

SANYO

No.2005A

2SA1416/2SC3646

PNP/NPN Epitaxial Planar Silicon Transistors

High-Voltage Switching Applications

Features

- . Adoption of FBET, MBIT processes.
- . High breakdown voltage and large current capacity.
- . Fast switching time.
- . Very small size making it easy to provide high-density, small-sized hybrid ICs.

(): 2SA1416

Absolute Maximum Ratings at Ta=25°C		unit
Collector to Base Voltage	V _{CB0}	(-)120 V
Collector to Emitter Voltage	V _{CEO}	(-)100 V
Emitter to Base Voltage	V _{EBO}	(-)6 V
Collector Current	I _C	(-)1 A
Collector Current(Pulse)	I _{CP}	(-)2 A
Collector Dissipation	P _C	500 mW
	Mounted on ceramic board (250mm ² x 0.8mm)	1.3 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} =(-)100V, I _B =0			(-)100	nA
Emitter Cutoff Current	I _{EBO} V _{EB} =(-)4V, I _C =0			(-)100	nA
DC Current Gain	h _{FE} V _{CE} =(-)5V, I _C =(-)100mA	100*		400*	
Gain-Bandwidth Product	f _T V _{CE} =(-)10V, I _C =(-)100mA		120		MHz
Output Capacitance	c _{ob} V _{CB} =(-)10V, f=1MHz		(13)		pF
			8.5		pF
C-E Saturation Voltage	V _{CE(sat)} I _C =(-)400mA, I _B =(-)40mA	(-0.2)	(-0.6)		V
		0.1	0.4		V
B-E Saturation Voltage	V _{BE(sat)} I _C =(-)400mA, I _B =(-)40mA	(-)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

*: The 2SA1416/2SC3646 are classified by 100mA h_{FE} as follows:

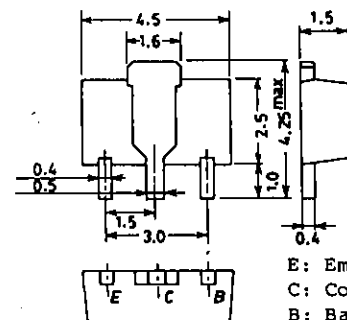
100 R	200	140 S	280	200 T	400
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Marking 2SA1416:AB
2SC3646:CB

h_{FE} rank : R, S, T**Package Dimensions 2038**

(unit:mm)



(Bottom View)

E: Emitter
C: Collector
B: Base

SANYO: PCP

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

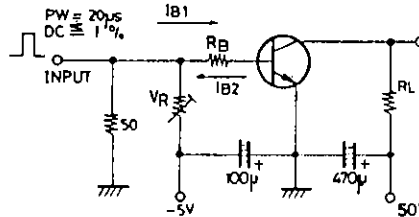
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

2SA1416/2SC3646

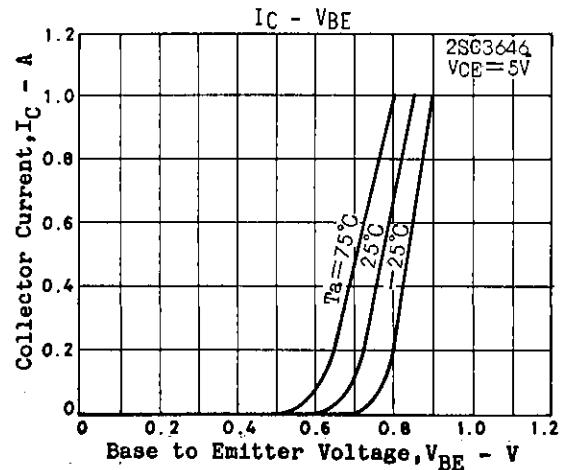
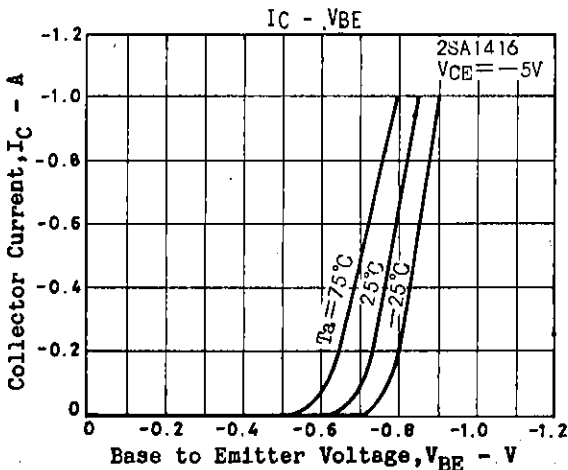
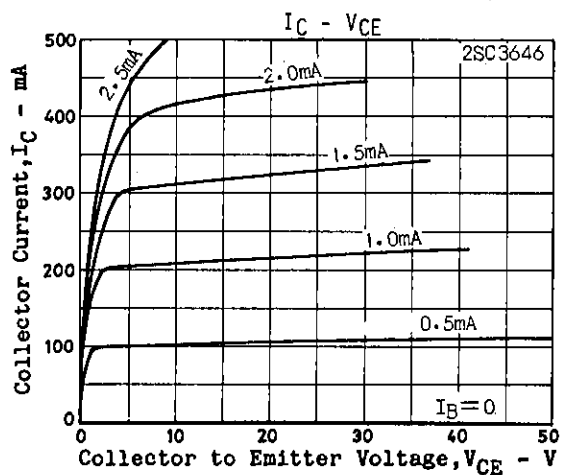
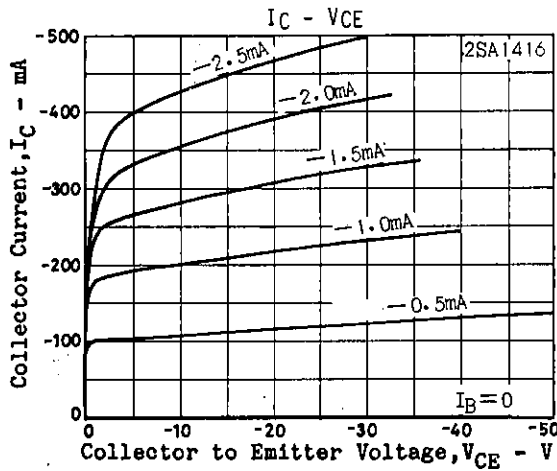
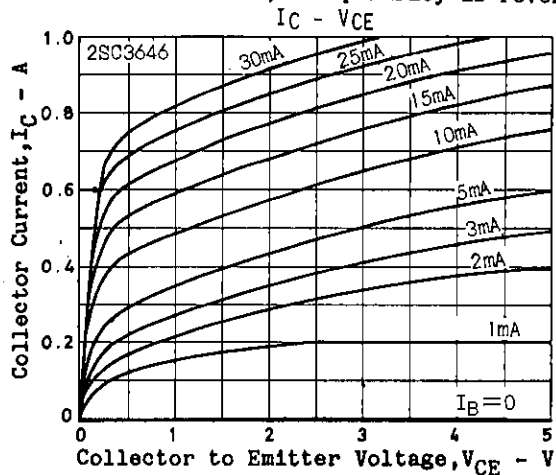
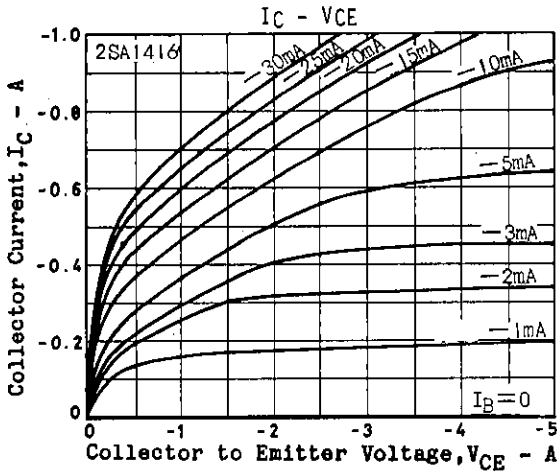
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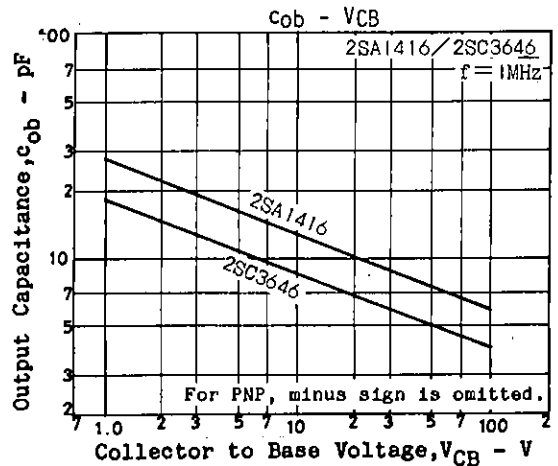
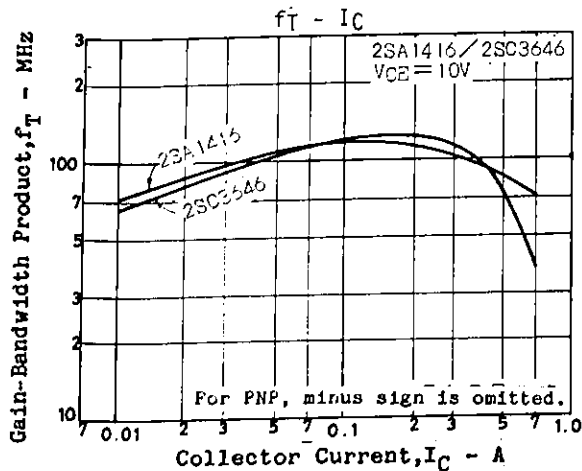
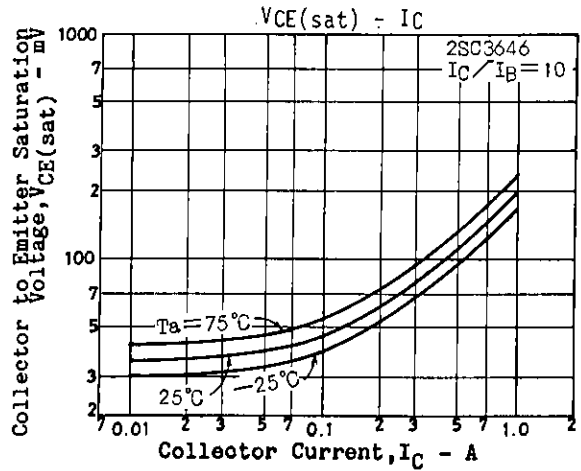
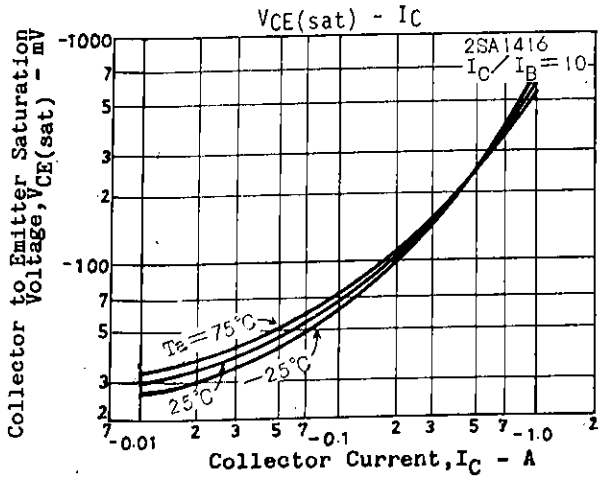
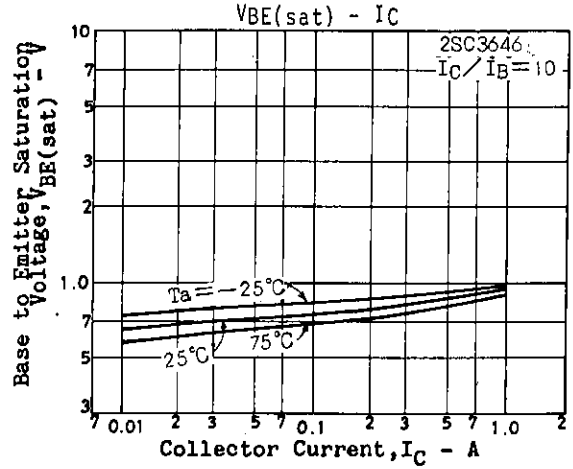
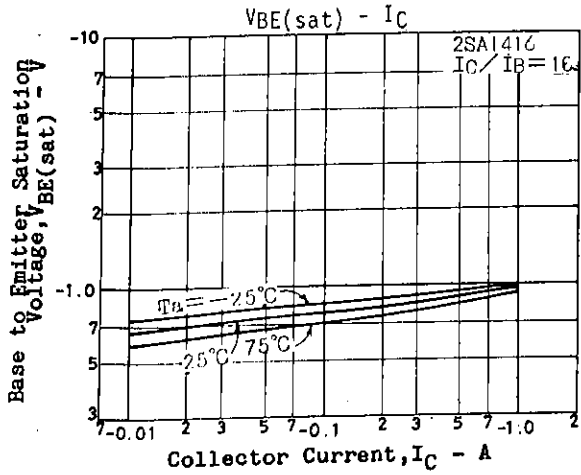
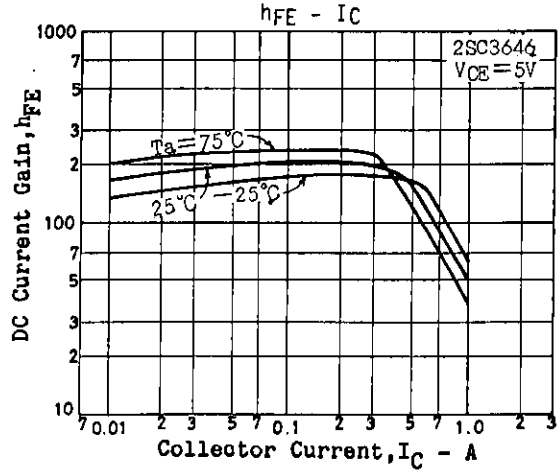
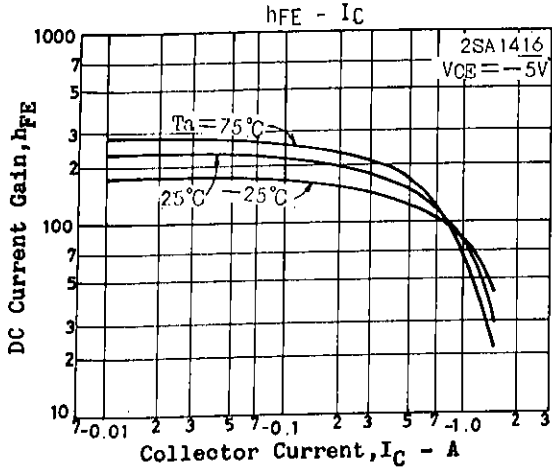
			min	typ	max	unit
Turn-ON Time	t_{on}	See specified Test Circuit.		(80)		ns
				80		ns
Storage Time	t_{stg}			(700)		ns
				850		ns
Fall Time	t_f			(40)		ns
				50		ns

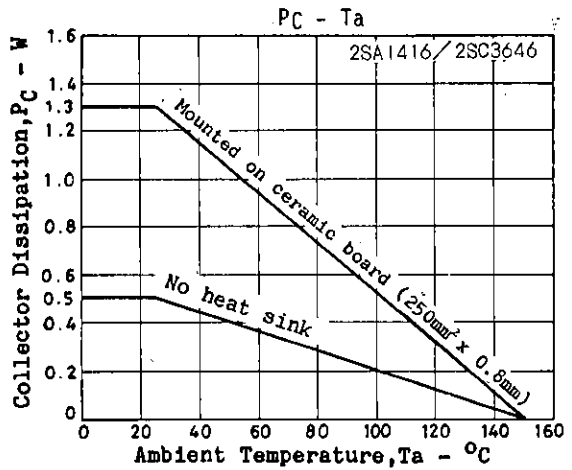
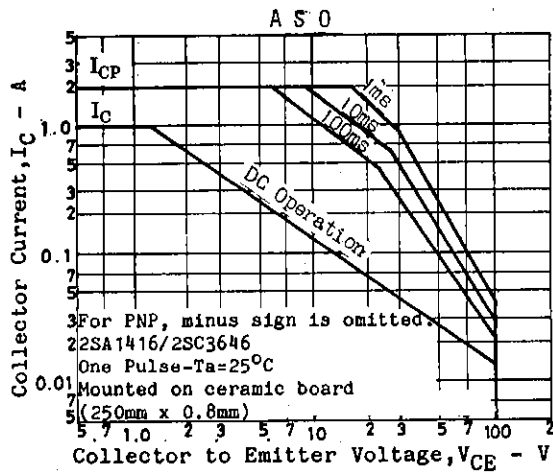
Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)
 $10I_{B1} = -10I_{B2} = I_C = 400mA$ (For PNP, the polarity is reversed.)







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