : R, S, T, U

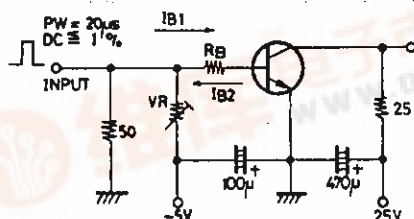
Package Dimensions 2038

(unit:mm)



SANYO: PCP
(Bottom View)

Switching Time Test Circuit



$$10I_{B1} = -10I_{B2} = I_C = 1\text{A}$$

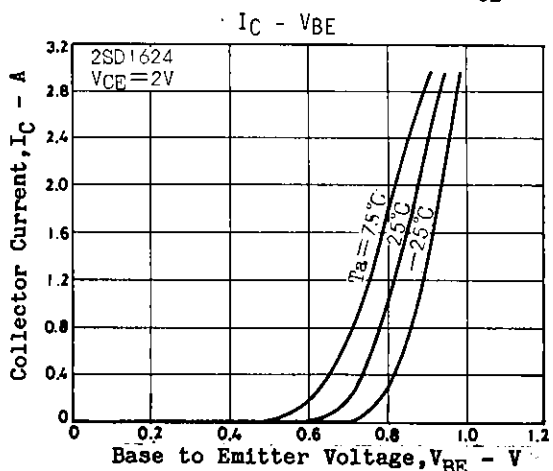
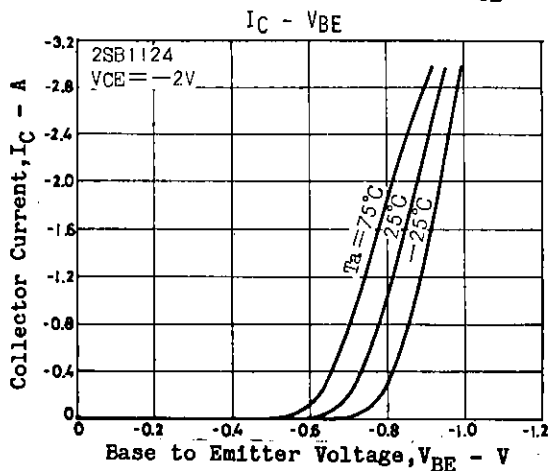
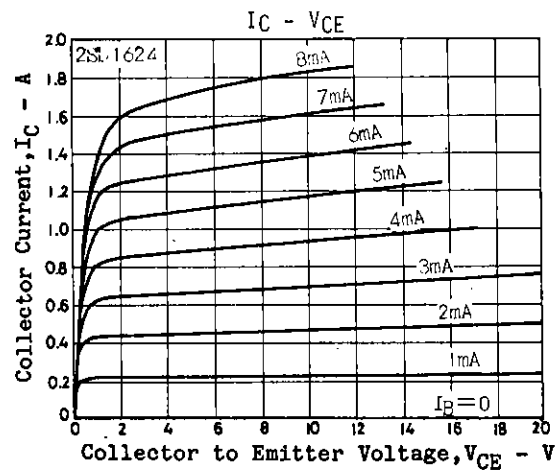
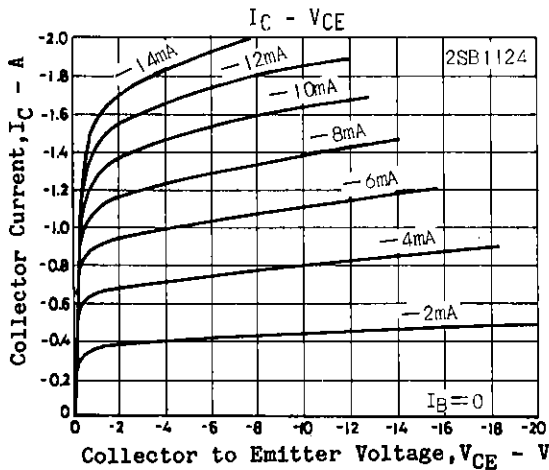
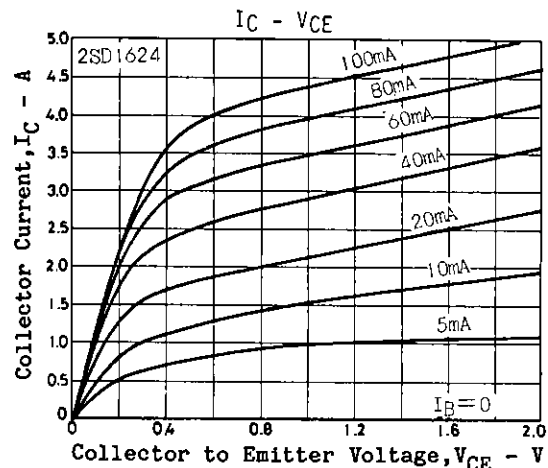
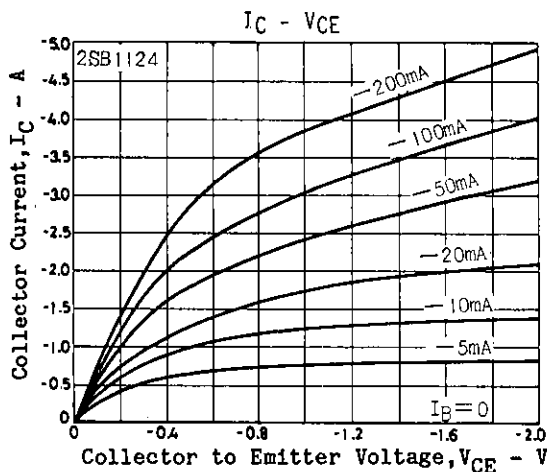
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω , Capacitance : F)

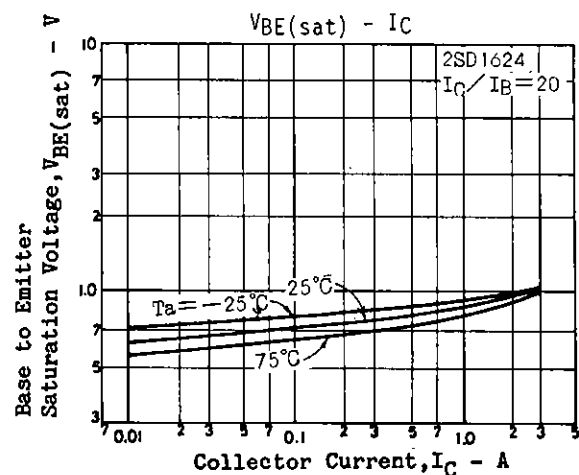
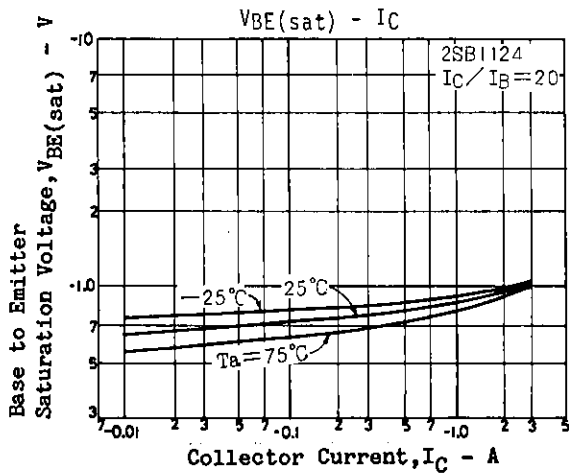
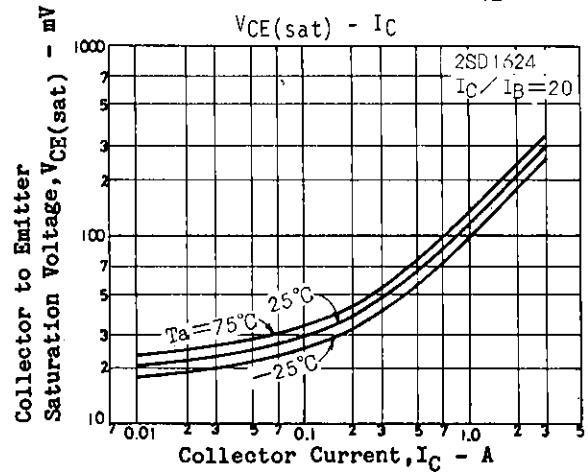
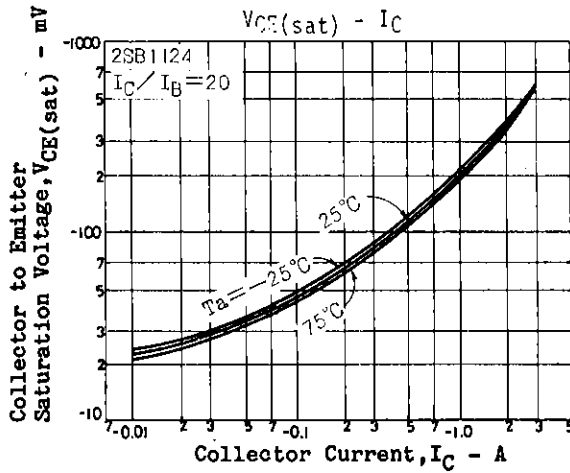
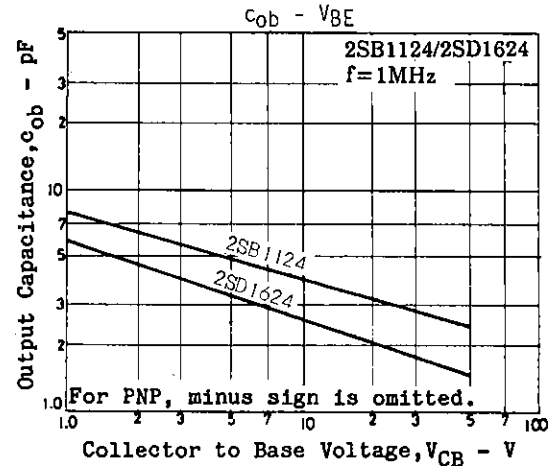
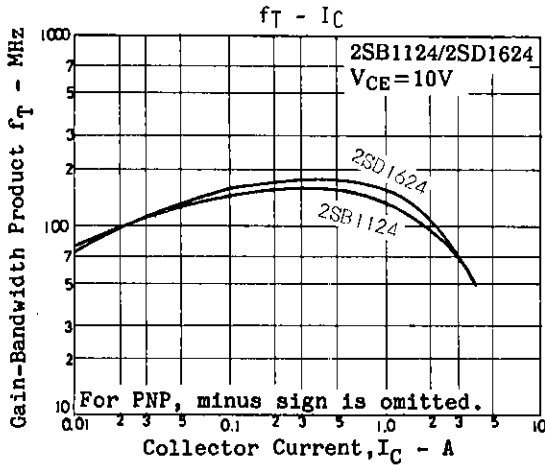
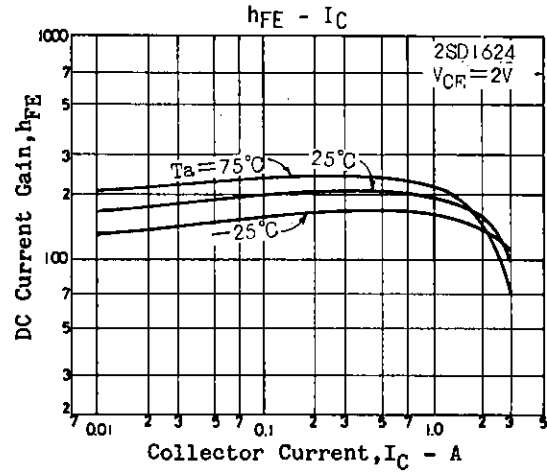
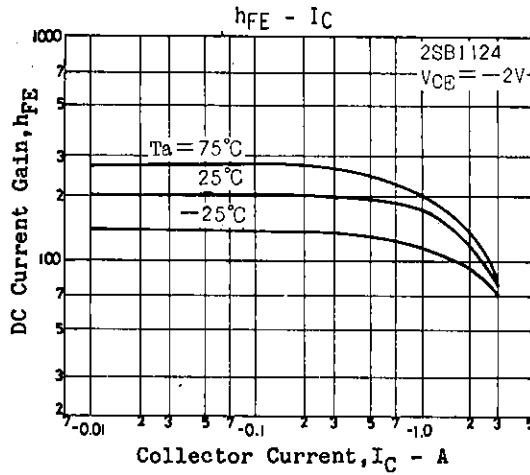
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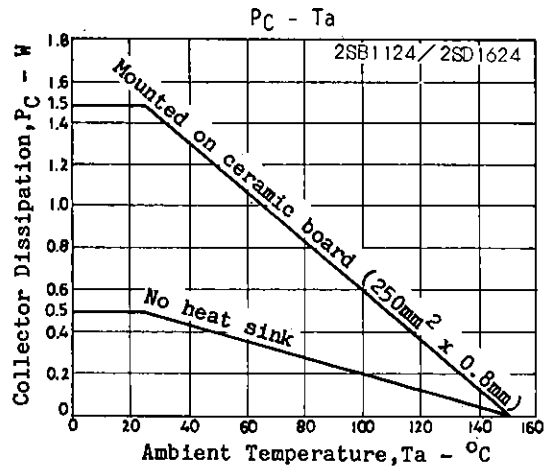
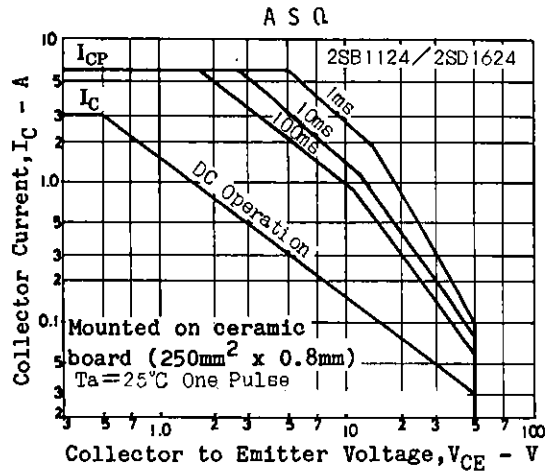
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$	(-0.35)	(-0.7)		V
			0.19	0.5		V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$	(-0.94)	(-1.2)		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)	60		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)	50		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)	6		V
Turn-on Time	t_{on}	See specified Test Circuit.	(70)			ns
		"	70			ns
Storage Time	t_{stg}	"	(450)			ns
		"	650			ns
Fall Time	t_f	"	(35)			ns
		"	35			ns



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