

<b>SANYO</b>	No.2113B	<b>2SB1202/2SD1802</b>
		PNP/NPN Epitaxial Planar Silicon Transistors <b>High-Current Switching Applications</b>

**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 Ta = 25°C**

			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>	(-)6	V
Collector Current	I <sub>C</sub>	(-)3	A
Collector Current(Pulse)	I <sub>CP</sub>	(-)6	A
Collector Dissipation	P <sub>C</sub>	1	W
		15	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

T<sub>c</sub> = 25°C

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

			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = (-)40V, I <sub>E</sub> = 0			(-)1	μA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> = (-)4V, I <sub>C</sub> = 0			(-)1	μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = (-)2V, I <sub>C</sub> = (-)100mA	100*		560*	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = (-)2V, I <sub>C</sub> = (-)3A	35			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = (-)10V, I <sub>C</sub> = (-)50mA		150		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CE</sub> = (-)10V, f = 1MHz		(39)25		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = (-)2A, I <sub>B</sub> = (-)100mA		0.19	0.5	V
				(-0.35)	(-0.7)	

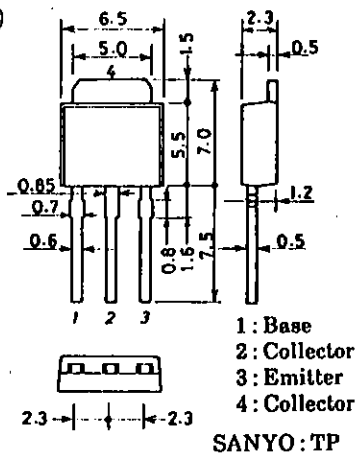
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\* : The 2SB1202/2SD1802 are classified by 100mA h<sub>FE</sub> as follows :

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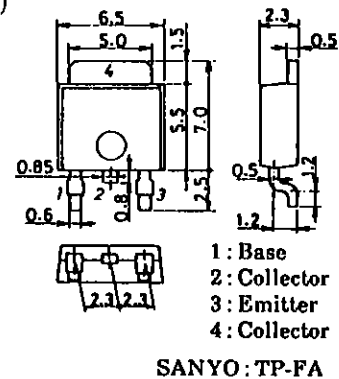
**Package Dimensions 2045B**

(unit : mm)



**Package Dimensions 2044B**

(unit : mm)

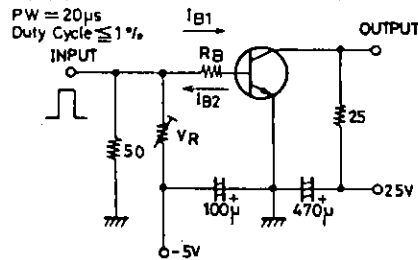


## 2SB1202/2SD1802

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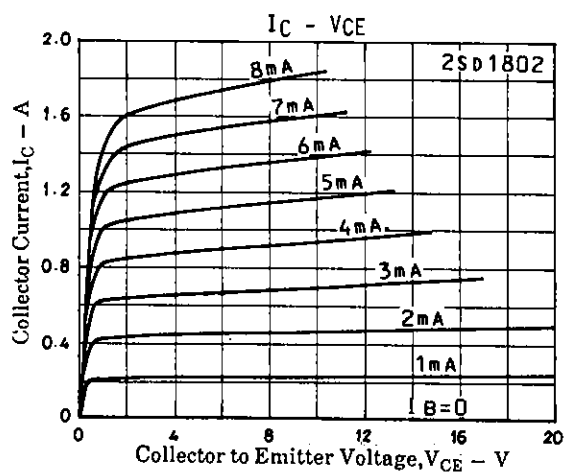
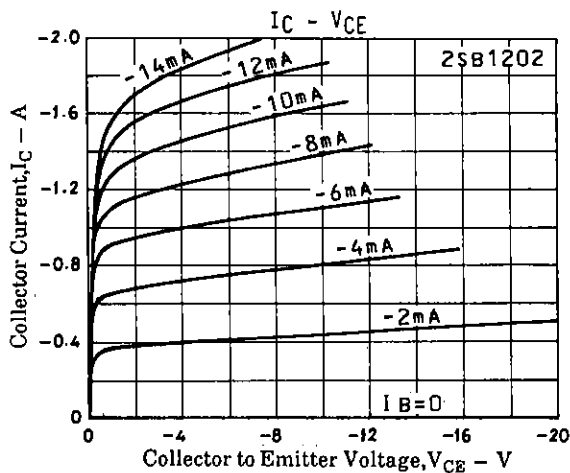
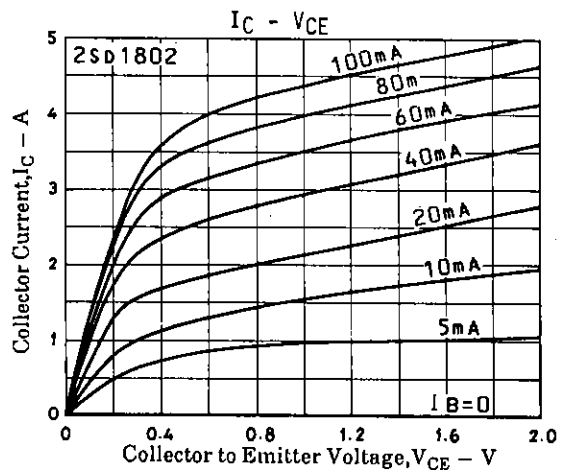
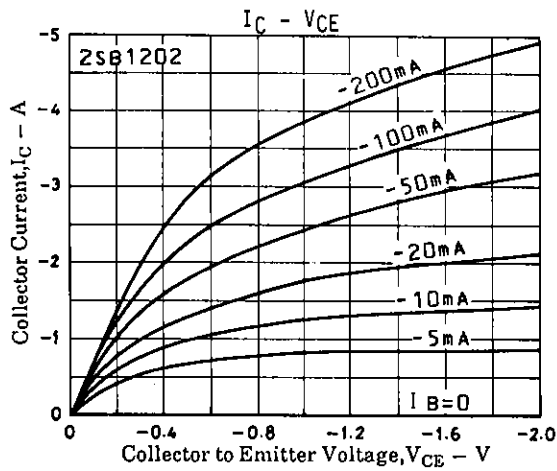
			min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2A, I_B = (-)100mA$		(-)0.94	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)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

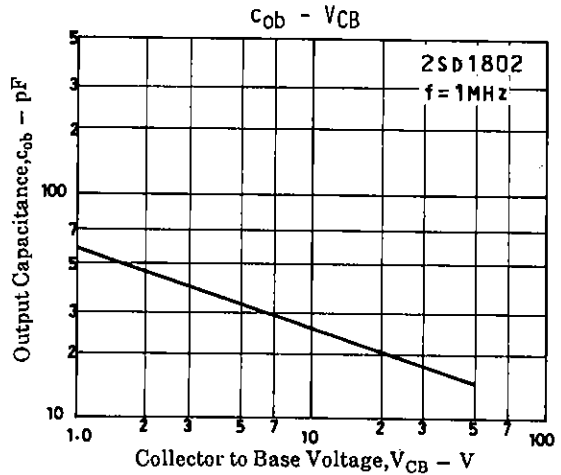
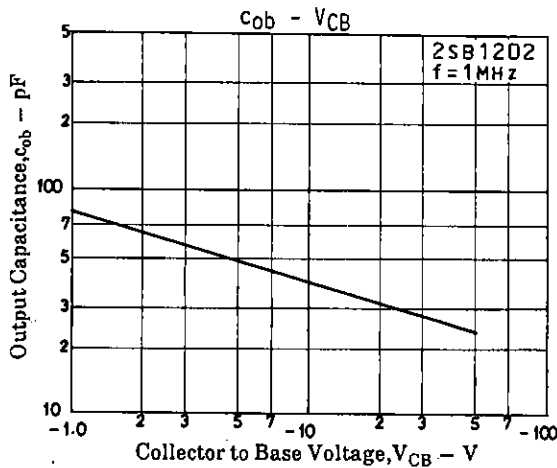
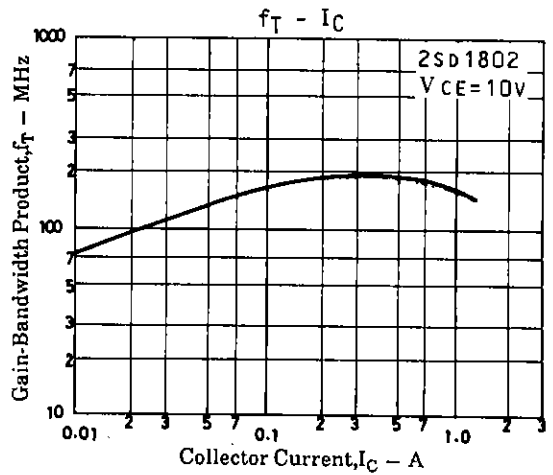
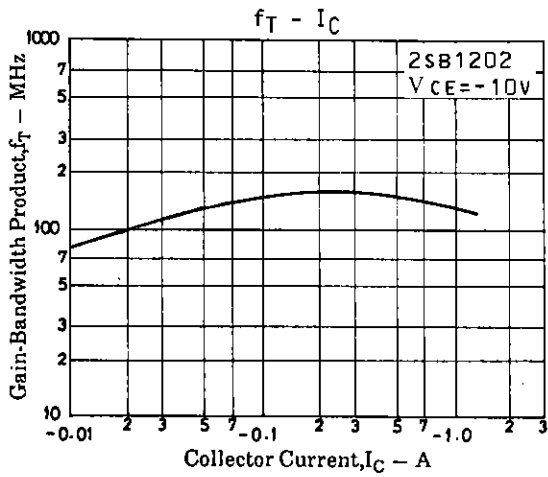
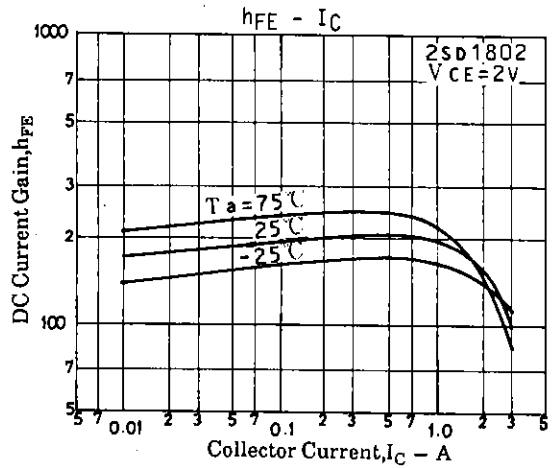
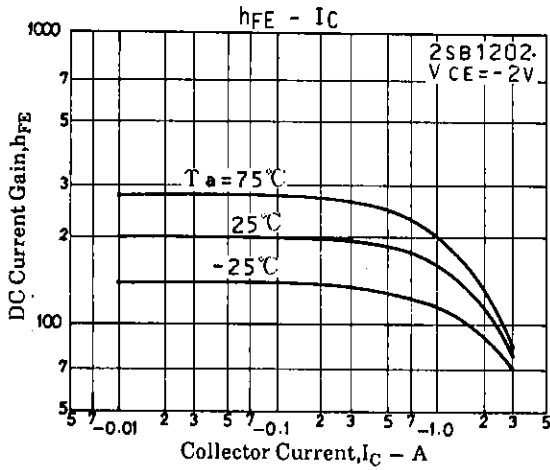
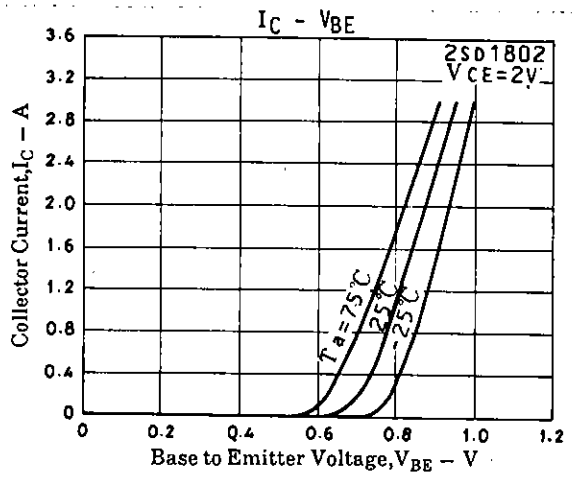
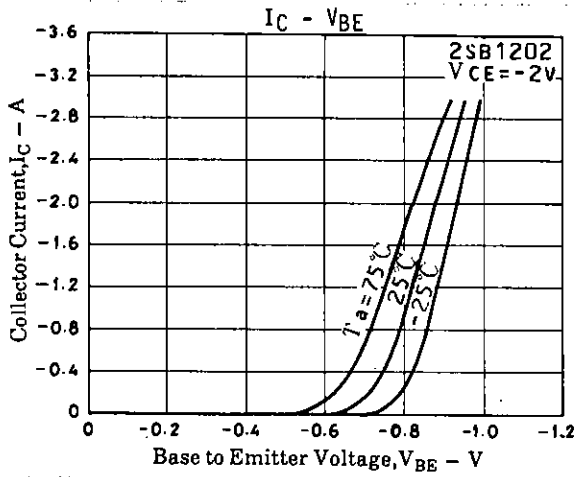


$I_C = 10 I_{B1} = -10 I_{B2} = 1A$   
(For PNP, the polarity is reversed.)

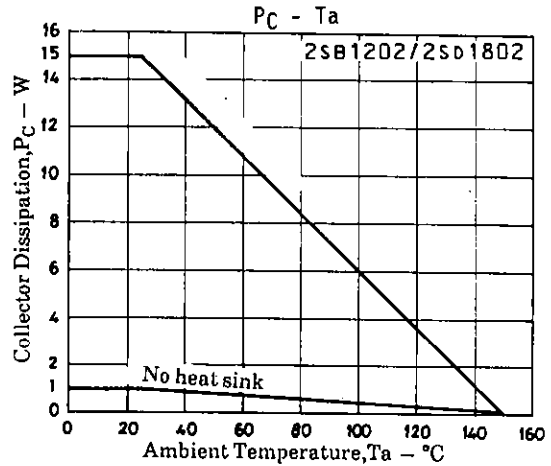
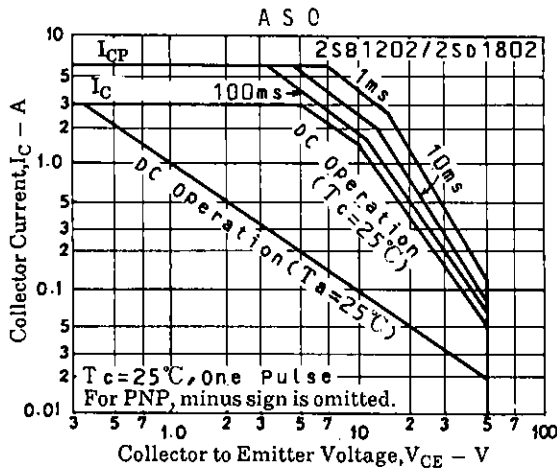
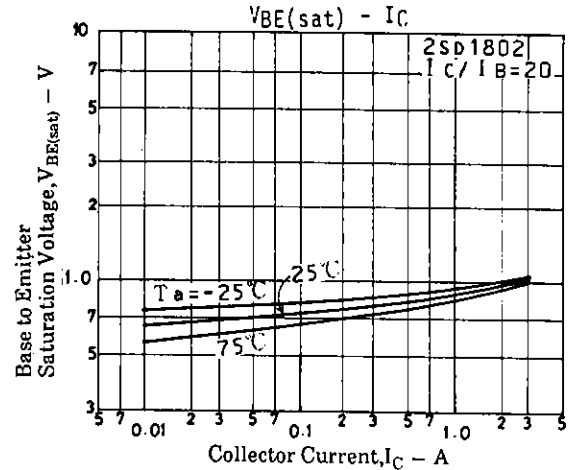
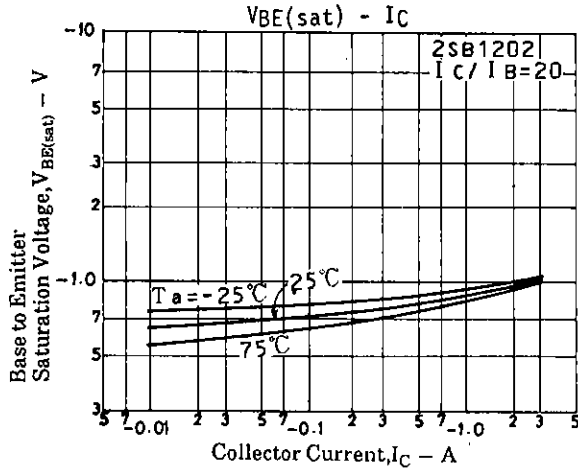
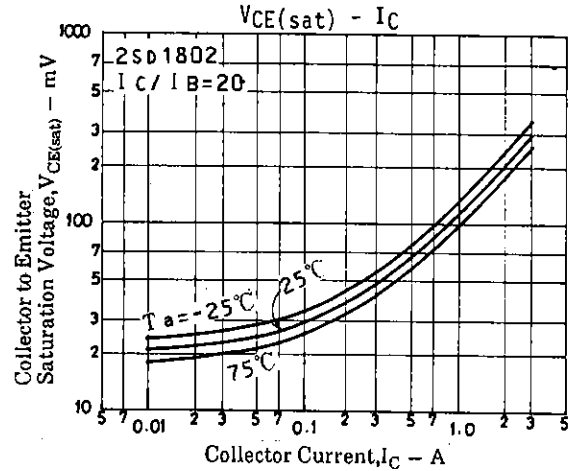
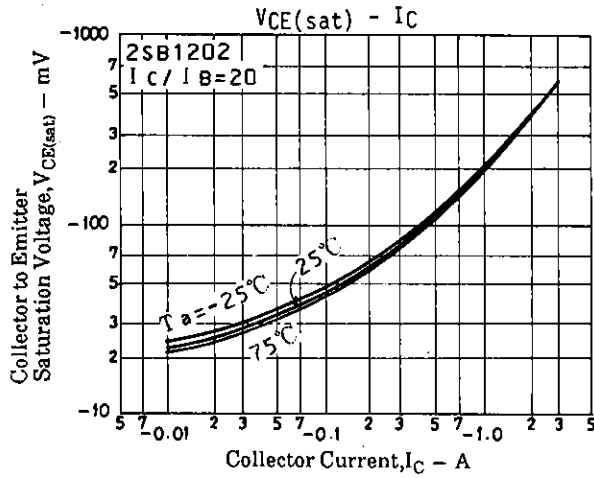
Unit (Resistance :  $\Omega$ , Capacitance : F)



2SB1202/2SD1802



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