

<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	$V_{CB0}$	(-)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**

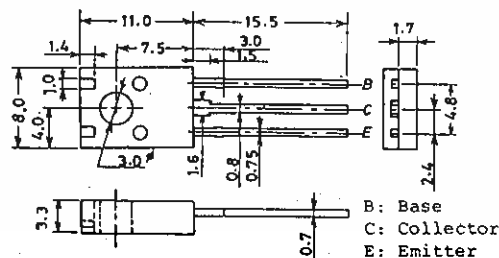
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)40V, I_E=0$			(-)1	µA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4V, I_C=0$			(-)1	µA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=(-)2V, I_C=(-)100mA$	100*		560*	
	$h_{FE}(2)$	$V_{CE}=(-)2V, I_C=(-)3A$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10V, I_C=(-)50mA$		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

Continued on next page.

\*: 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)



SANYO: TO126ML

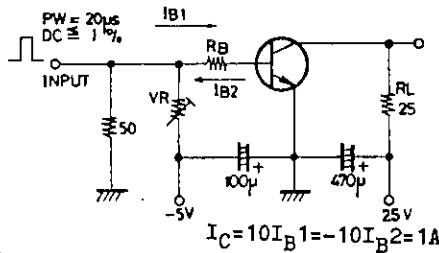


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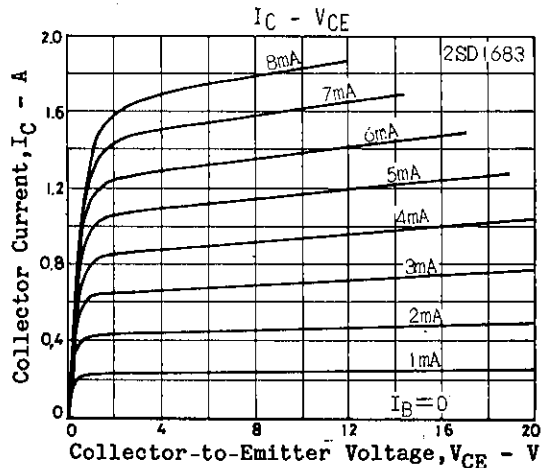
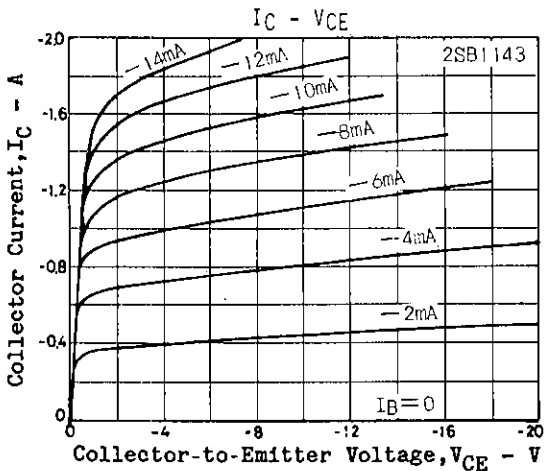
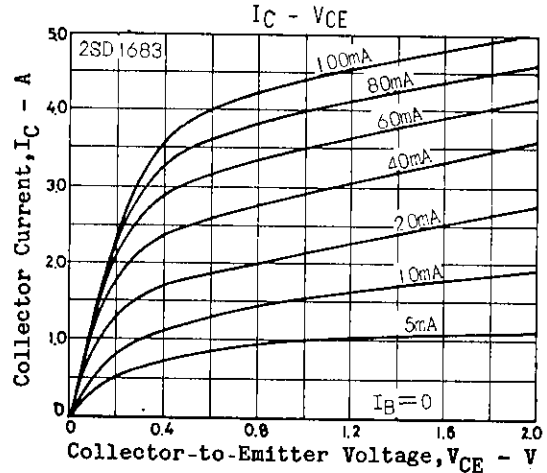
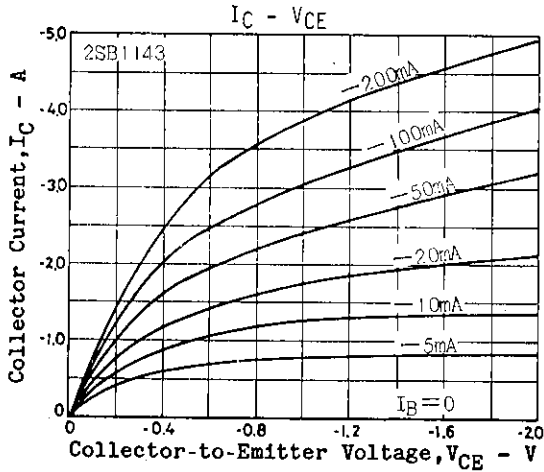
			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)6			V
Turn-on Time	$t_{on}$	See specified Test Circuit.		(70)		ns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

Switching Time Test Circuit

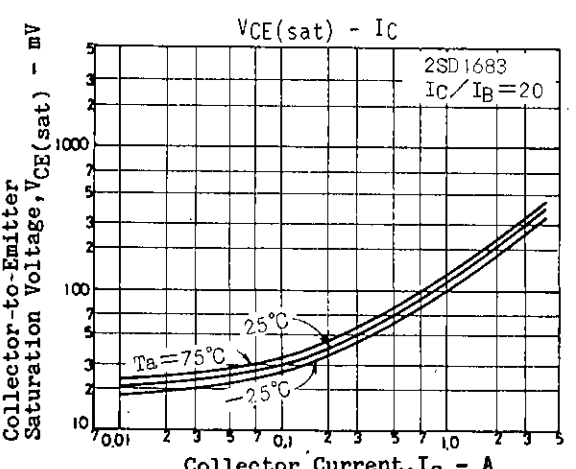
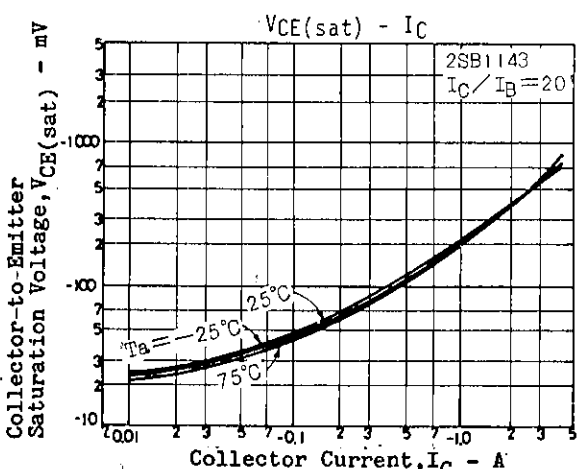
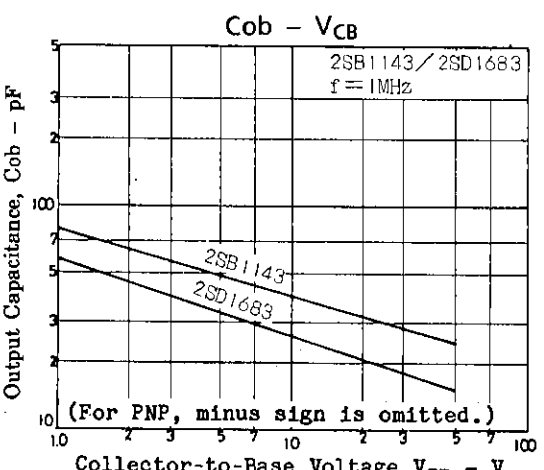
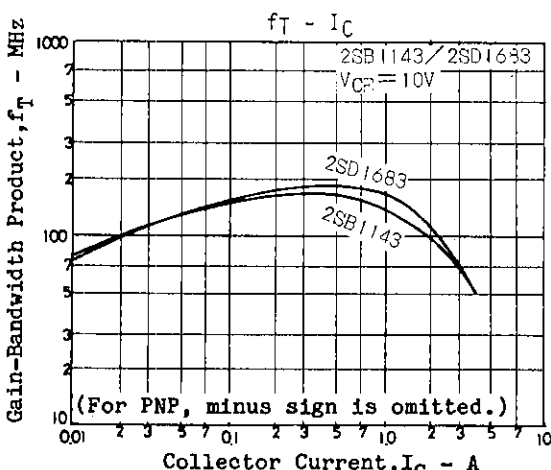
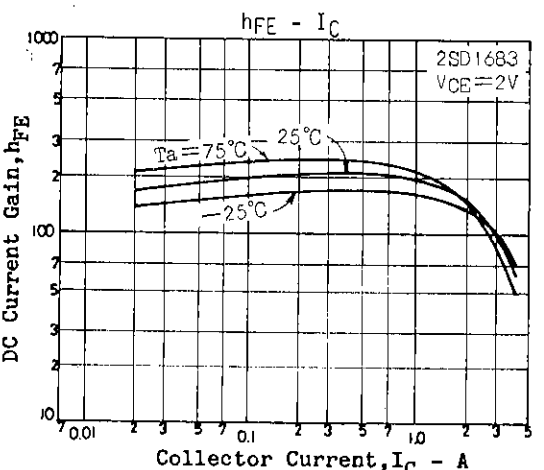
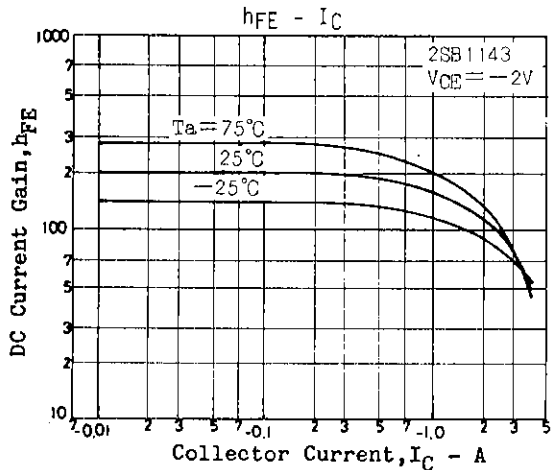
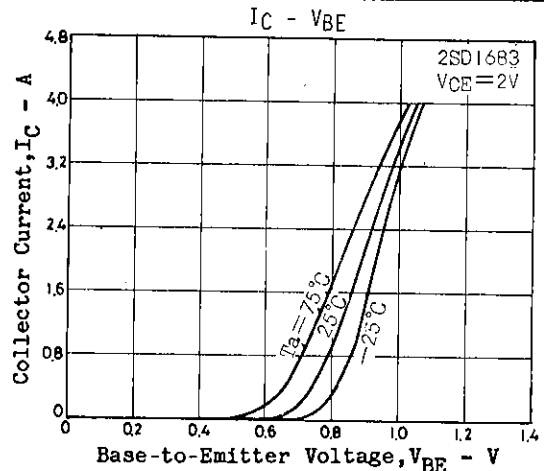
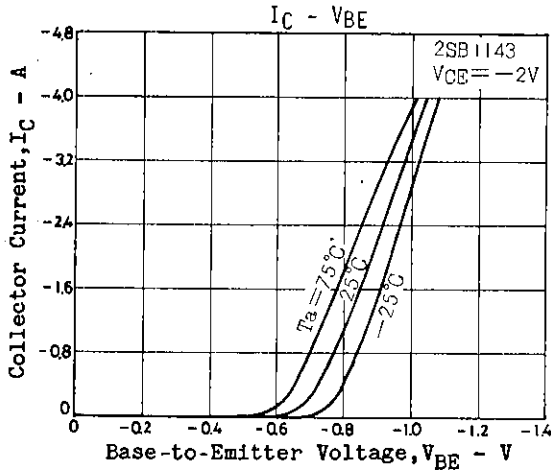


(For PNP, the polarity is reversed.)

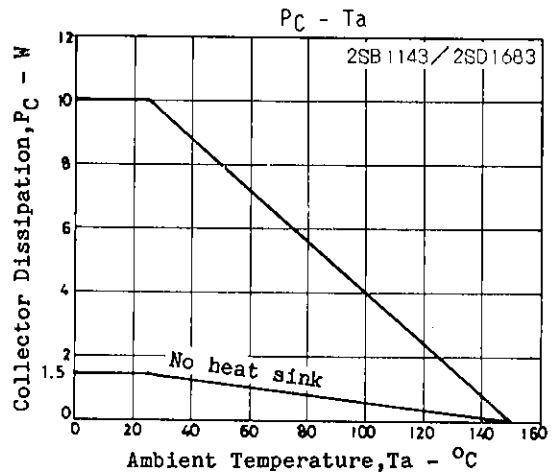
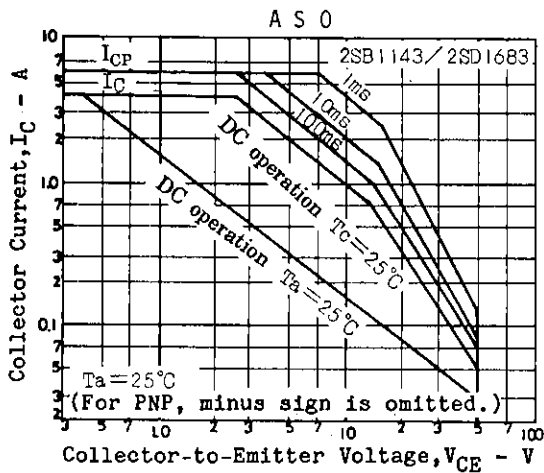
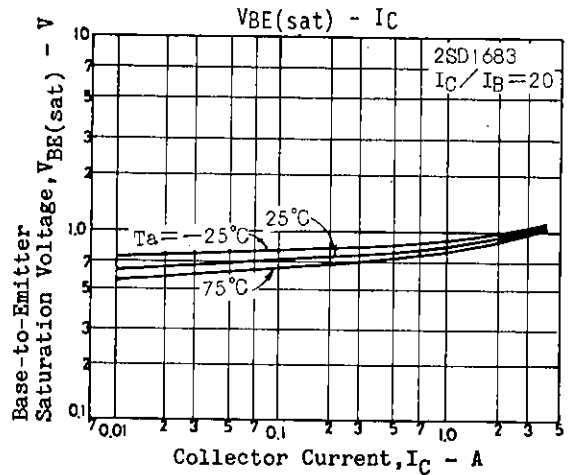
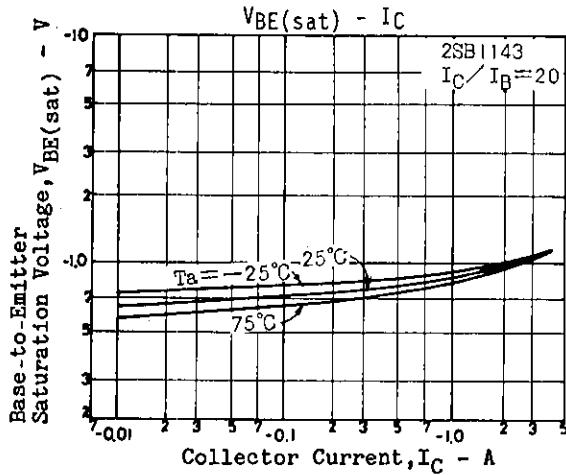
Unit (Resistance:  $\Omega$ , Capacitance: F)



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