

SANYO	No.2060A	2SB1142/2SD1682
		PNP/NPN Epitaxial Planar Silicon Transistors
50V/2.5A High-Speed Switching Applications		

Applications

- Power supplies, relay drivers, lamp drivers.

Features

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

() : 2SB1142

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	(-)2.5	A
Collector Current (Pulse)	I _{CP}	(-)5.0	A
Collector Dissipation	P _C	1.5	W
		10	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

T_c = 25°C

Electrical Characteristics at Ta = 25°C

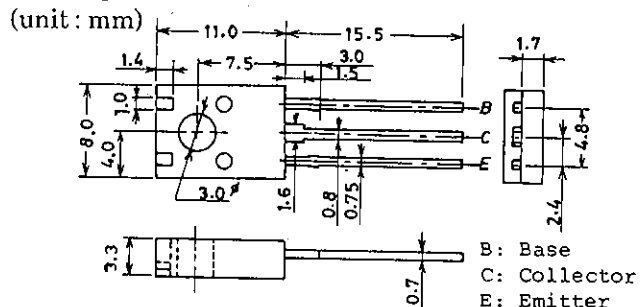
			min	typ	max	unit
Collector Cutoff Current	I _{CB0}	V _{CB} = (-)50V, I _E = 0			(-)100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} = (-)4V, I _C = 0			(-)100	nA
DC Current Gain	h _{FE} (1)	V _{CE} = (-)2V, I _C = (-)100mA	(100)※		(400)	
			100※		560	
	h _{FE} (2)	V _{CE} = (-)2V, I _C = (-)2A	35			
Gain-Bandwidth Product	f _T	V _{CE} = (-)10V, I _C = (-)50mA		140		MHz
C-E Saturation Voltage	V _{CE(sat)}	I _C = (-)1A, I _B = (-)50mA		(-)250	(-)500	mV
				110	300	mV
B-E Saturation Voltage	V _{BE(sat)}	I _C = (-)1A, I _B = (-)50mA		(-)0.85	(-)1.2	V
Output Capacitance	C _{ob}	V _{CE} = (-)10V, f = 1MHz		(25)16		pF

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※ : The 2SB1142/2SD1682 are classified by 100mA h_{FE} as follows

2SB1142	100	R	200	140	S	280	200	T	400			
2SD1682	100	R	200	140	S	280	200	T	400	280	U	560

Package Dimensions 2042A



SANYO: TO126ML

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

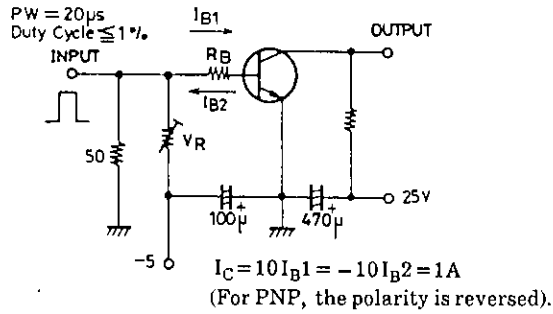
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

2SB1142/2SD1682

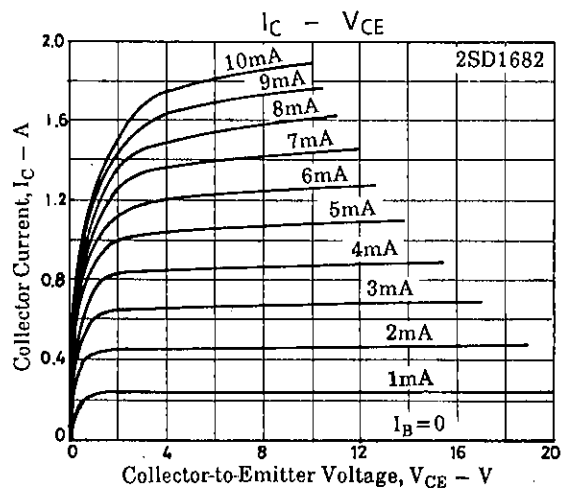
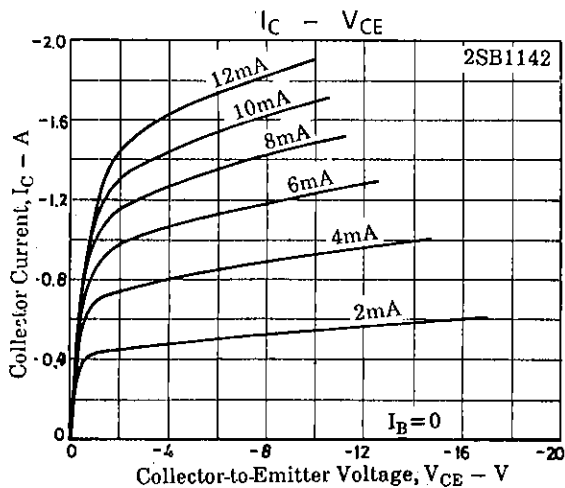
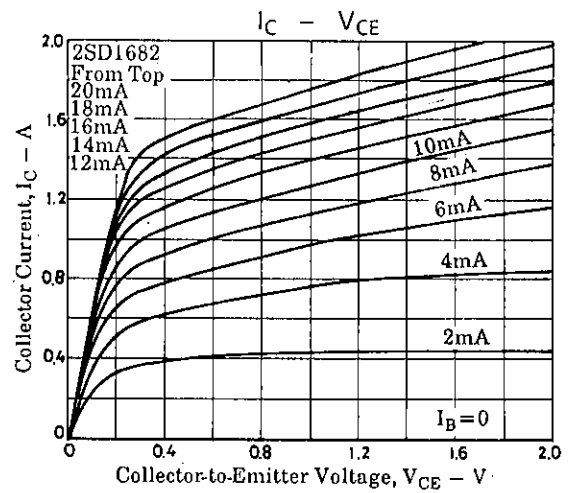
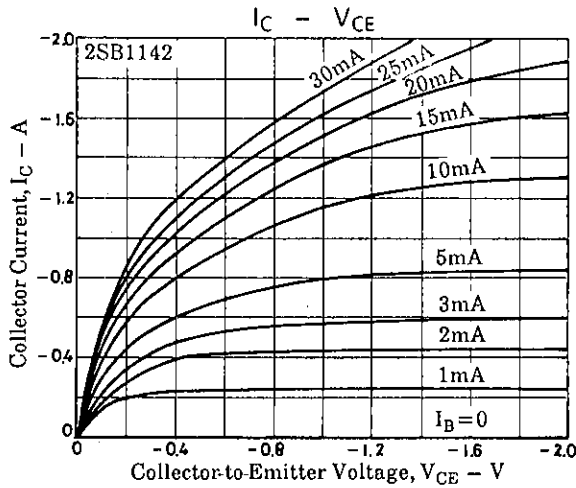
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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)6			V
Turn-on Time	t_{on}	See specified Test Circuit.		(35)35		ns
Storage Time	t_{stg}	"		(35)550		ns
Fall Time	t_f	"		(30)30		ns

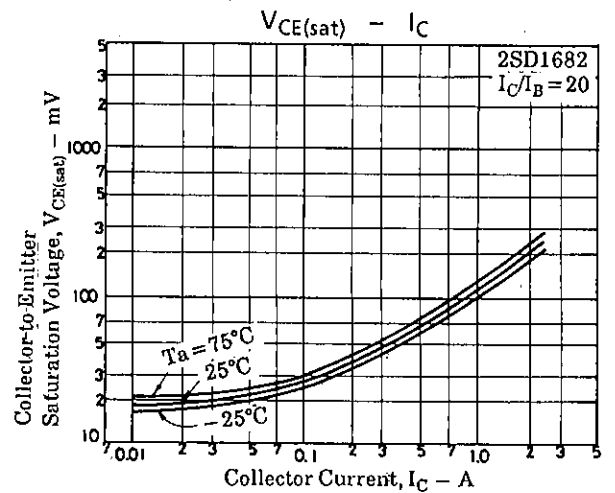
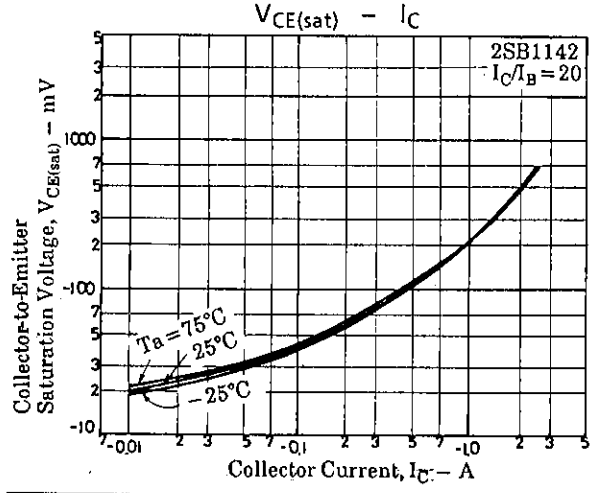
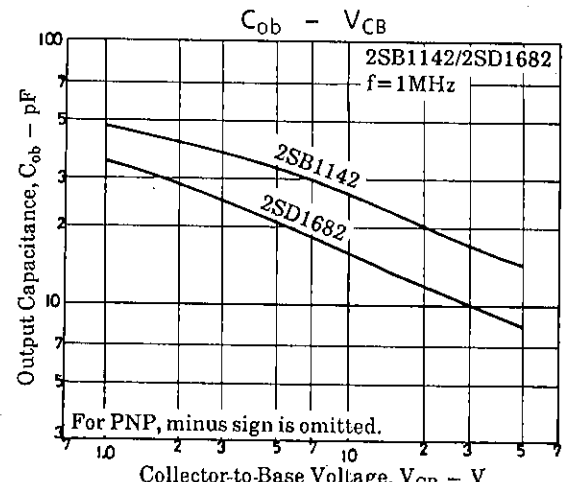
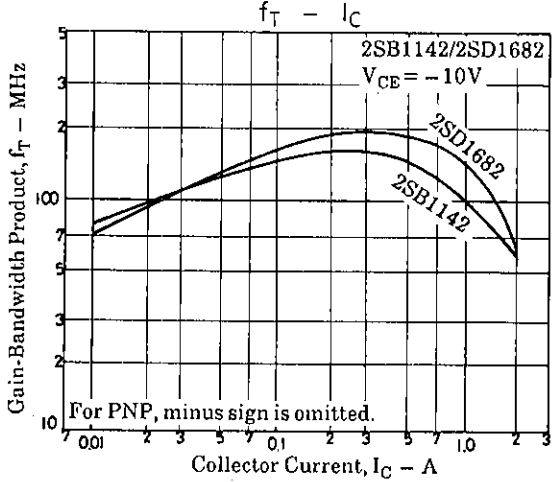
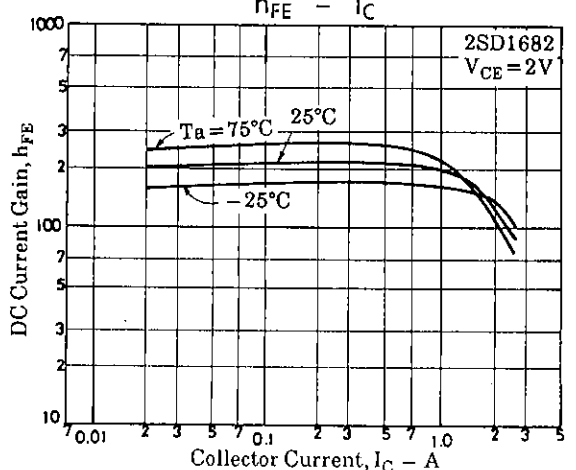
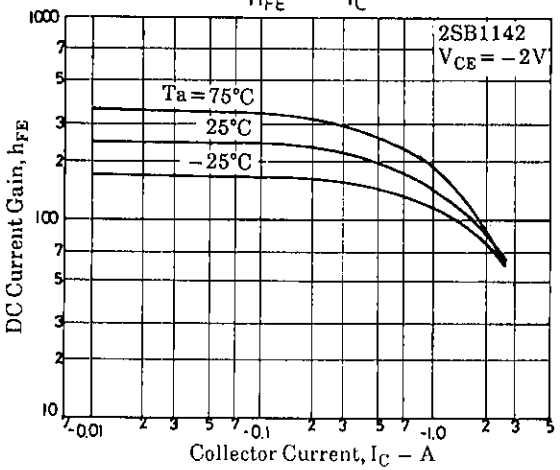
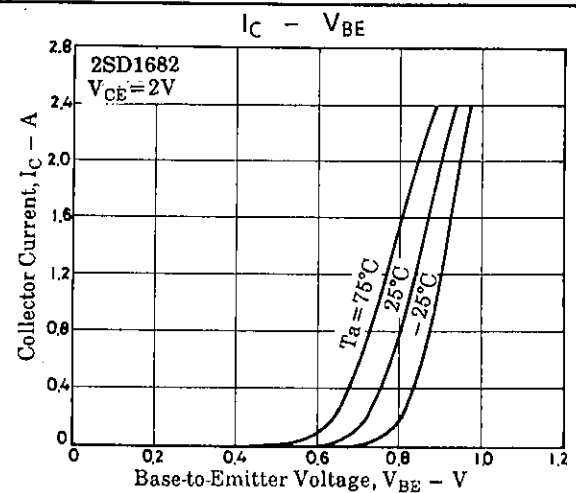
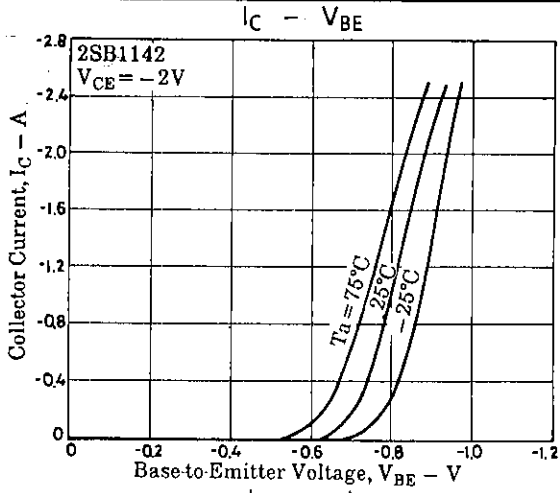
Switching Time Test Circuit



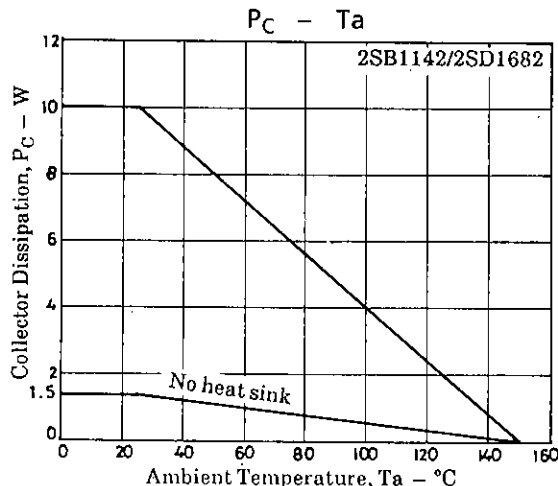
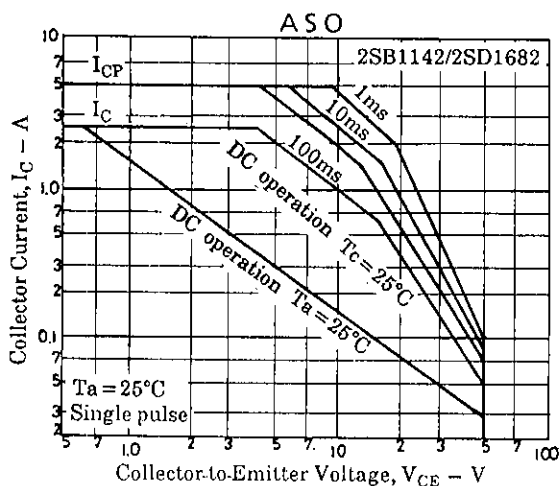
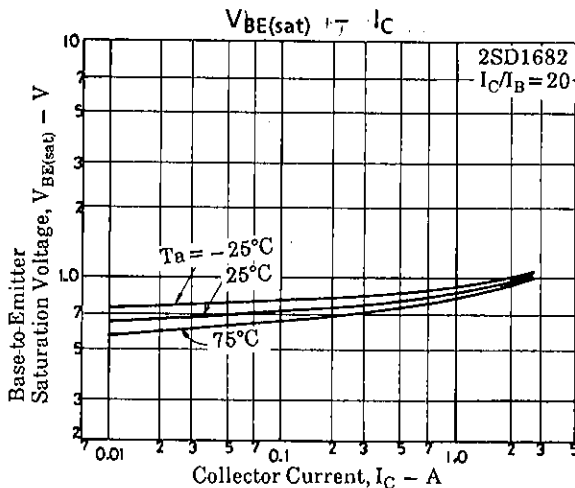
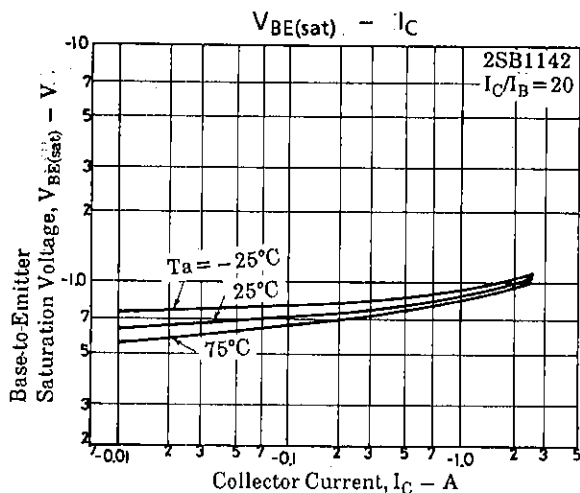
Unit (Resistance : Ω , Capacitance : F)



2SB1142/2SD1682



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