

<b>SANYO</b>	No.2041A	<h1 style="margin: 0;">2SB1144/2SD1684</h1> <p style="margin: 0;">PNP/NPN Epitaxial Planar Silicon Transistors</p> <h2 style="margin: 0;">100V/1.5A Switching Applications</h2>
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**Features**

- Adoption of FBET and MBIT processes.
- High breakdown voltage
- Low saturation voltage.
- Plastic-covered heat sink facilitating high-density mounting.

( ) : 2SB1144

**Absolute Maximum Ratings at Ta = 25°C**

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	(-)	120 V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	(-)	100 V
Emitter-to-Base Voltage	V <sub>EBO</sub>	(-)	6 V
Collector Current	I <sub>C</sub>	(-)	1.5 A
Collector Current (Pulse)	I <sub>CP</sub>	(-)	2.0 A
Collector Dissipation	P <sub>C</sub>		1.5 W
		T <sub>c</sub> = 25°C	10 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**

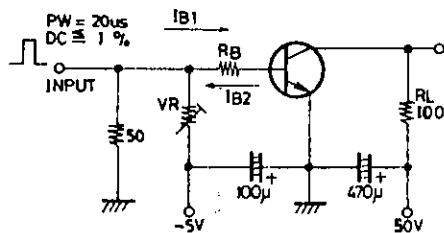
			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = (-)100V, I <sub>E</sub> = 0			(-)100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = (-)4V, I <sub>C</sub> = 0			(-)100	nA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)100mA	100※		400※	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)1A	30			
Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = (-)10V, I <sub>C</sub> = (-)50mA		(100)		MHz
				120		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = (-)10V, f = 1MHz		(18)		pF
				11		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = (-)500mA, I <sub>B</sub> = (-)50mA	(-)180		(-)500	mV
			100		300	mV
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = (-)500mA, I <sub>B</sub> = (-)50mA	(-)0.85		(-)1.2	V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = (-)10μA, I <sub>E</sub> = 0	(-)120			V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = (-)1mA, R <sub>BE</sub> = ∞	(-)100			V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = (-)10μA, I <sub>C</sub> = 0	(-)6			V

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※ : The 2SB1144/2SD1684 are classified by 100mA h<sub>FE</sub> as follows :

100 Q 200	140 S 280	200 T 400
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**Switching Time Test Circuit**

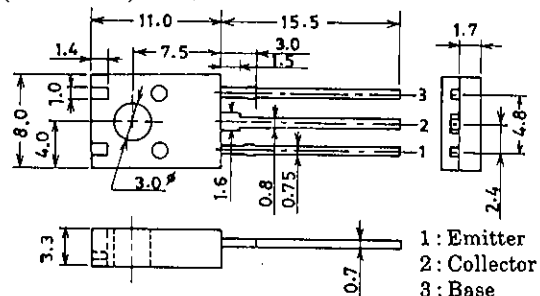


$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$

Unit (Resistance : Ω, Capacitance : F)

**Package Dimensions 2042B**

(unit : mm)



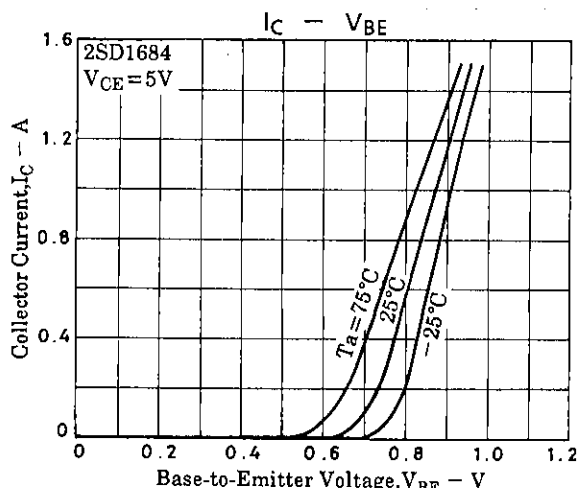
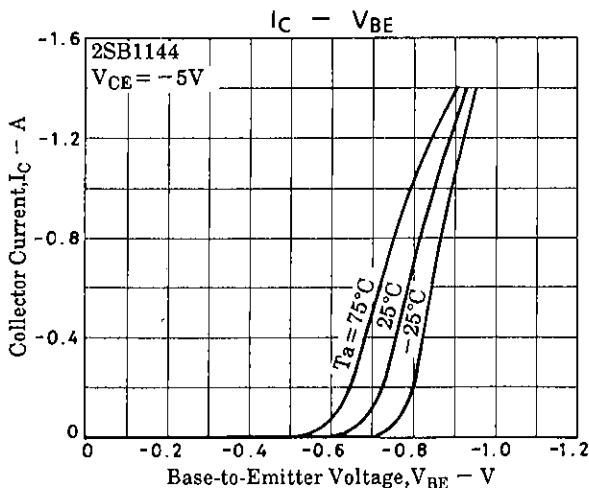
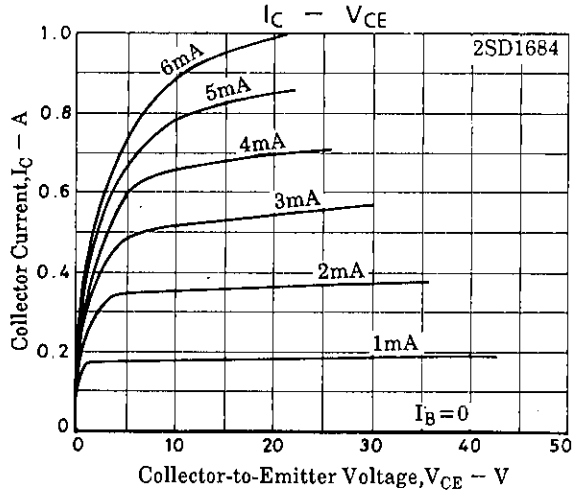
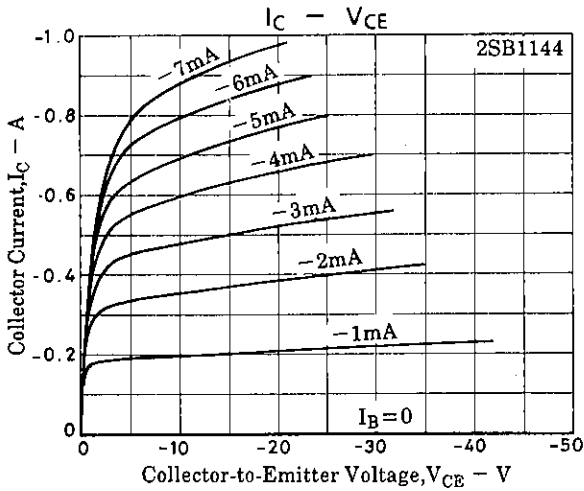
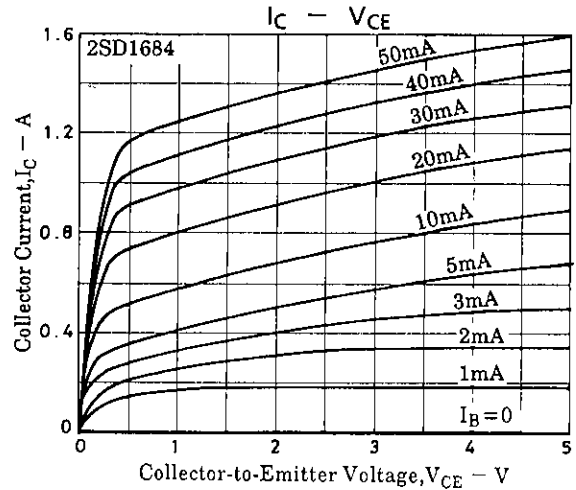
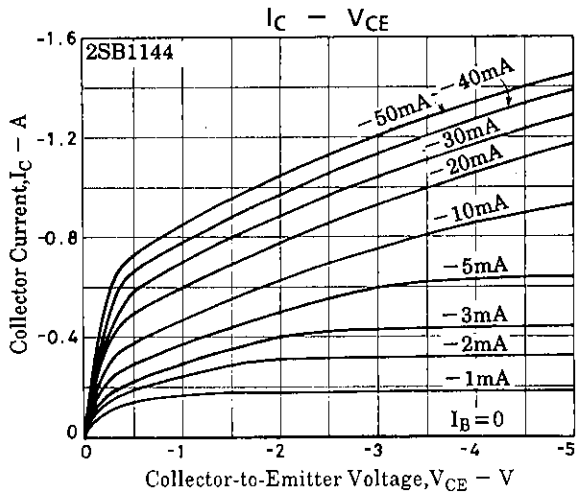
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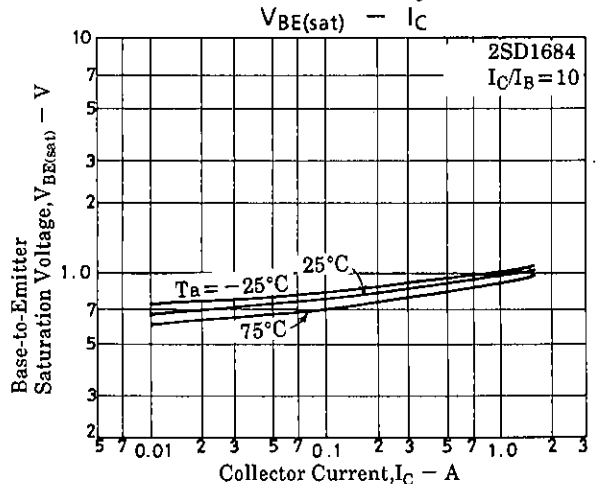
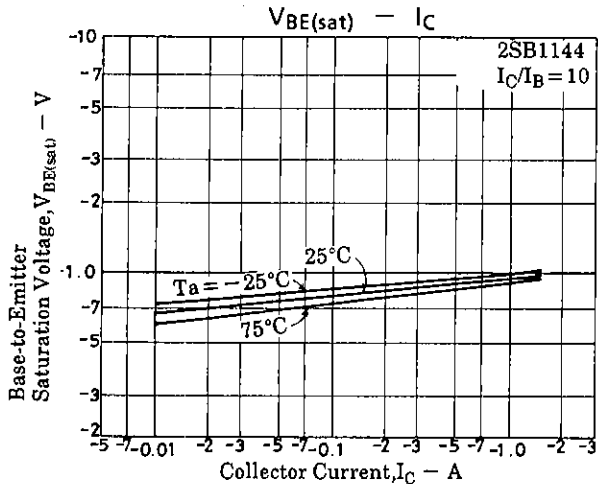
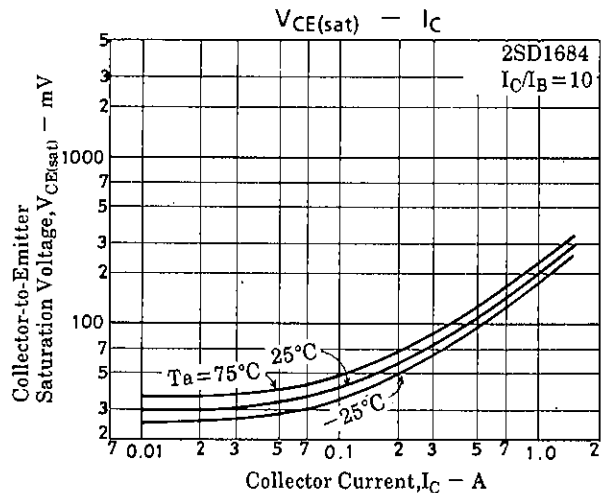
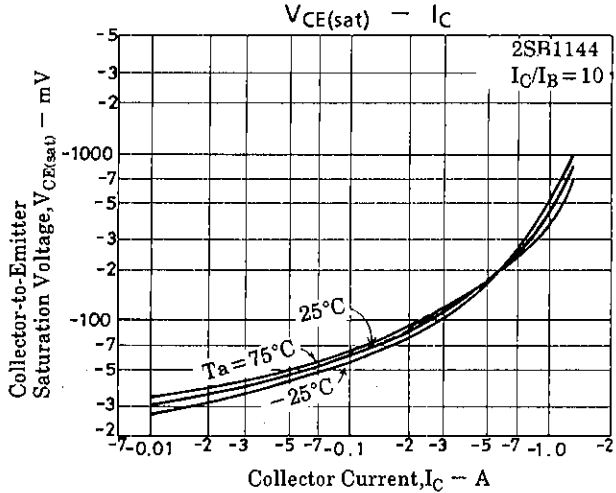
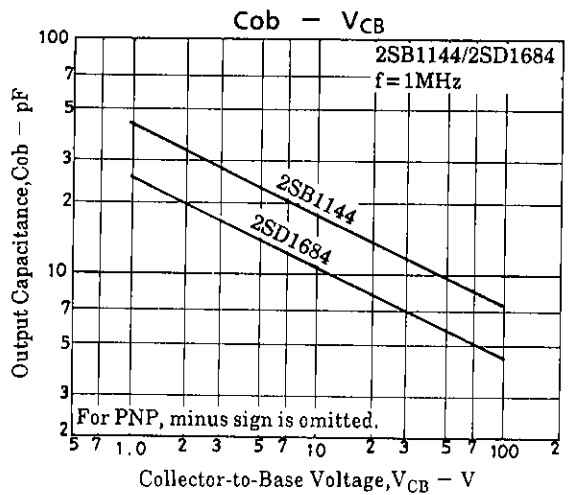
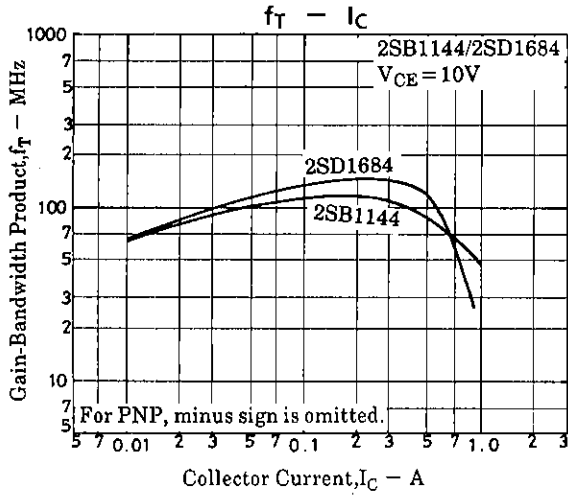
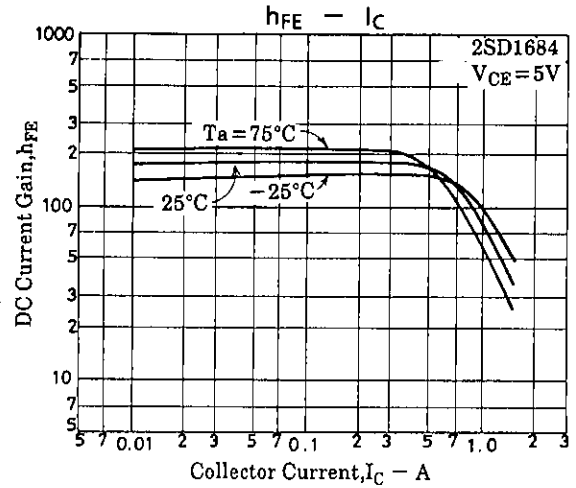
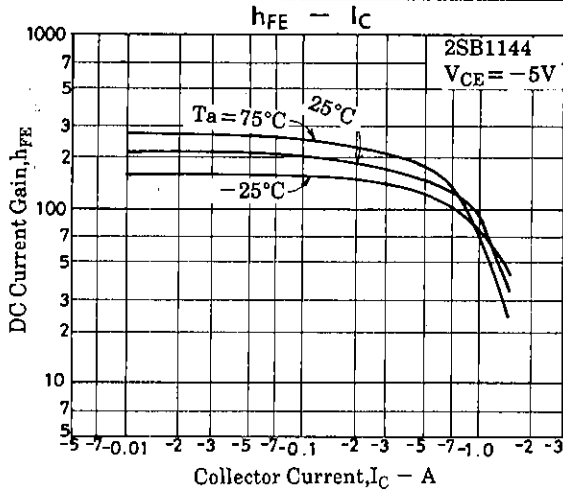
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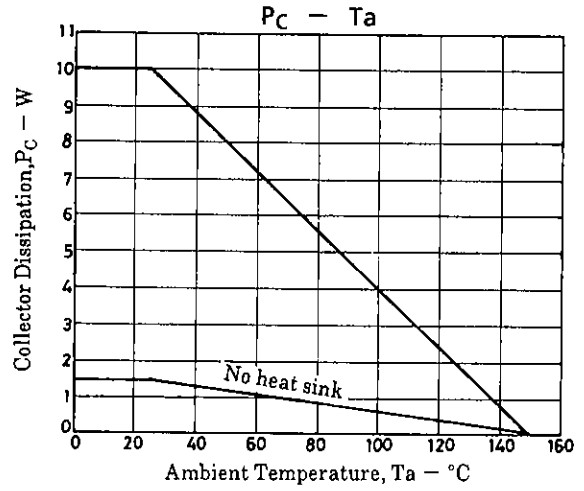
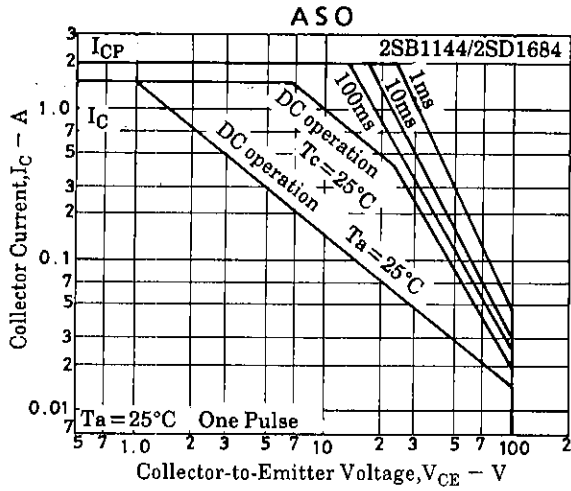
			min	typ	max	unit
Rise Time	$t_{on}$	See specified Test Circuit.		(80)		ns
				80		ns
Storage Time	$t_{stg}$	"		(750)		ns
		"		1000		ns
Fall Time	$t_f$	"		(40)		ns
		"		50		ns



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