

<b>SANYO</b>	No. 1727B	<b>2SB1123/2SD1623</b>
	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.
- . Low collector-to-emitter saturation voltage.
- . Large current capacity and wide ASO.
- . Fast switching speed.
- . Very small size making it easy to provide high-density, small-sized hybrid IC's.

( ): 2SB1123

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

Collector to Base Voltage	$V_{CB0}$	(-)60	V	unit
Collector to Emitter Voltage	$V_{CE0}$	(-)50	V	
Emitter to Base Voltage	$V_{EB0}$	(-)6	V	
Collector Current	$I_C$	(-)2	A	
Collector Current(Pulse)	$I_{CP}$	(-)4	A	
Collector Dissipation	$P_C$	500	mW	
	$P_C$ (Note)	1.3	W	
Junction Temperature	$T_J$	150	°C	
Storage Temperature	$T_{stg}$	-55 to +150	°C	

(Note) Mounted on ceramic board (250mm<sup>2</sup> x 0.8mm)

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

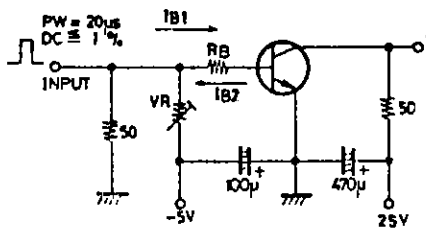
		min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)50V, I_E=0$		(-)100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4V, I_C=0$		(-)100	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=(-)2V, I_C=(-)100mA$	100*	560*	
	$h_{FE2}$	$V_{CE}=(-)2V, I_C=(-)1.5A$	40		
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10V, I_C=(-)50mA$	150		MHz
Output Capacitance	$c_{ob}$	$V_{CB}=(-)10V, f=1MHz$	(22)12		pF

Continued on next page.

\* The 2SB1123/2SD1623 are classified by 100mA  $h_{FE}$  as follows:

100	R	200	140	S	280	200	T	400	280	U	560
-----	---	-----	-----	---	-----	-----	---	-----	-----	---	-----

**Switching Time Test Circuit**



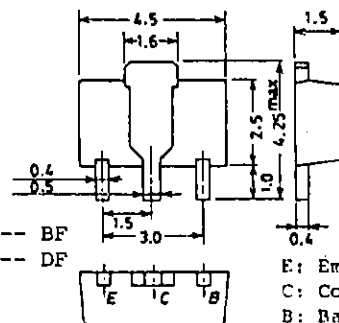
$20I_{B1} = -20I_{B2} = I_C = 500mA$

(For PNP, the polarity is reversed.)

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

**Package Dimensions 2038**

(unit:mm)



Marking: 2SB1123 -- BF  
2SD1623 -- DF

E: Emitter  
C: Collector  
B: Base

SANYO: PCP  
(Bottom View)

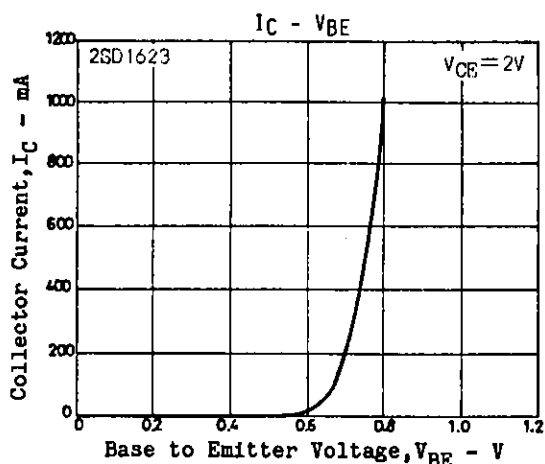
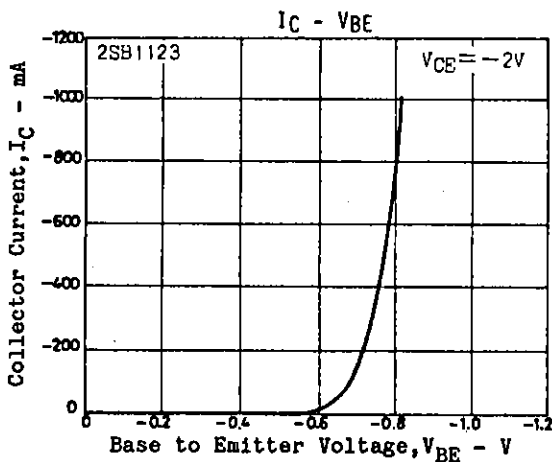
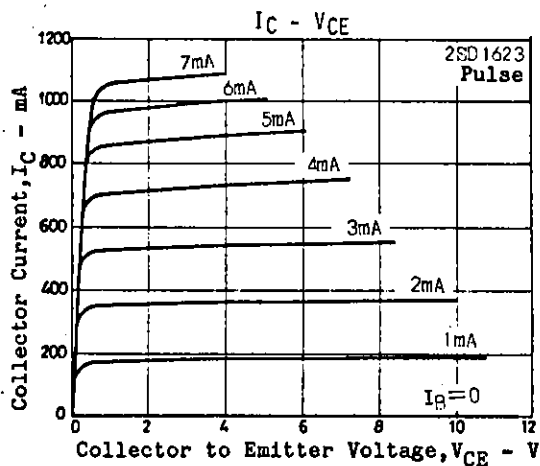
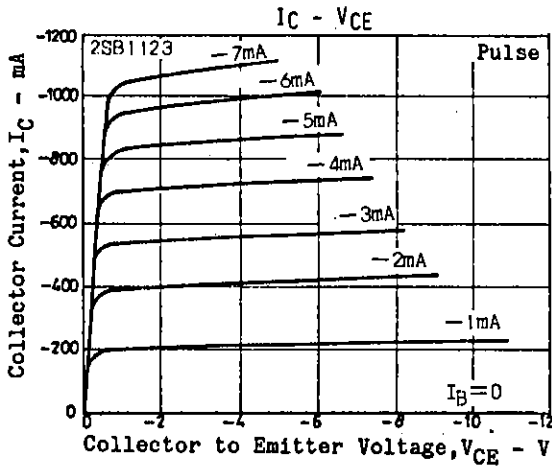
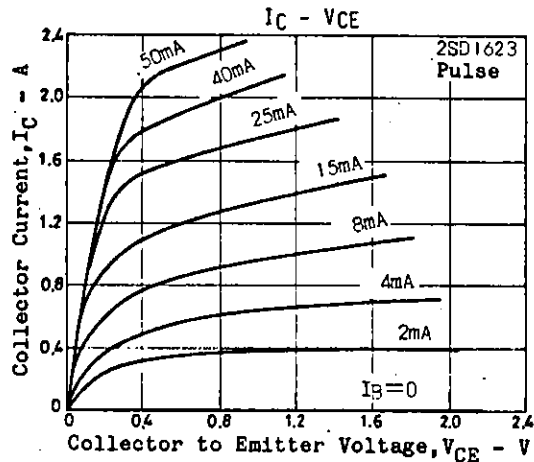
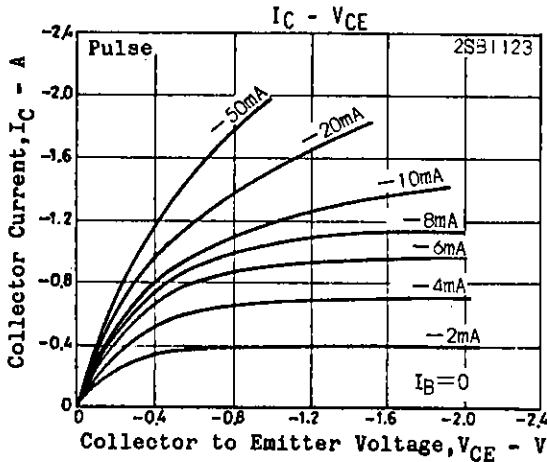
**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

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

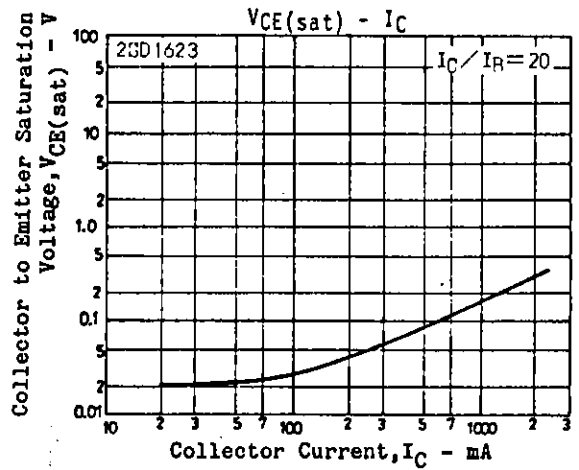
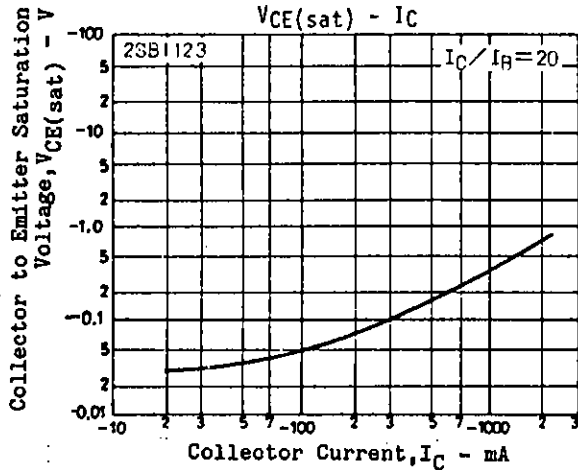
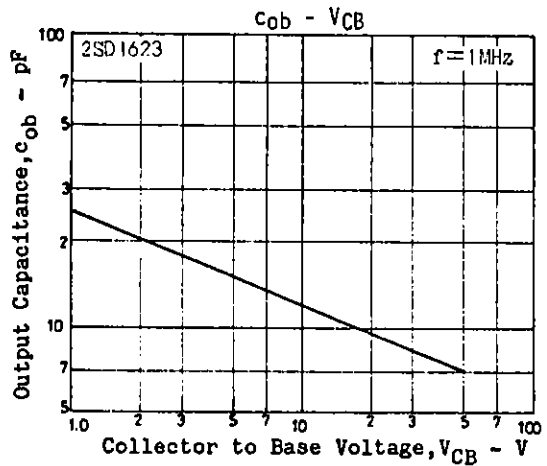
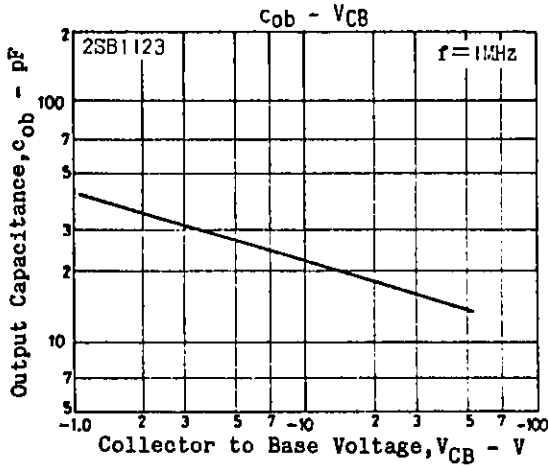
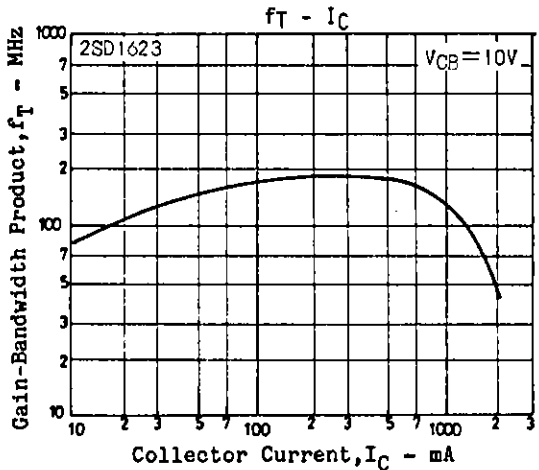
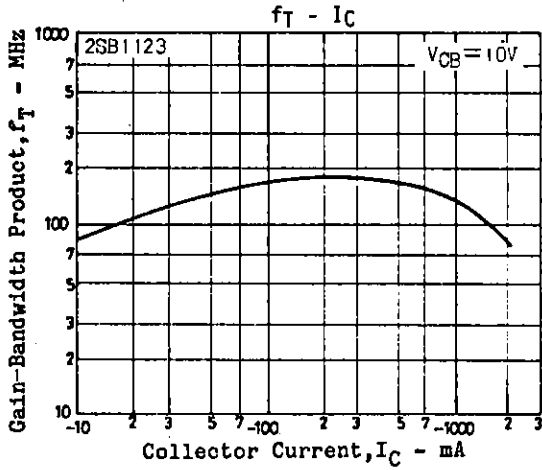
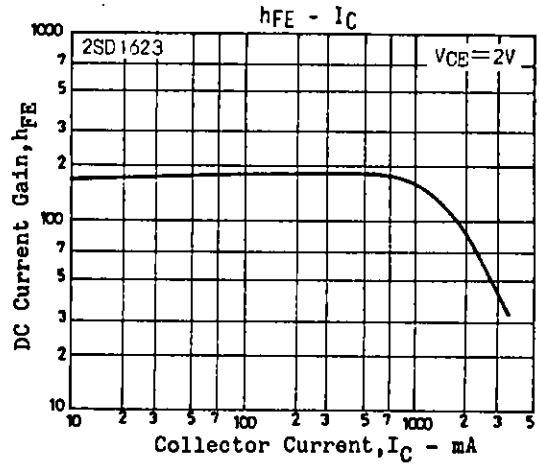
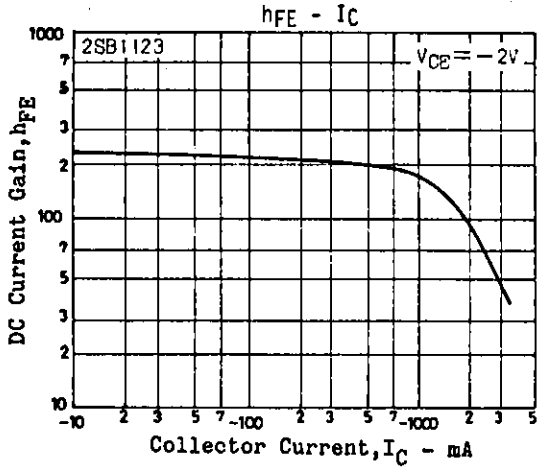
2SB1123/2SD1623

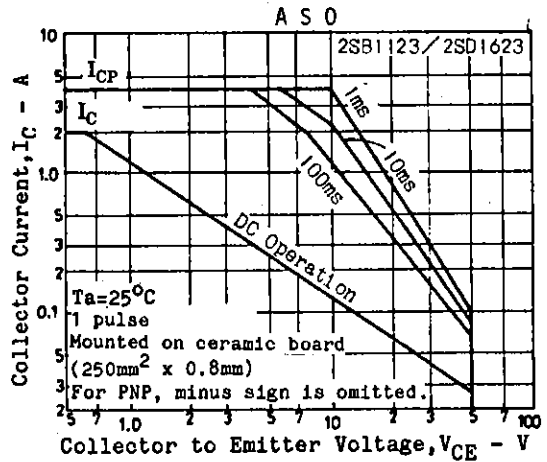
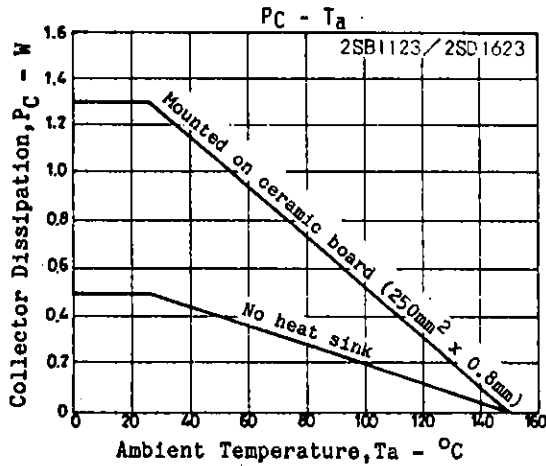
Continued from preceding page.

			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1A, I_B = (-)50mA$		(-0.3)	(-0.7)	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1A, I_B = (-)50mA$		0.15	0.4	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.	(60)	60		ns
Storage Time	$t_{stg}$	"	(450)	550		ns
Fall Time	$t_f$	"	(30)	30		ns



2SB1123/2SD1623





- 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.