

<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>
--------------	----------	---

**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
		10	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**

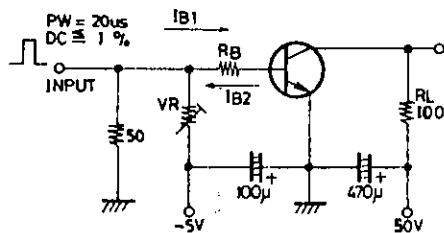
			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = (-)100V, I <sub>E</sub> = 0			(-)100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = (-)4V, I <sub>C</sub> = 0			(-)100	nA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)100mA	100*		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

Continued on next page.

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

100 Q 200	140 S 280	200 T 400
-----------	-----------	-----------

**Switching Time Test Circuit**

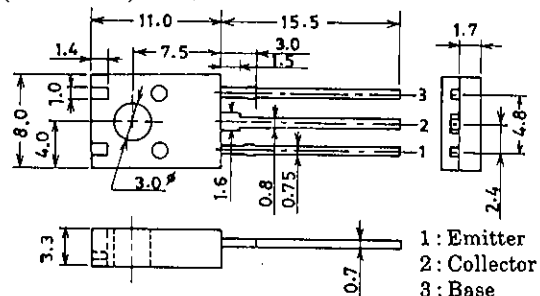


$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$

Unit (Resistance : Ω, Capacitance : F)

**Package Dimensions 2042B**

(unit : mm)

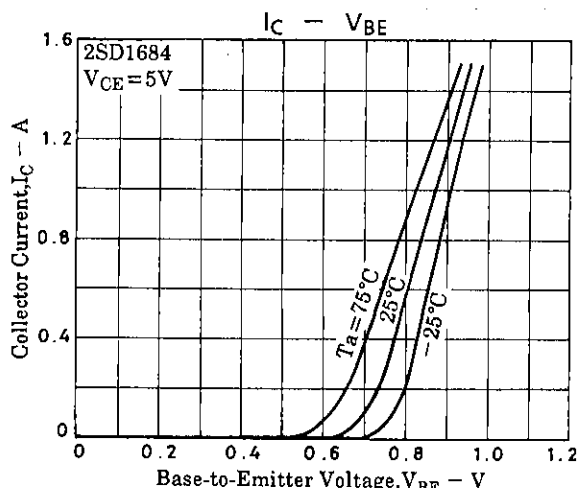
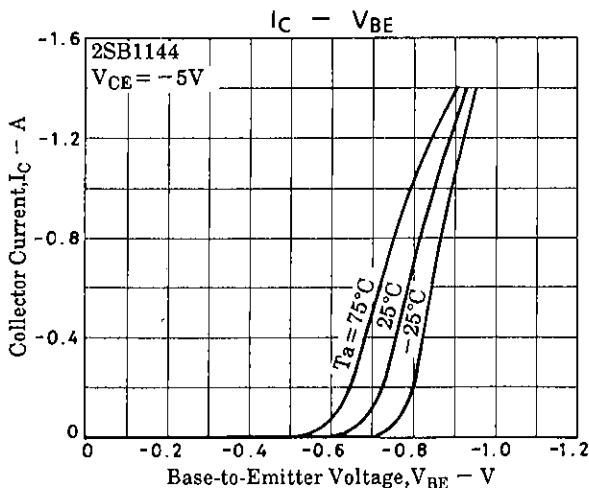
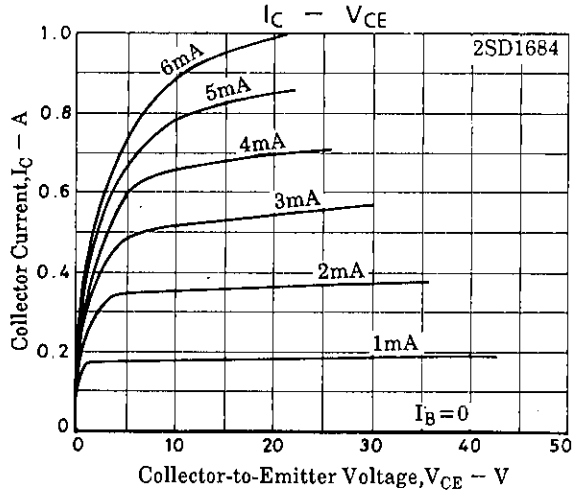
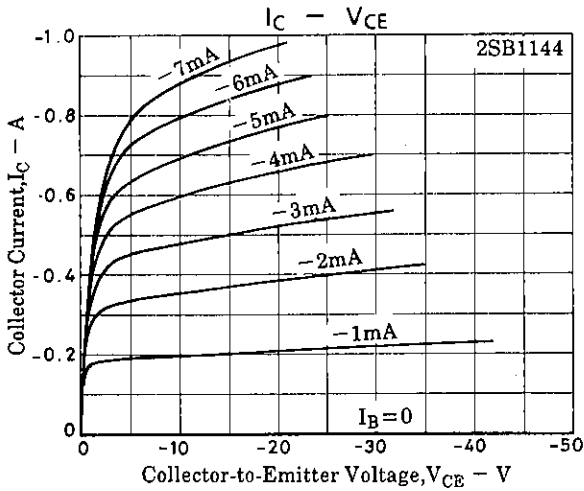
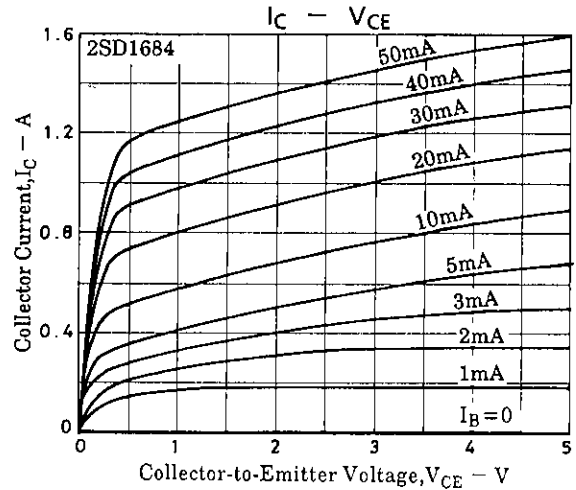
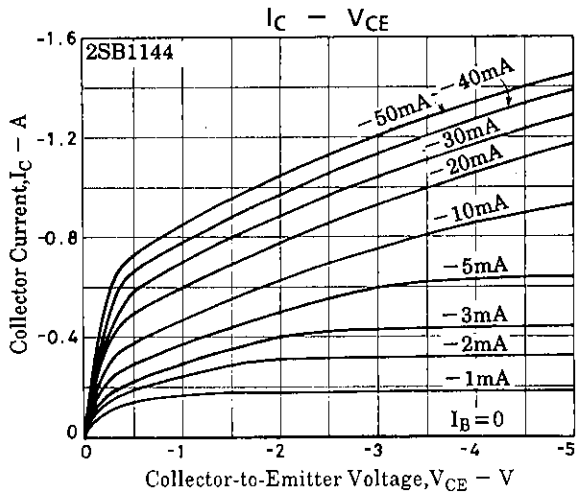


SANYO: T0126ML

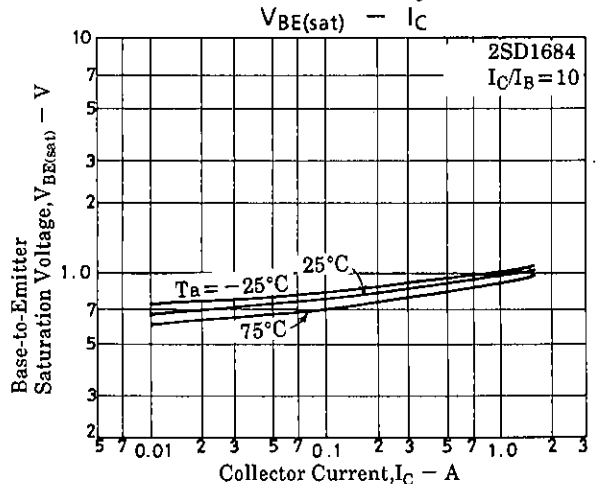
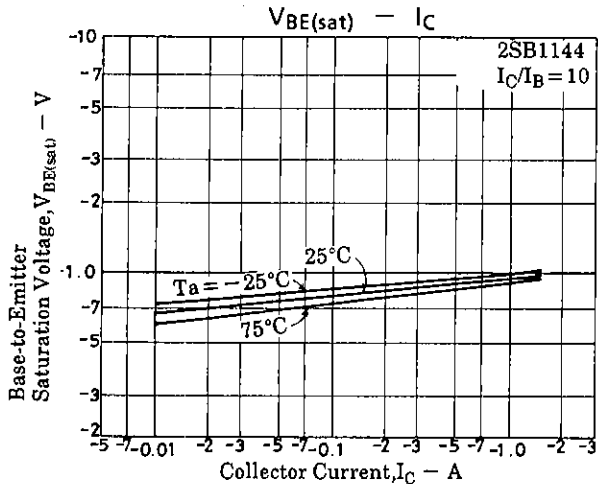
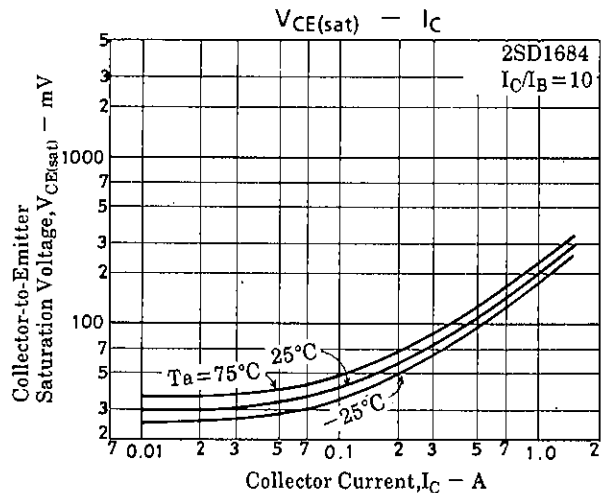
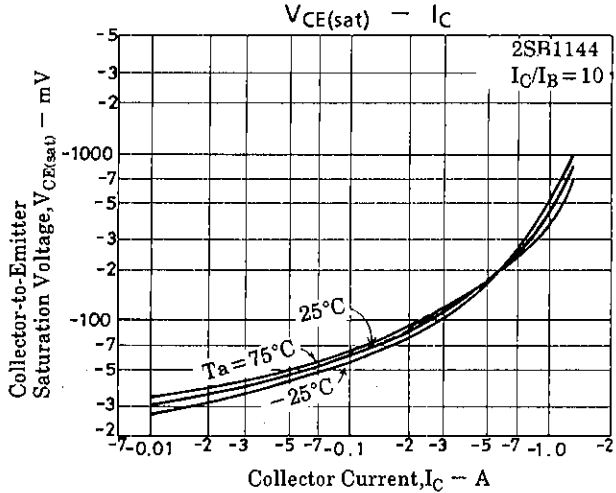
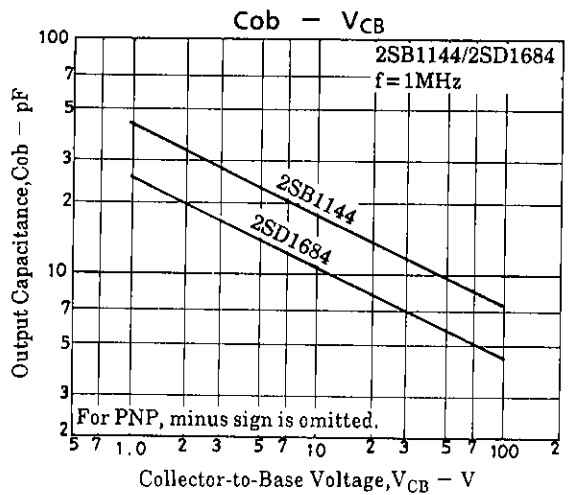
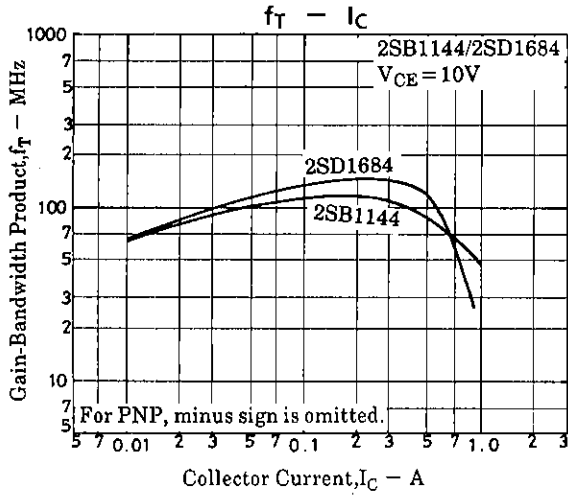
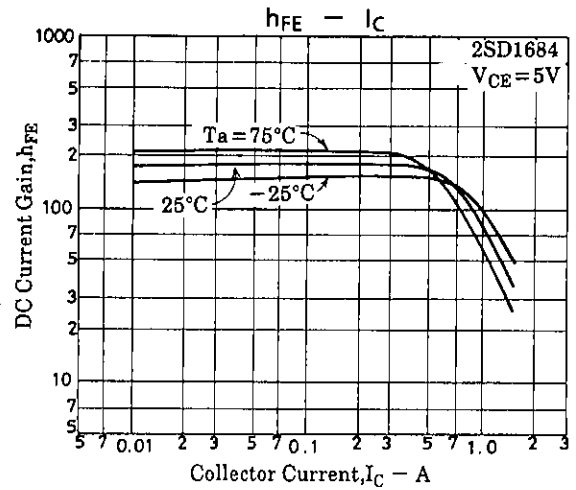
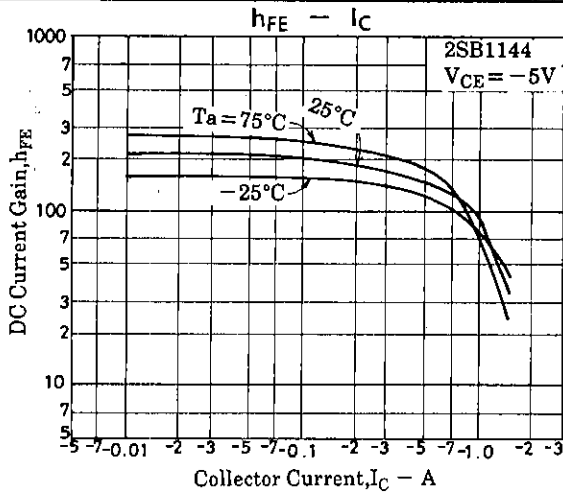
**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**  
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

Continued from preceding page.

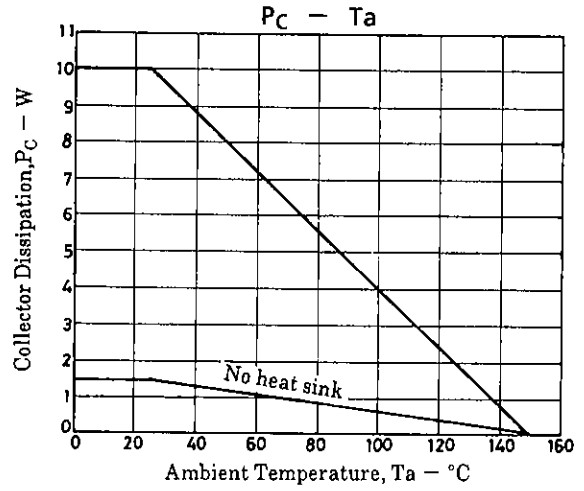
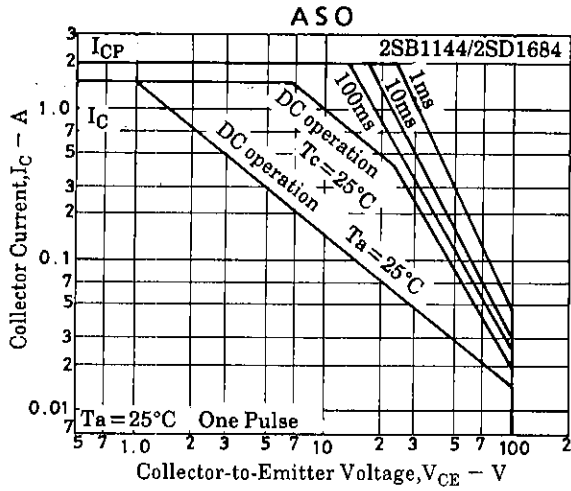
			min	typ	max	unit
Rise Time	$t_{on}$	See specified Test Circuit.		(80)		ns
				80		ns
Storage Time	$t_{stg}$	"		(750)		ns
		"		1000		ns
Fall Time	$t_f$	"		(40)		ns
		"		50		ns



2SB1144/2SD1684



2SB1144/2SD1684



■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:

- ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
- ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of January, 1996. Specifications and information herein are subject to change without notice.