Ordering number: EN 2041A

SANYO

No.2041A

2SB1144/2SD1684

PNP/NPN Epitaxial Planar Silicon Transistors

Low-Frequency Power Amp, Medium-Speed Switching Applications

Features

- Adoption of FBET and MBIT processes.
- High breakdown voltage
- Low saturation voltage.
- Plastic-covered heat sink facilitating high-density mounting.

( ) : 2SB1144

Absolute Maximum Ratings at Ta = 25°C

				unit
Collector-to-Base Voltage	V_{CBO}		(−)120	V
Collector-to-Emitter Voltage	V_{CEO}		(−)100	V
Emitter-to-Base Voltage	V_{EBO}		(−)6	V
Collector Current	I_C		(−)1.5	A
Collector Current (Pulse)	I_{CP}		(−)2.0	A
Collector Dissipation	P_C		1.5	W
		Tc = 25°C	10	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB} = (−)100V, 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} = (−)5V, I_C = (−)100mA	100※		400※	
	$h_{FE}(2)$	V_{CE} = (−)5V, I_C = (−)1A	30			
Gain Bandwidth Product	f_T	V_{CE} = (−)10V, I_C = (−)50mA		(100)		MHz
				120		MHz
Output Capacitance	Cob	V_{CB} = (−)10V, f = 1MHz		(18)		pF
				11		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C = (−)500mA, I_B = (−)50mA		(−180)	(−500)	mV
				100	300	mV
B-E Saturation Voltage	$V_{BE(sat)}$	I_C = (−)500mA, I_B = (−)50mA		(−)0.85	(−)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C = (−)10μA, I_E = 0	(−)120			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C = (−)1mA, R_{BE} = ∞	(−)100			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E = (−)10μA, I_C = 0	(−)6			V

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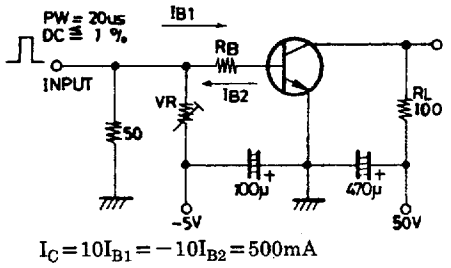
※ : The 2SB1144/2SD1684 are classified by 100mA h_{FE} as follows :

100 Q 200	140 S 280	200 T 400

Switching Time Test Circuit

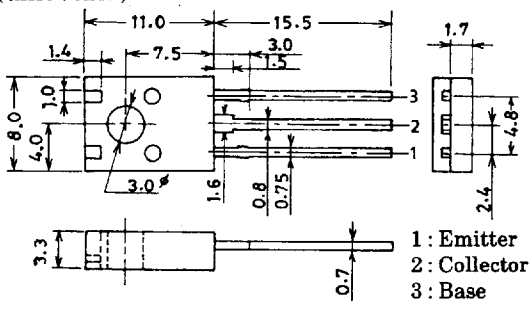


$I_C = 10I_{B1} = -10I_{B2} = 500mA$

Unit (Resistance : Ω, Capacitance : F)

Package Dimensions 2042B

(unit : mm)



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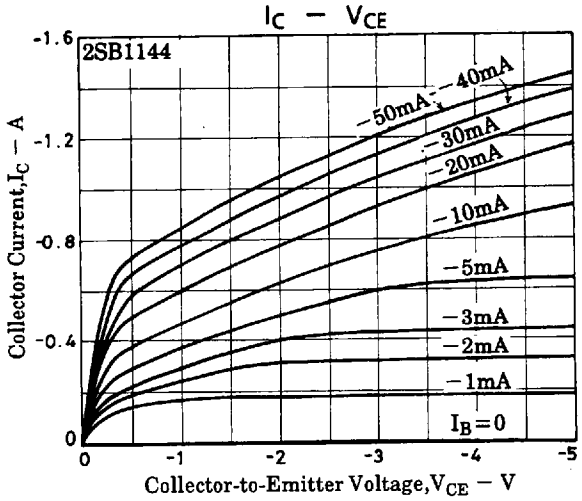
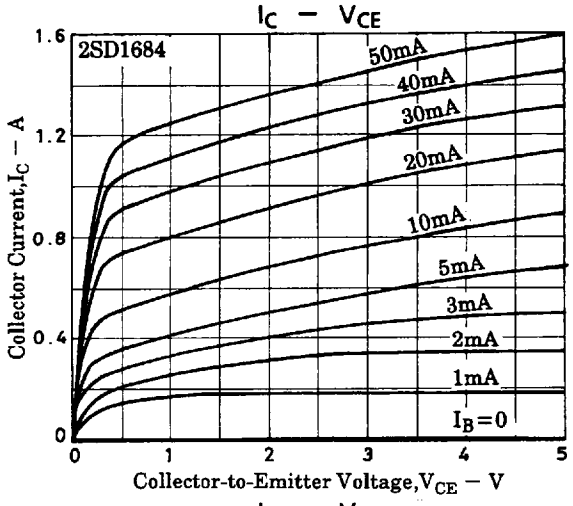
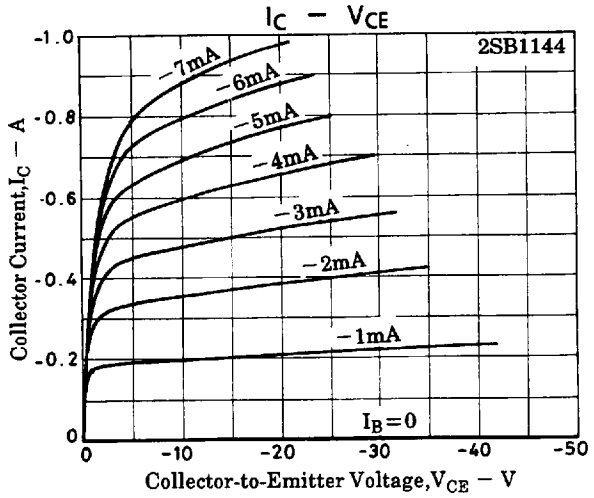
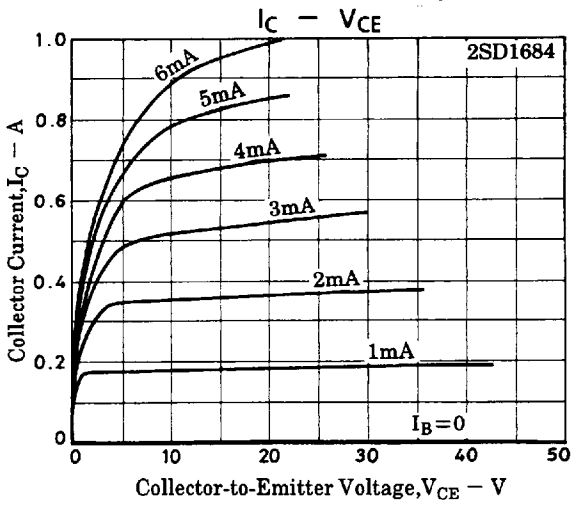
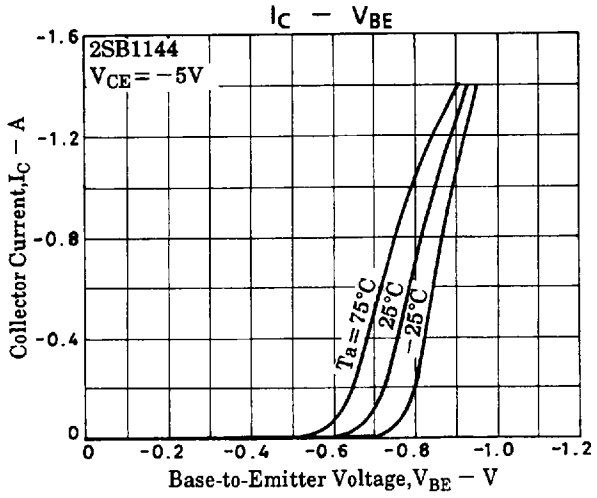
			min	typ	max	unit
Rise Time	t_{on}	See specified Test Circuit.		(80)		ns
		〃		80		ns
Storage Time	t_{stg}	〃		(750)		ns
		〃		1000		ns
Fall Time	t_f	〃		(40)		ns
		〃		50		ns

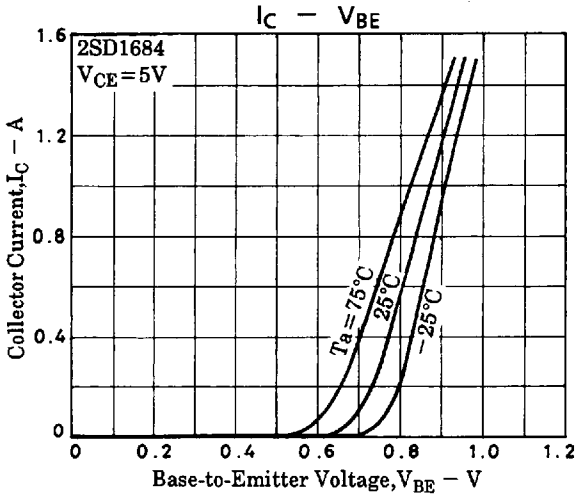




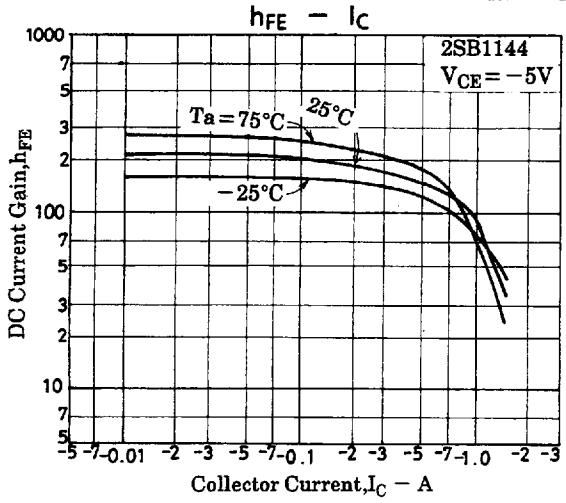




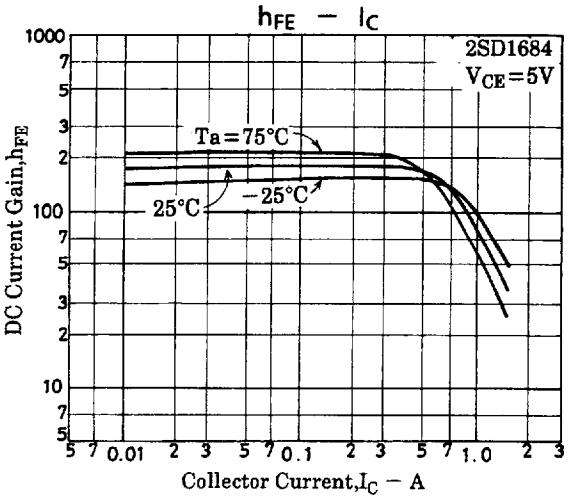




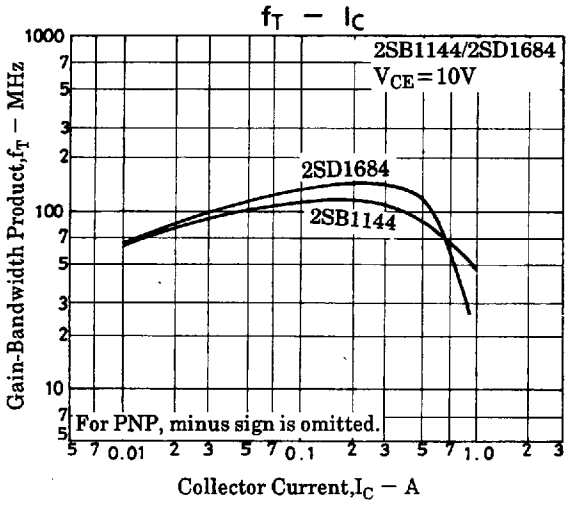
h_{FE} – I_C



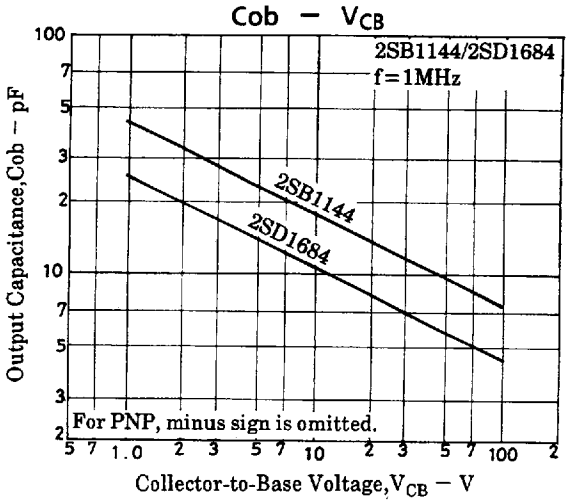
h_{FE} – I_C



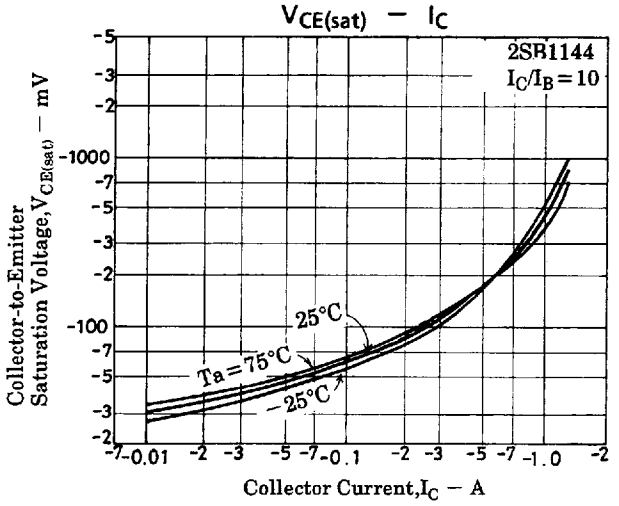
f_T – I_C



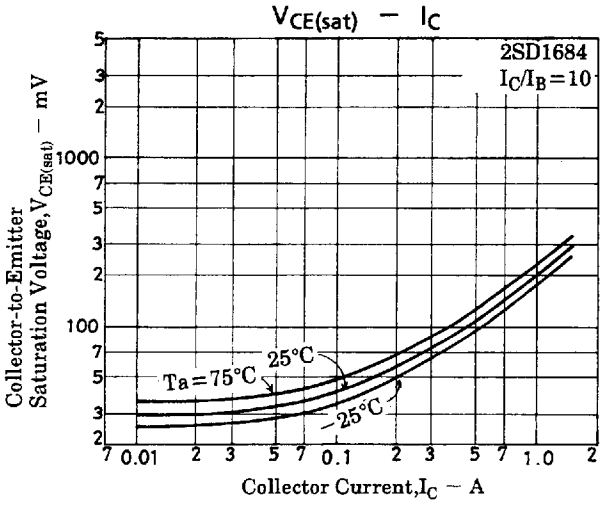
Cob – V_{CB}



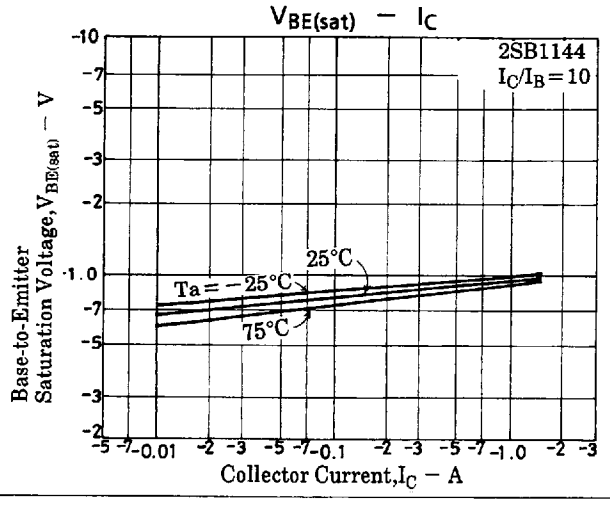
$V_{CE(sat)}$ – I_C



$V_{CE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C