

<b>SANYO</b>	No.2063A	<b>2SB1143/2SD1683</b>
		PNP/NPN Epitaxial Planar Silicon Transistors <b>50V/4A Switching Applications</b>

**Applications**

- . Voltage regulators, relay drivers, lamp drivers, electrical equipment

**Features**

- . Adoption of FBET, MBIT processes
- . Low saturation voltage
- . Large current capacity and wide ASO

( ): 2SB1143

Absolute Maximum Ratings at Ta=25°C			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	(-)60	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	(-)50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	(-)6	V
Collector Current	I <sub>C</sub>	(-)4	A
Collector Current (Pulse)	I <sub>CP</sub>	(-)6	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

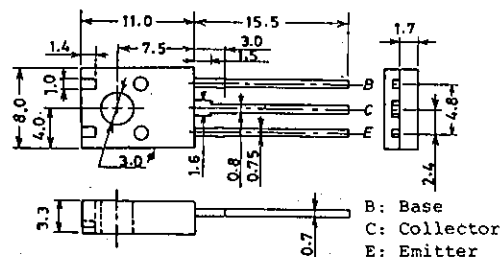
Electrical Characteristics at Ta=25°C		min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub> V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(-)1	µA
Emitter Cutoff Current	I <sub>EBO</sub> V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)1	µA
DC Current Gain	h <sub>FE</sub> (1) V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)100mA	100*		56C*	
	h <sub>FE</sub> (2) V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)3A	40			
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>CB</sub> =(-)10V, f=1MHz		(39)		pF
			25		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub> I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA		(-350)	(-700)	mV
			190	500	mV
B-E Saturation Voltage	V <sub>BE(sat)</sub> I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA		(-)0.94	(-)1.2	V

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\*: The 2SB1143/2SD1683 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 2042A**  
(unit:mm)

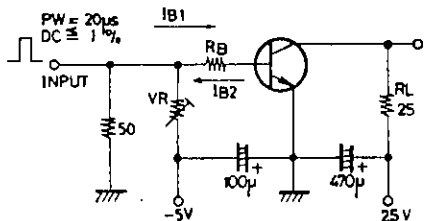


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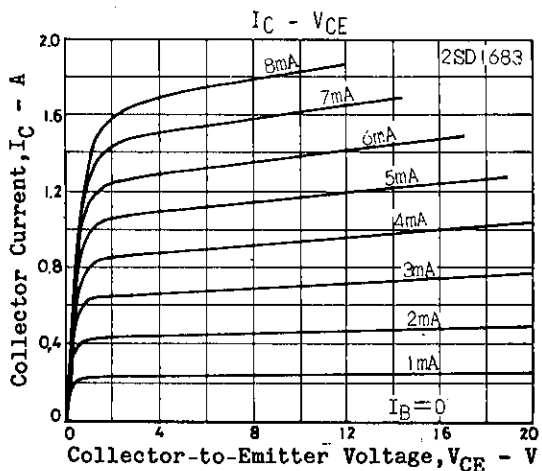
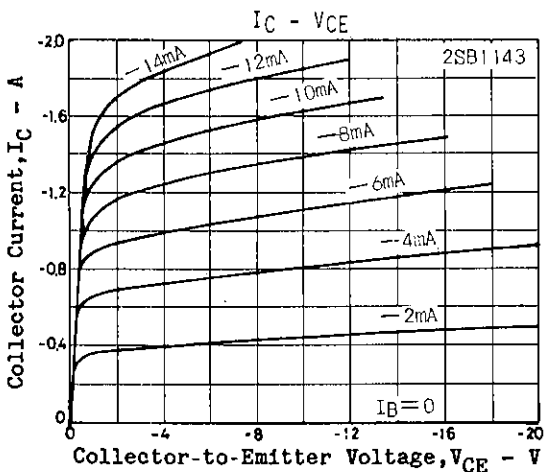
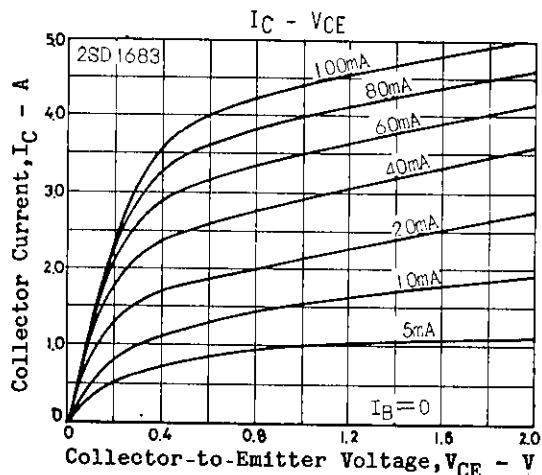
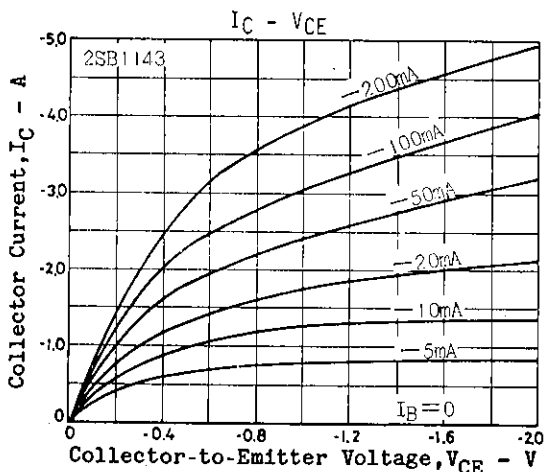
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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-) 10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-) 1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-) 10\mu A, I_C = 0$	(-)6			V
Turn-on Time	$t_{on}$	See specified Test Circuit.		(70)		ns
				70		ns
Storage Time	$t_{stg}$			(450)		ns
				650		ns
Fall Time	$t_f$			(30)		ns
				35		ns

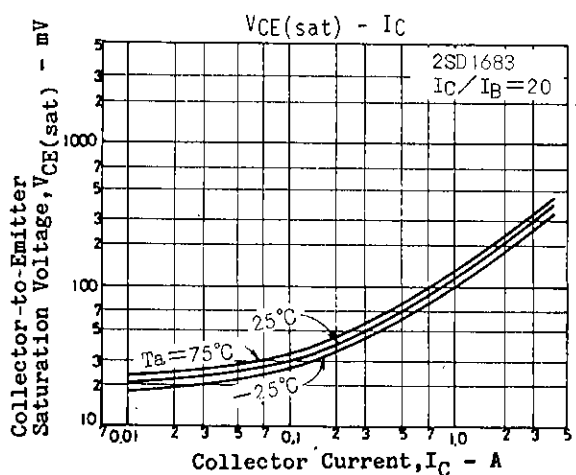
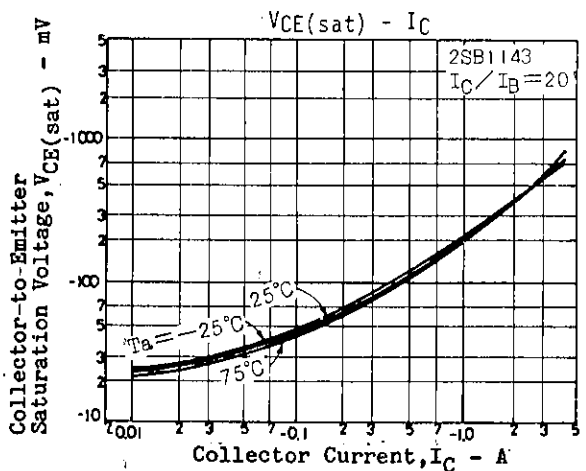
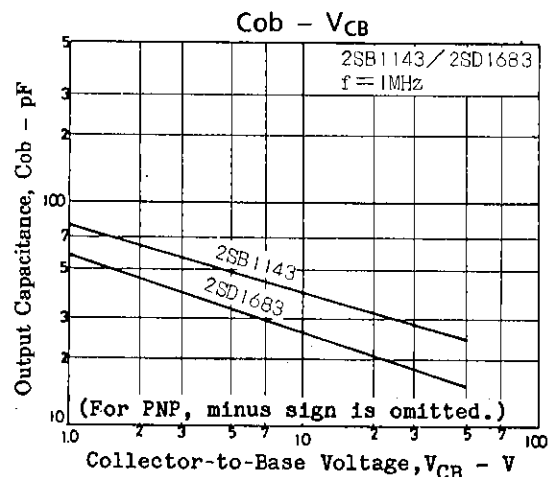
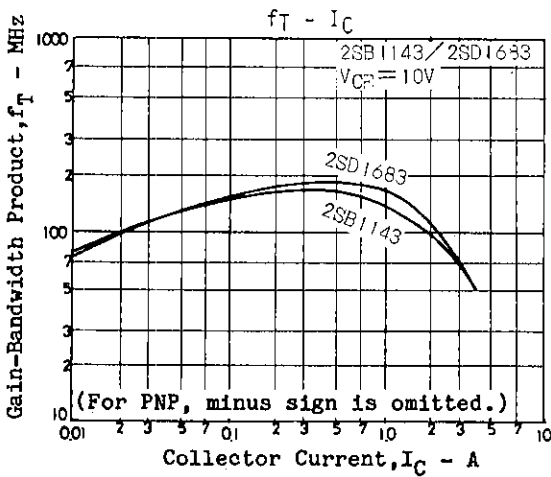
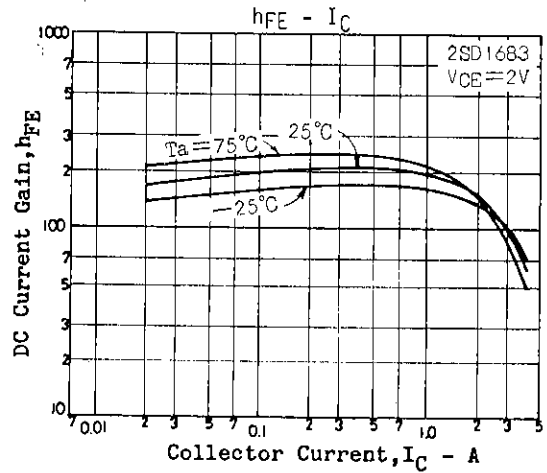
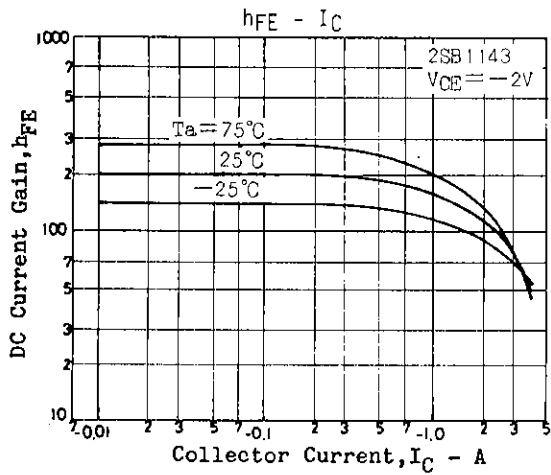
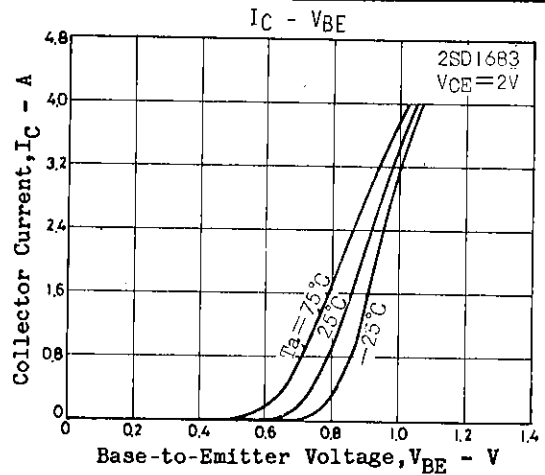
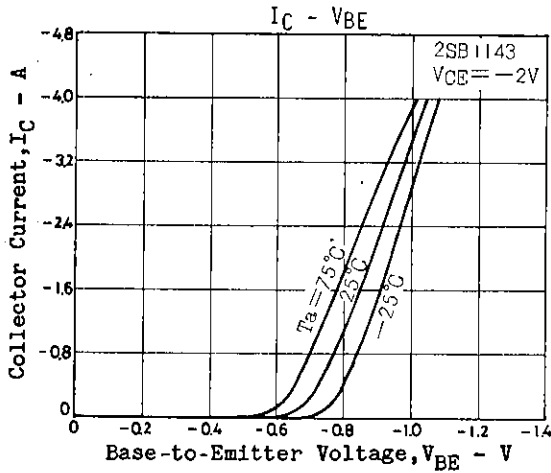
Switching Time Test Circuit

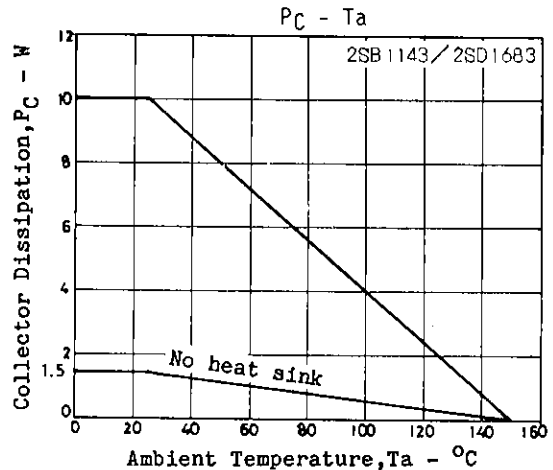
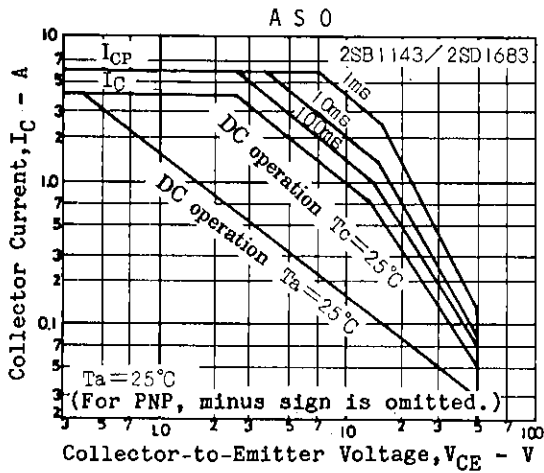
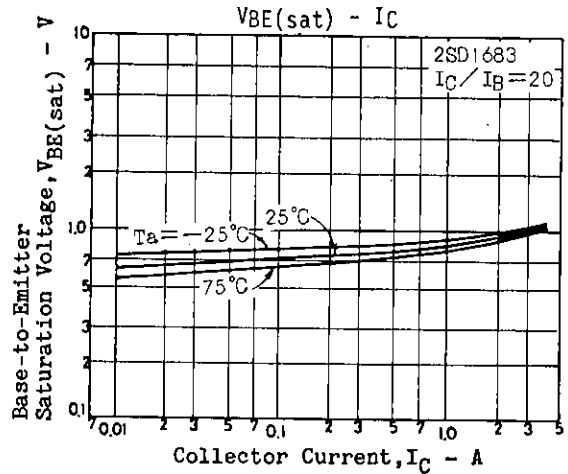
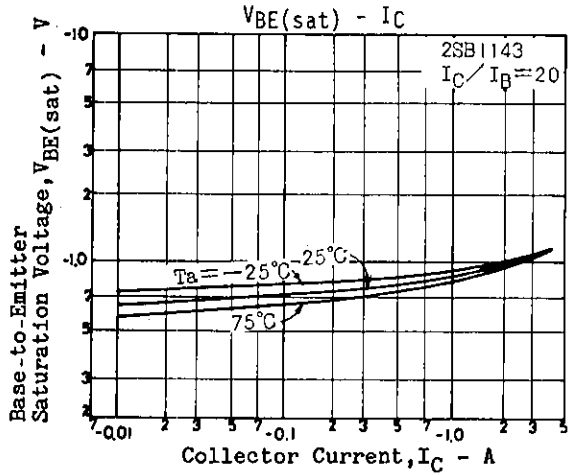


(For PNP, the polarity is reversed.) Unit (Resistance : Ω, Capacitance : F)



2SB1143/2SD1683





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