SANYO

No. 1727B

2SB1123/2SD1623

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

			unit
Collector to Base Voltage	V_{CBO}	(-)60	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)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	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

(Note) Mounted on ceramic board (250mm² x 0.8mm)

Electrical Characteristics at Ta=25°C

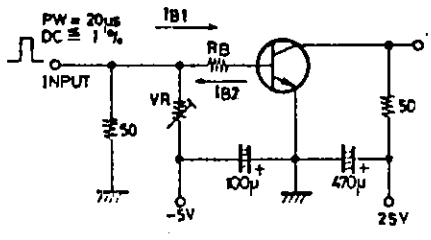
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)50V, I_E=0			(-)100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)4V, I_C=0			(-)100	nA
DC Current Gain	h_{FE1}	V_{CE}=(-)2V, I_C=(-)100mA	100*		560*	
	h_{FE2}	V_{CE}=(-)2V, I_C=(-)1.5A	40			
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)50mA		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



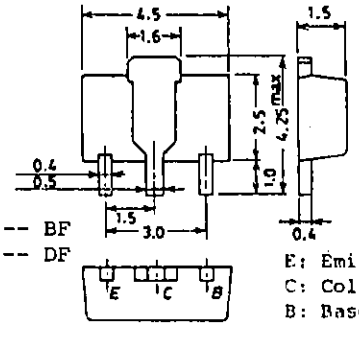
$20I_{B1} = -20I_{B2} = I_C = 500mA$

(For PNP, the polarity is reversed.)

Unit (Resistance : Ω, Capacitance : F)

Package Dimensions 2038

(unit: mm)



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

E: Emitter
C: Collector
B: Base

SANYO: PCP

(Bottom View)

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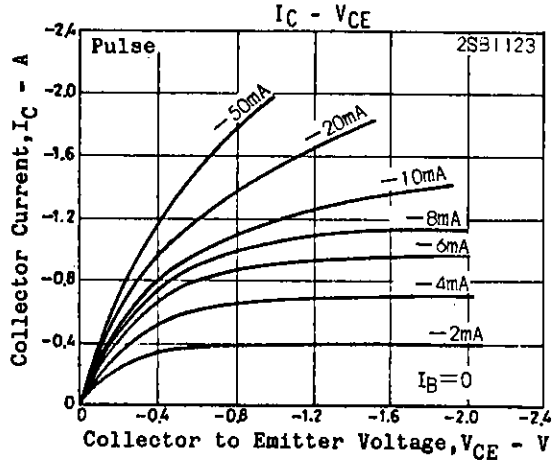
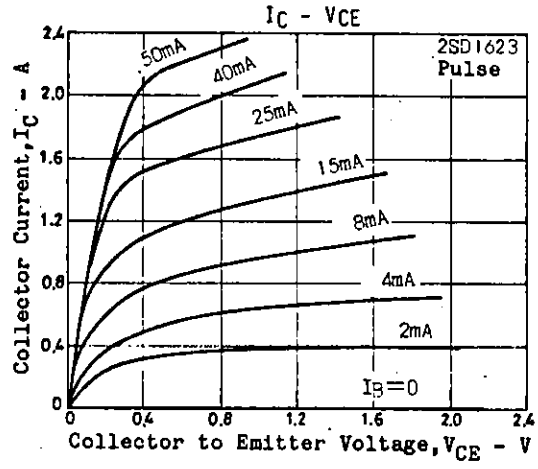
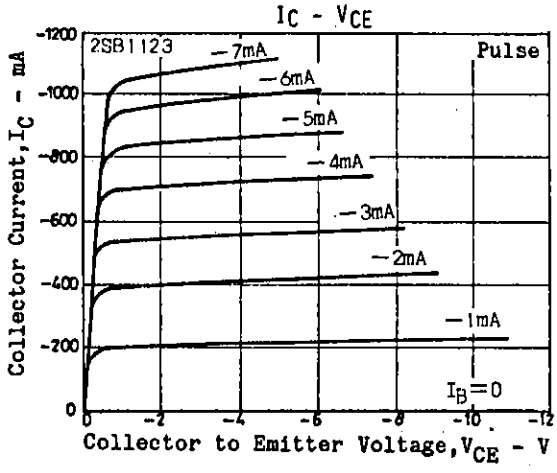
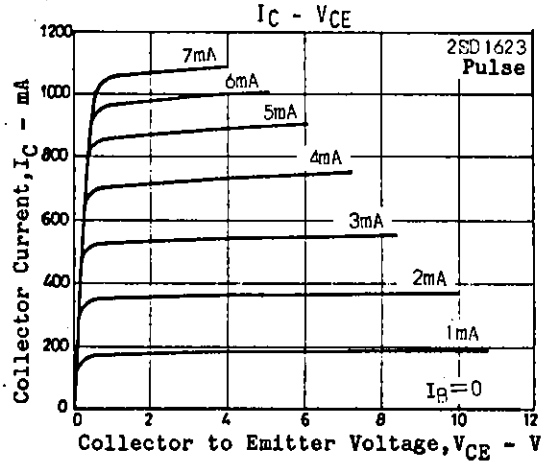
Continued from preceding page.

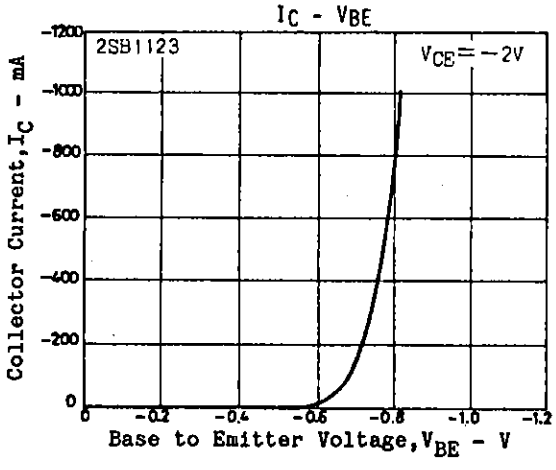
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)1A, I_B=(-)50mA		(-0.3)(-0.7) 0.15 0.4		V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=(-)1A, I_B=(-)50mA		(-)0.9(-)1.2		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)1mA, R_{BE}=∞	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)10μA, 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

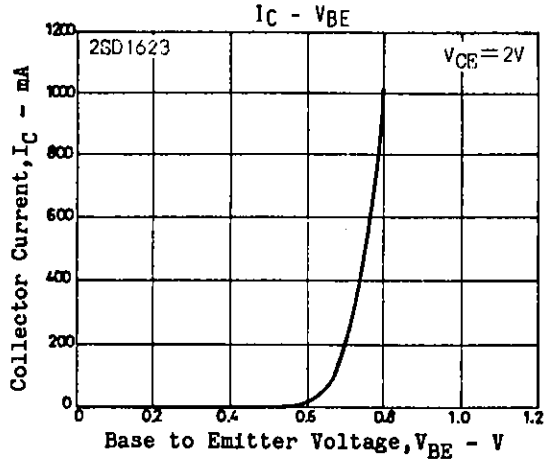


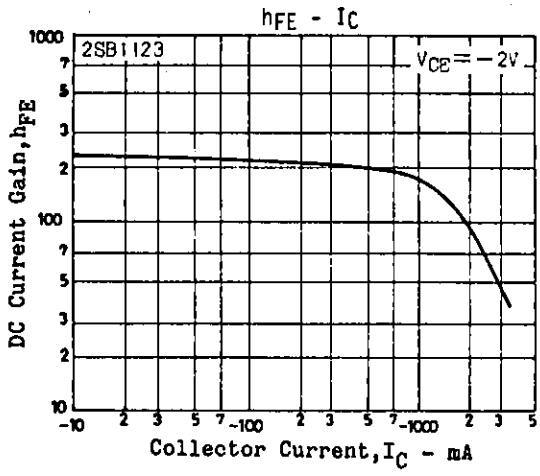


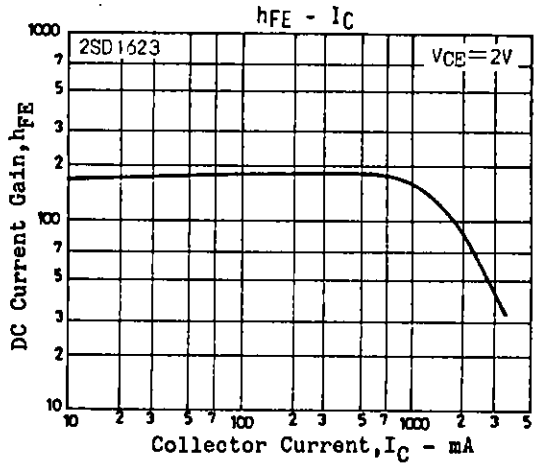


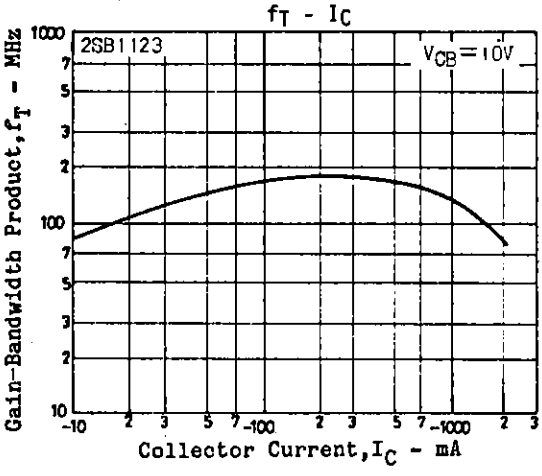


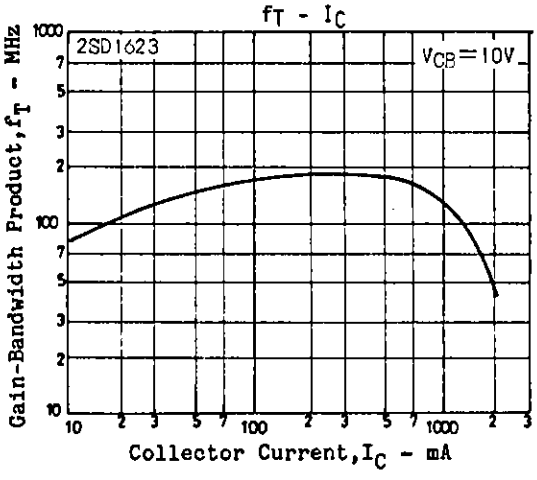


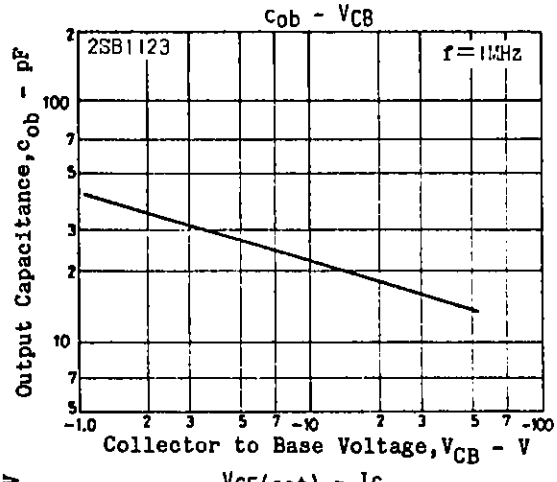


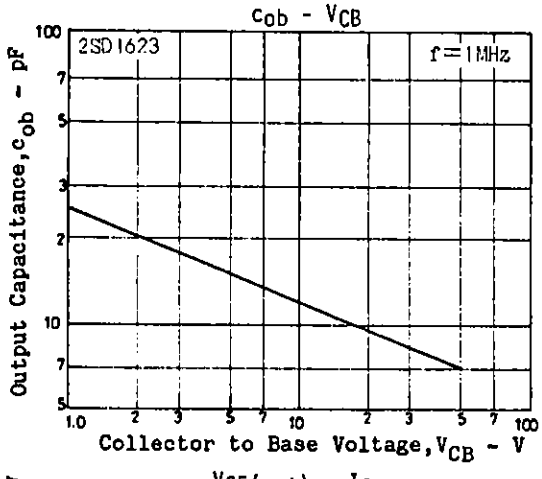

hFE - IC
2SB1123
VCE=−2V
DC Current Gain, hFE
Collector Current, IC - mA

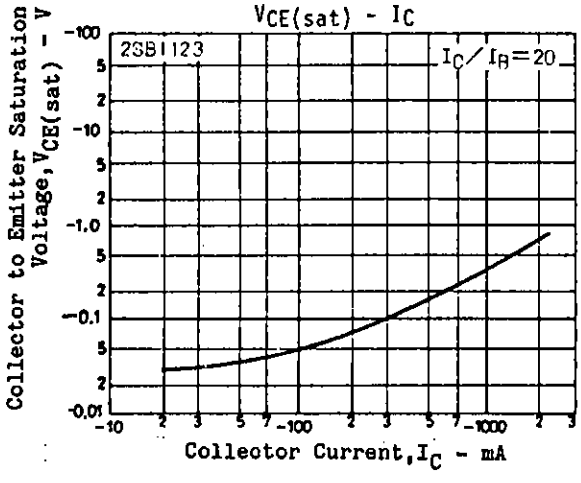

hFE - IC
2SD1623
VCE=2V
DC Current Gain, hFE
Collector Current, IC - mA

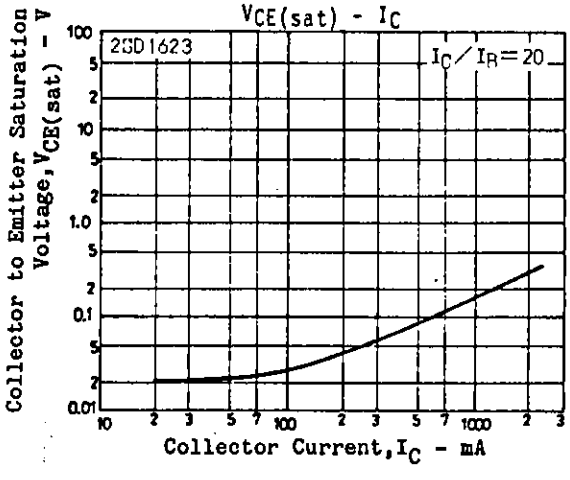

fT - IC
2SB1123
VCB=10V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

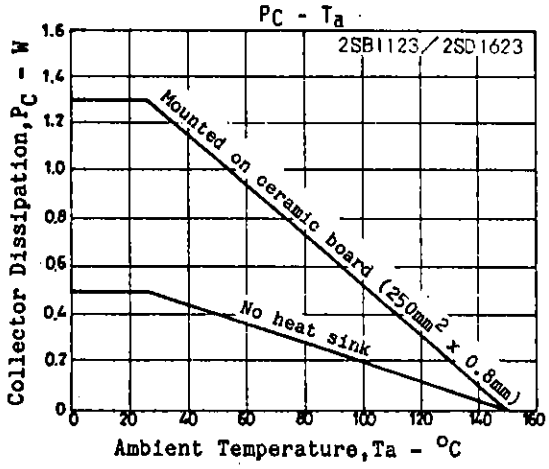

fT - IC
2SD1623
VCB=10V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

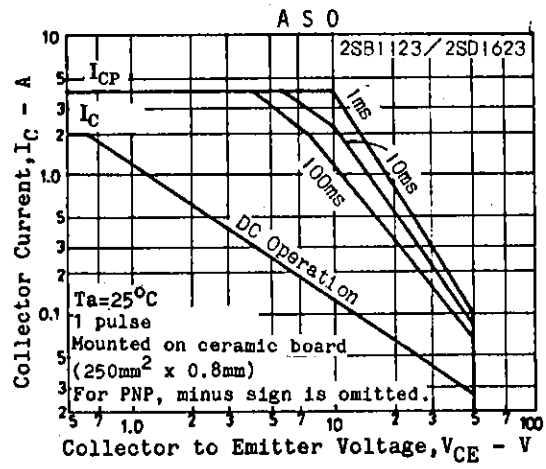

Cob - VCB
2SB1123
f=1MHz
Output Capacitance, Cob - pF
Collector to Base Voltage, VCB - V


Cob - VCB
2SD1623
f=1MHz
Output Capacitance, Cob - pF
Collector to Base Voltage, VCB - V


VCE(sat) - IC
2SB1123
IC/IB=20
Collector to Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA


VCE(sat) - IC
2SD1623
IC/IB=20
Collector to Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA





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