

SANYO

No.2113B

2SB1202/2SD1802

PNP/NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

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

Features

- Adoption of FBET, MBIT processes
- Large current capacity and wide ASO
- Low collector-to-emitter saturation voltage
- Fast switching speed
- Small and slim package making it easy to make 2SB1202/2SD1802-used sets smaller

(): 2SB1202

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	1	W
		15	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 55 to + 150	$^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40\text{V}, I_E = 0$			(-)1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)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}	$V_{CE} = (-)10\text{V}, f = 1\text{MHz}$		(39)25		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2\text{A}, I_B = (-)100\text{mA}$		0.19	0.5	V
				(- 0.35)	(- 0.7)	

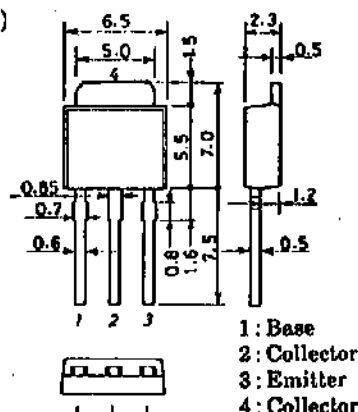
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*: The 2SB1202/2SD1802 are classified by 100mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400	280	U	560
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Package Dimensions 2045B

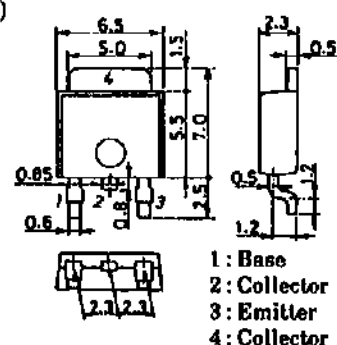
(unit : mm)



SANYO: TP

Package Dimensions 2044B

(unit : mm)



SANYO: TP-FA

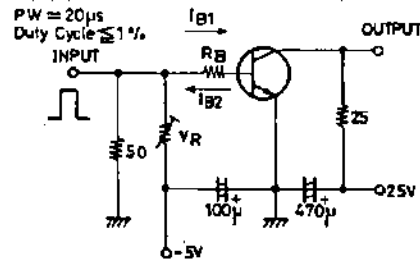
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TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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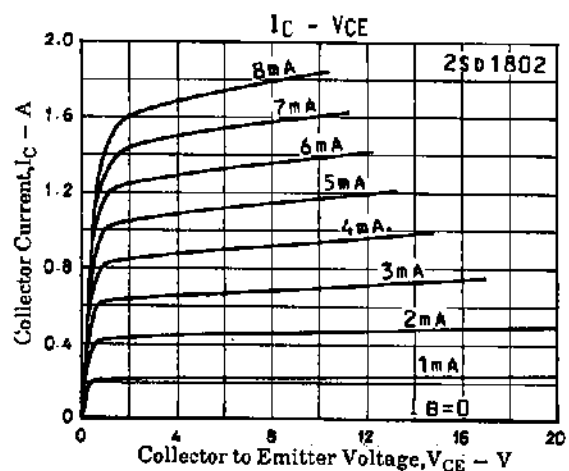
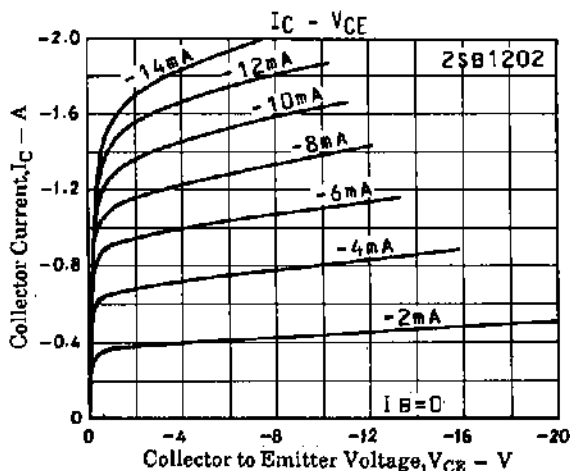
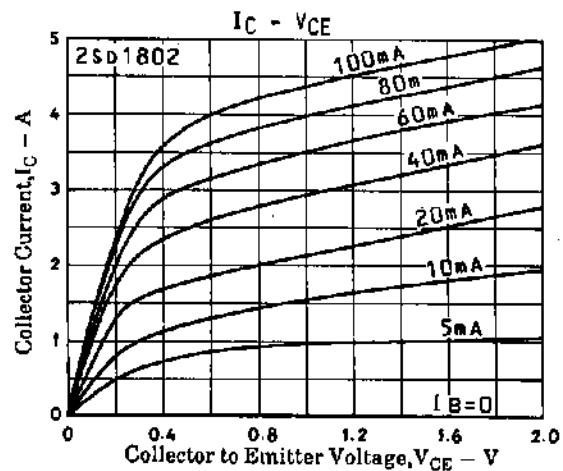
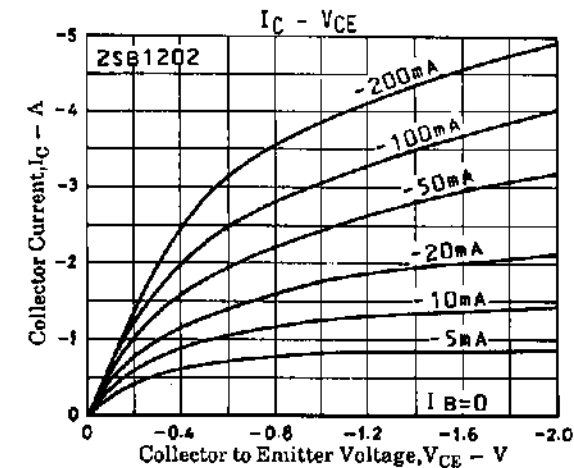
			min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2A, I_B = (-)100mA$		(-)0.94	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu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

Switching Time Test Circuit

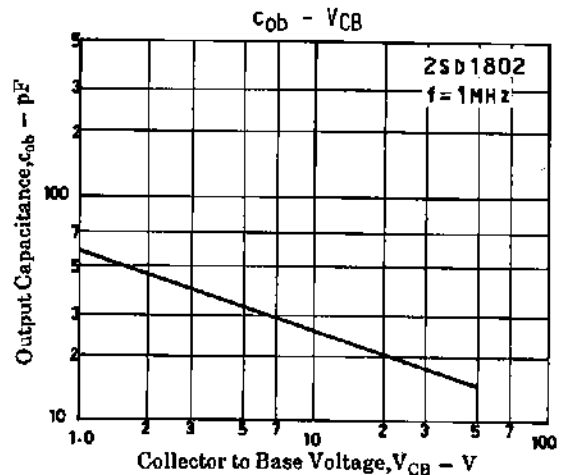
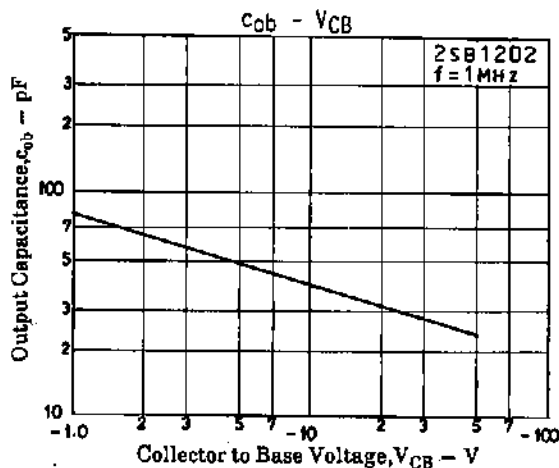
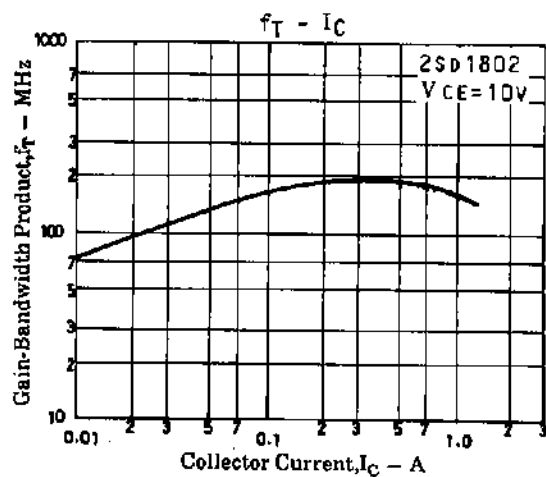
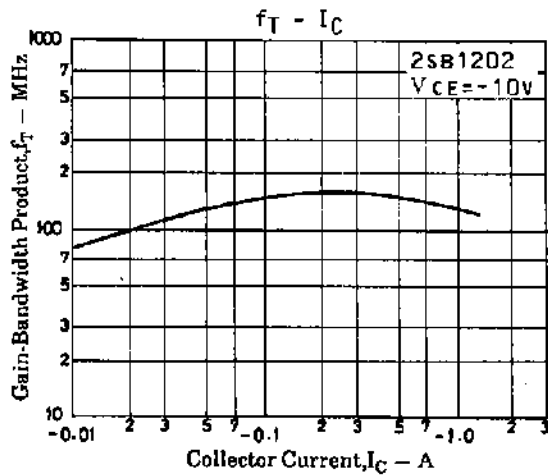
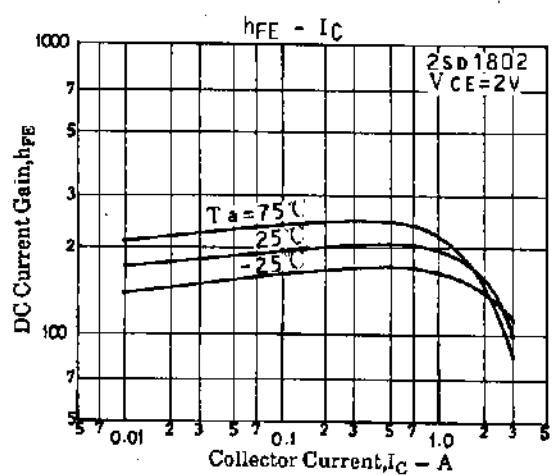
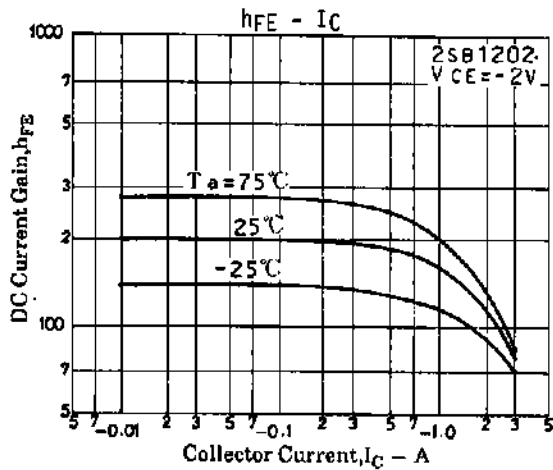
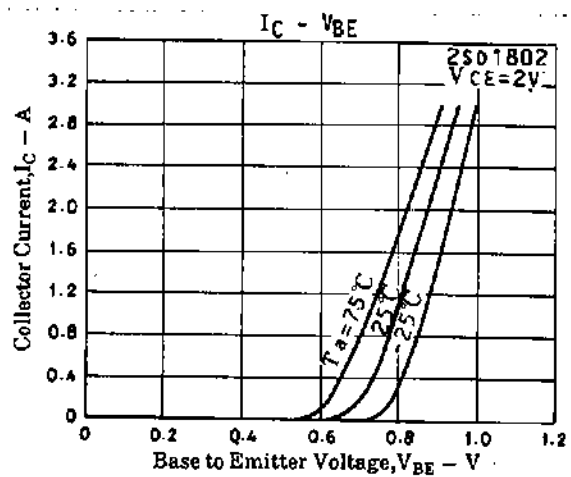
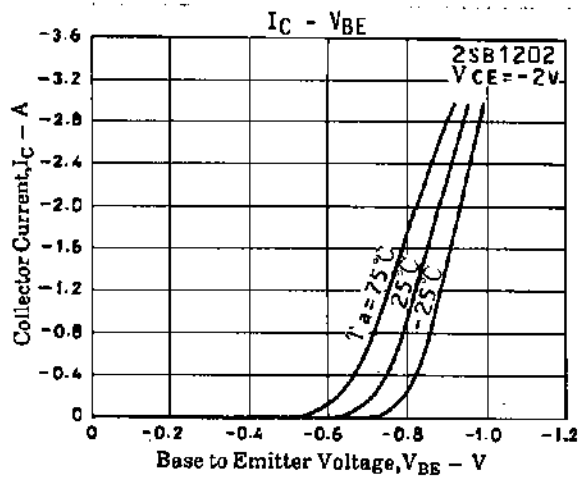


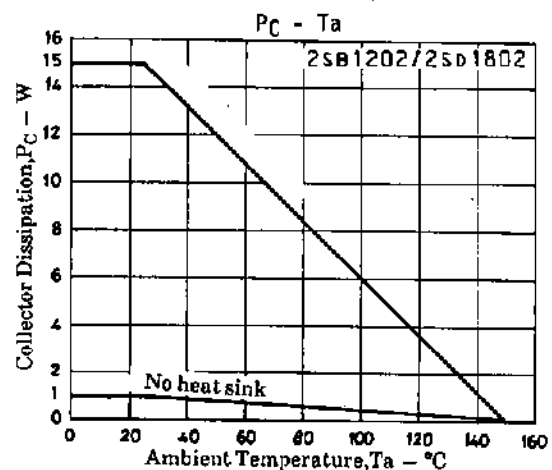
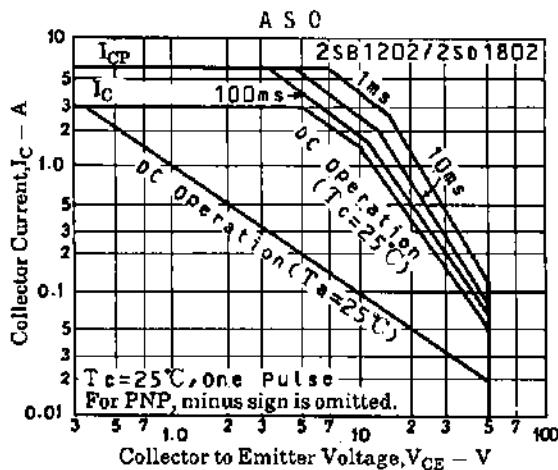
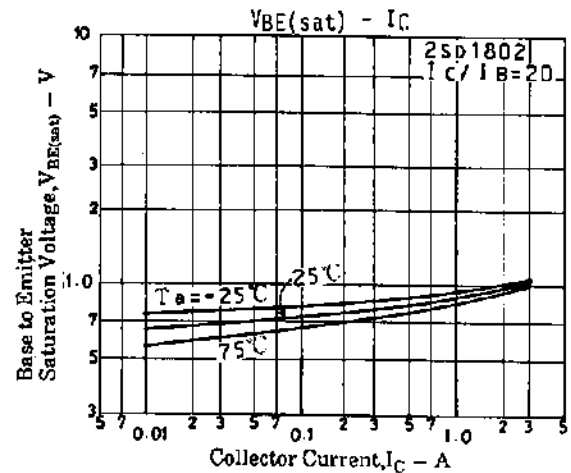
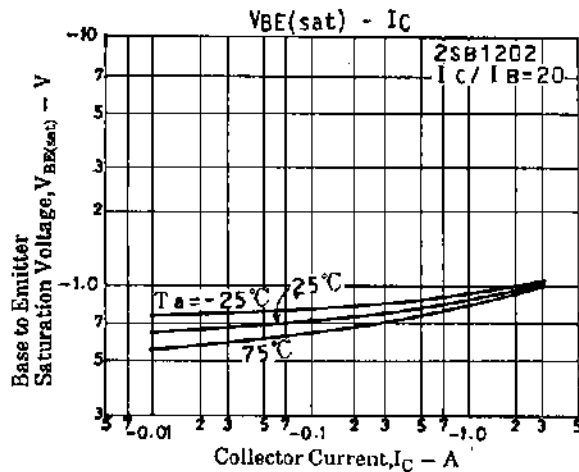
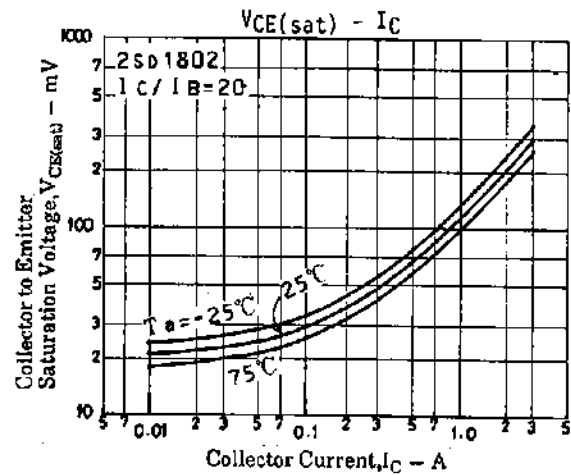
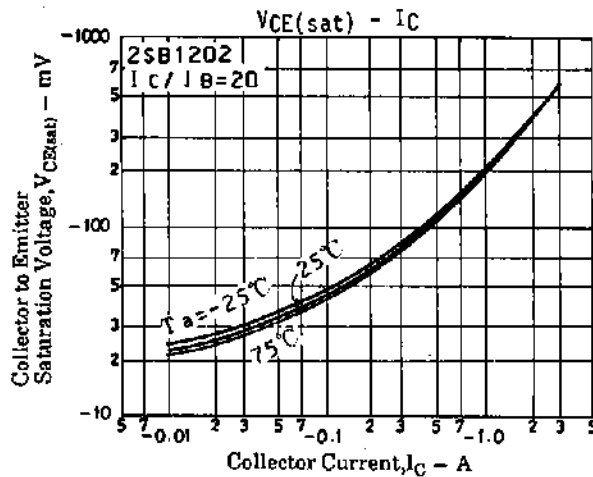
$I_C = 10 I_{B1} = -10 I_{B2} = 1A$
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω , Capacitance : F)



2SB1202/2SD1802





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