

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

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 _{CB0}	(-)60	V
Collector-to-Emitter Voltage	V _{CEO}	(-)50	V
Emitter-to-Base Voltage	V _{EBO}	(-)6	V
Collector Current	I _C	(-)4	A
Collector Current (Pulse)	I _{CP}	(-)6	A
Collector Dissipation	P _C	1.5	W
		10	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

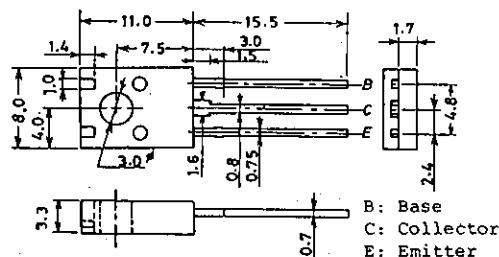
Electrical Characteristics at Ta=25°C			min	typ	max	unit
Collector Cutoff Current	I _{CB0}	V _{CB} =(-)40V, I _E =0			(-)1	µA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0			(-)1	µA
DC Current Gain	h _{FE} (1)	V _{CE} =(-)2V, I _C =(-)100mA	100*		56C*	
	h _{FE} (2)	V _{CE} =(-)2V, I _C =(-)3A	40			
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)50mA		150		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(39)		pF
				25		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C =(-)2A, I _B =(-)100mA		(-350)	(-700)	mV
				190	500	mV
B-E Saturation Voltage	V _{BE(sat)}	I _C =(-)2A, I _B =(-)100mA		(-)0.94	(-)1.2	V

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*: The 2SB1143/2SD1683 are classified by 100mA h_{FE} as follows:

100	R	200	140	S	280	200	T	400	280	U	560
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Package Dimensions 2042A
(unit:mm)

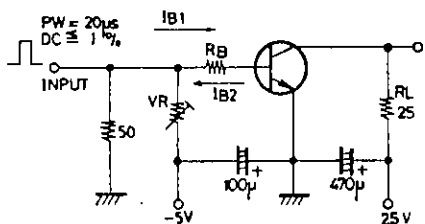


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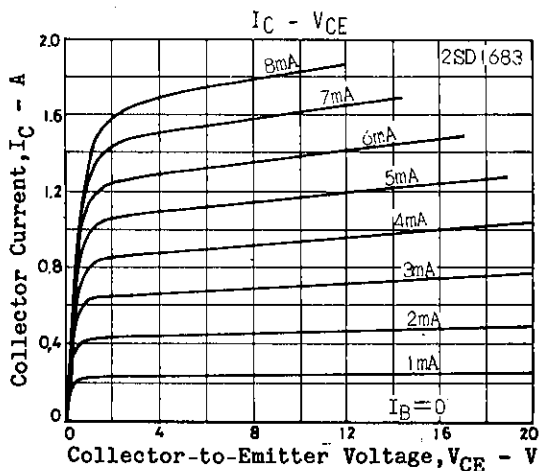
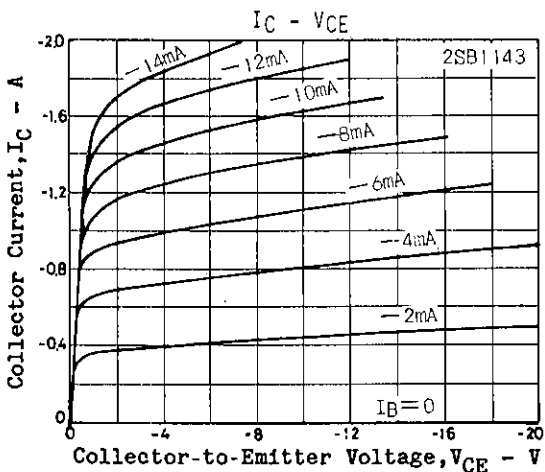
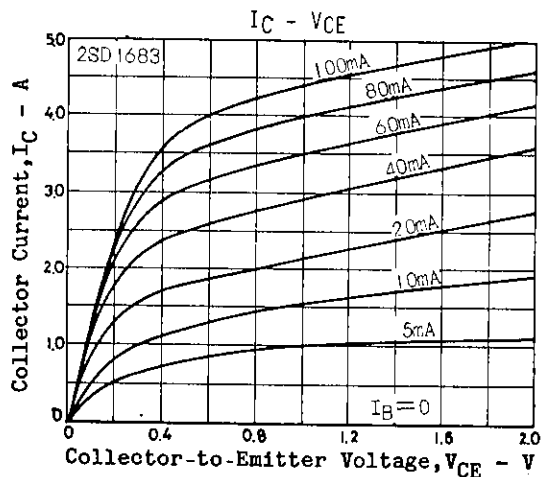
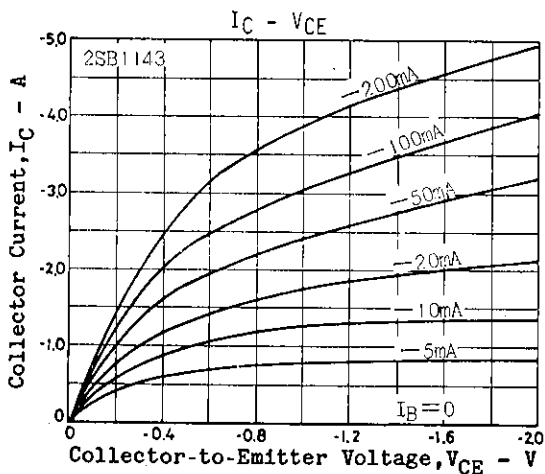
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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-) 10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-) 1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-) 10\mu A, I_C = 0$	(-)6			V
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

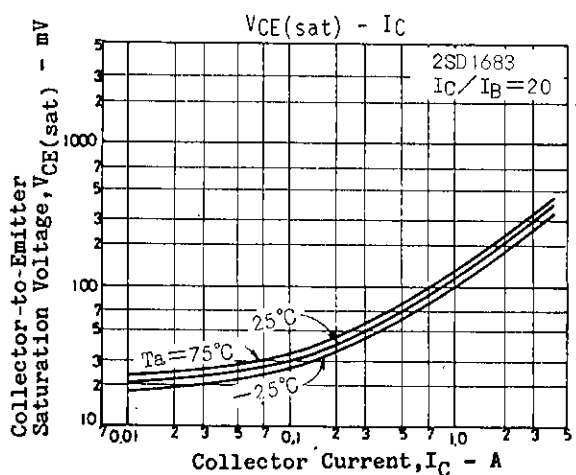
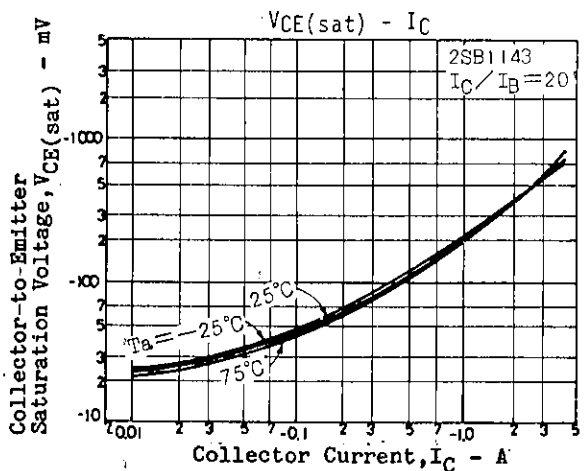
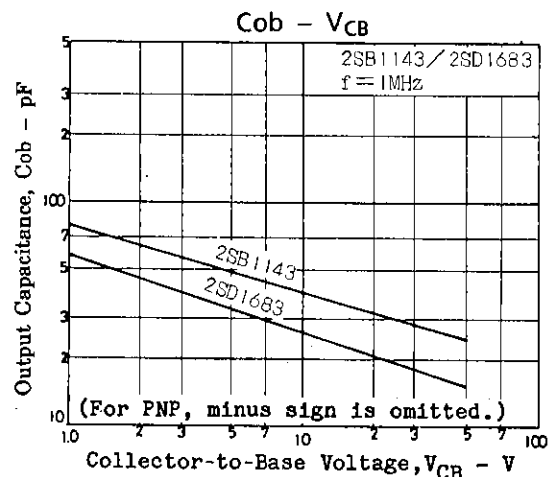
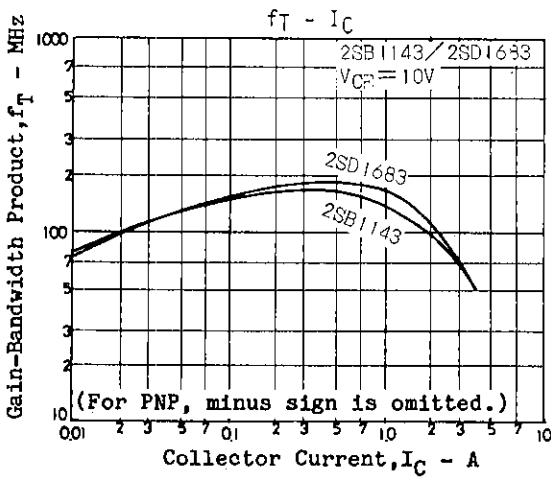
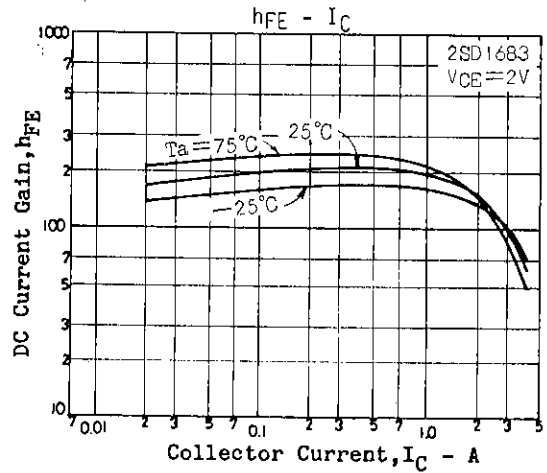
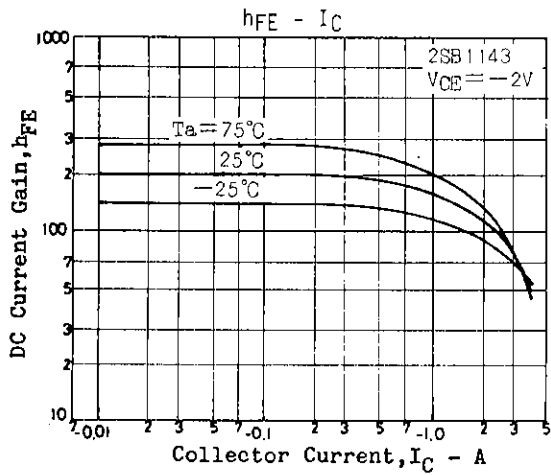
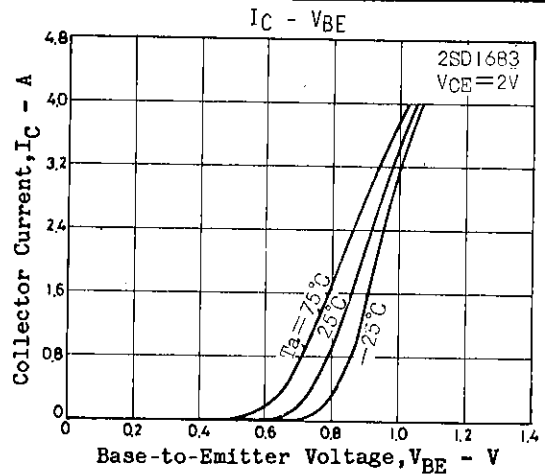
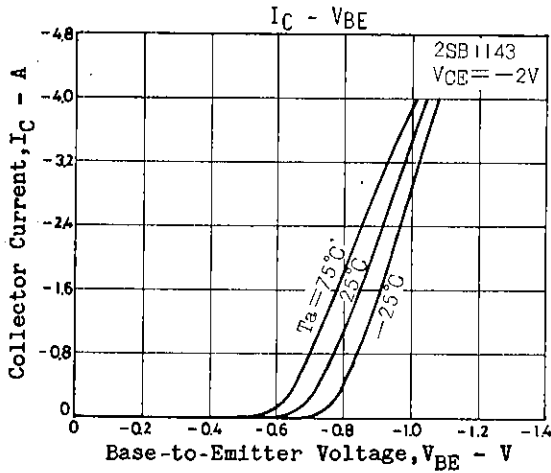
Switching Time Test Circuit

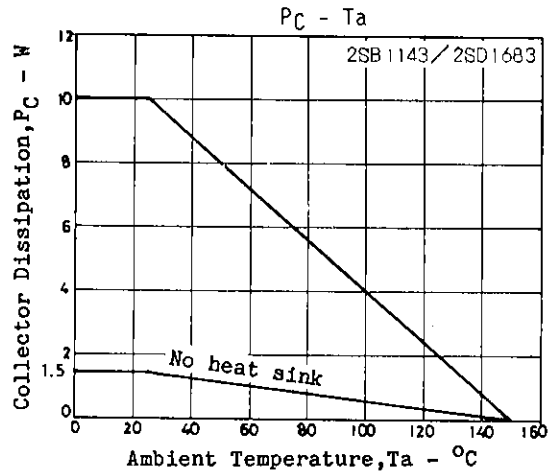
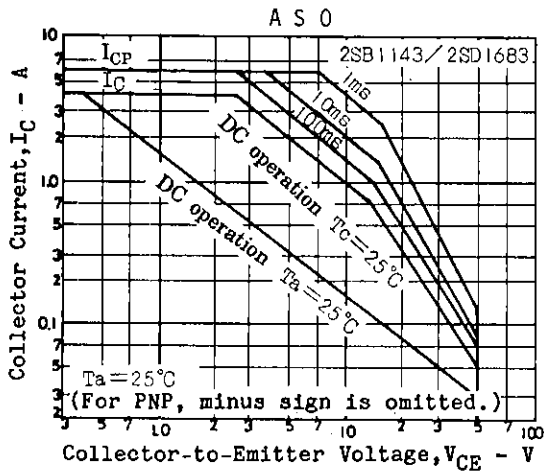
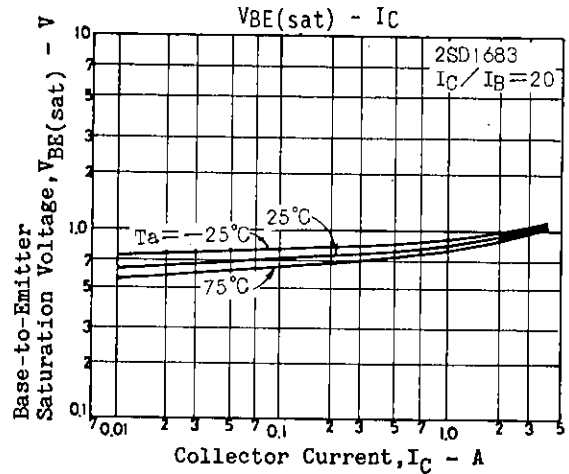
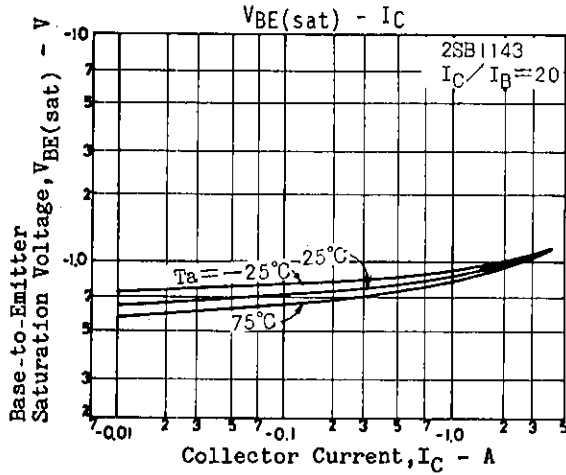


$I_C = 10I_{B1} = -10I_{B2} = 1A$
 (For PNP, the polarity is reversed.) Unit (Resistance : Ω , Capacitance : F)



2SB1143/2SD1683





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