

SANYO

No.1720A

2SA1415/2SC3645

PNP/NPN Epitaxial Planar Silicon Transistors

High-Voltage Switching,
Predriver Applications

Features

- Adoption of FBET process
- High breakdown voltage ($V_{CEO} = 160V$)
- Excellent linearity of h_{FE} and small c_{ob}
- Fast switching speed
- Very small size marking it easy to provide high-density, small-sized hybrid ICs

(): 2SA1415

Absolute Maximum Ratings at $T_a = 25^\circ C$

			unit
Collector to Base Voltage	V_{CBO}	(-)180	V
Collector to Emitter Voltage	V_{CEO}	(-)160	V
Emitter to Base Voltage	V_{EBO}	(-)5	V
Collector Current	I_C	(-)140	mA
Collector Current(Pulse)	I_{CP}	(-)200	mA
Collector Dissipation	$P_C(1)$	500	mW
	$P_C(2)$ Mounted on ceramic board ($250mm^2 \times 0.8mm$)	1.3	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

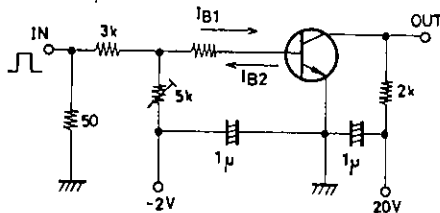
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)80V, I_E = 0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE} = (-)5V, I_C = (-)10mA$	100*		400*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)10mA$		150		MHz
Output Capacitance	c_{ob}	$V_{CB} = (-)10V, f = 1MHz$		(4.0)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$		(-0.14)	(-0.4)	V
Turn-on Time	t_{on}	See specified Test Circuit.		0.1		μs
Storage Time	t_{stg}	"		1.5		μs
Fall Time	t_f	"		0.1		μs

* : The 2SA1415/2SC3645 are classified by 10mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400
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Marking 2SA1415 : AA h_{FE} rank : R,S,T
2SC3645 : CA

Switching Time Test Circuit

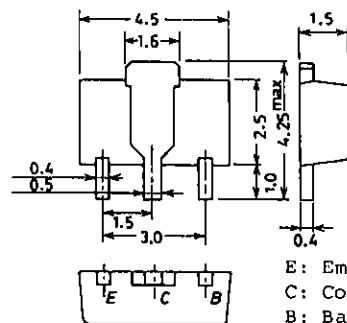


$I_C = 10I_{B1} = 10I_{B2} = 10mA$
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω , Capacitance : F)

Package Dimensions 2038

(unit: mm)

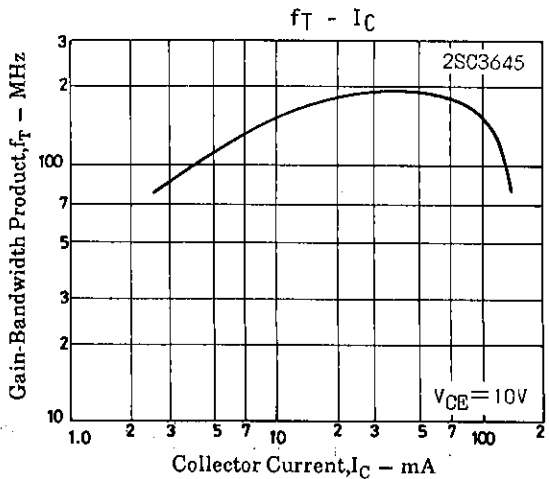
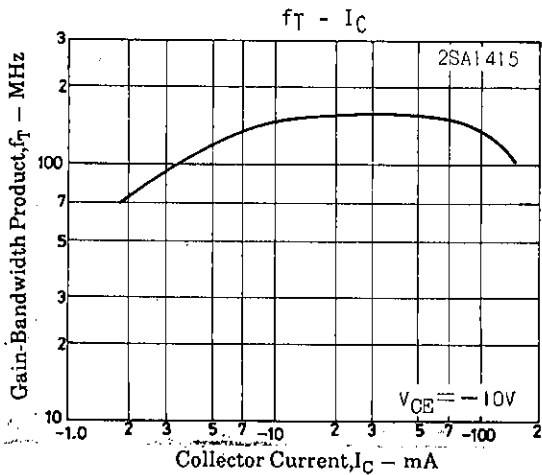
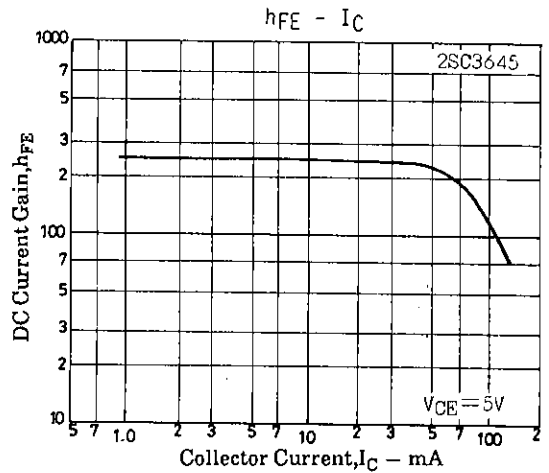
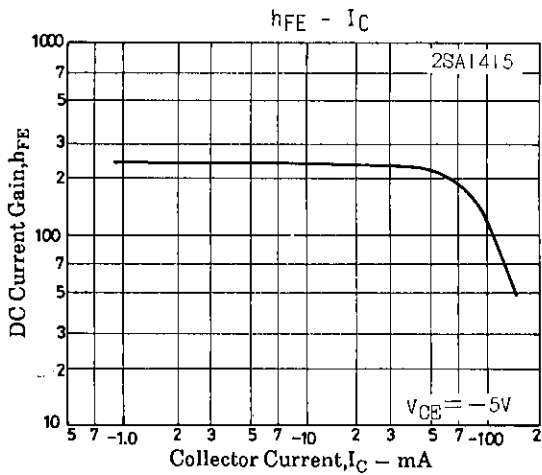
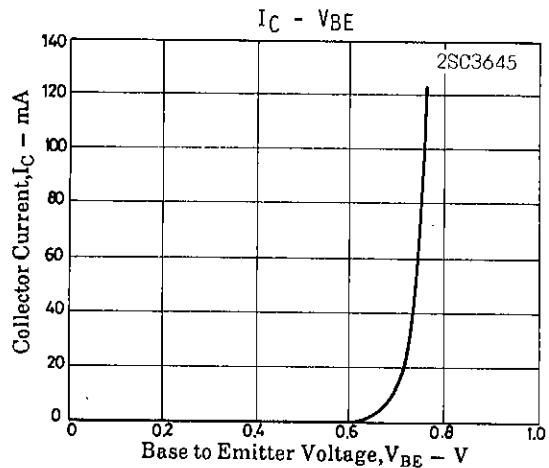
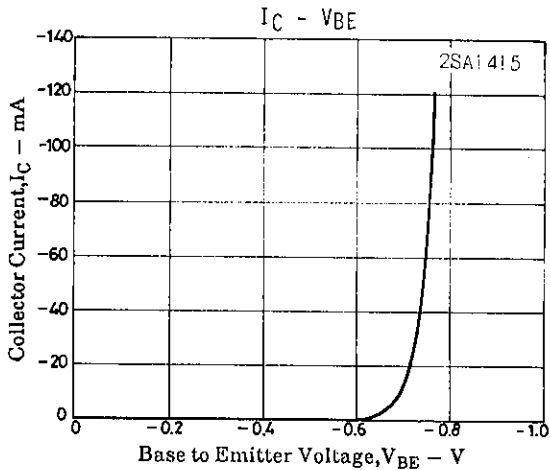
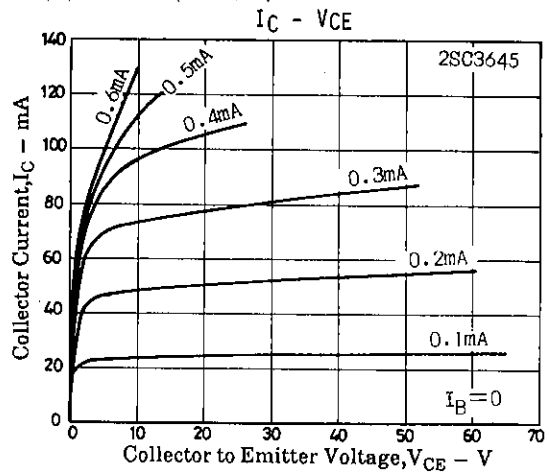
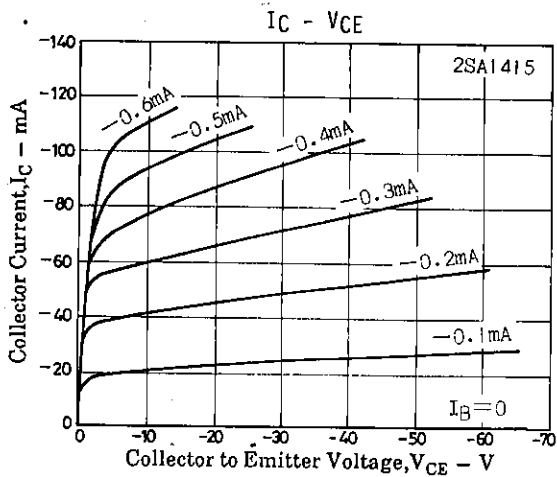


E: Emitter
C: Collector
B: Base

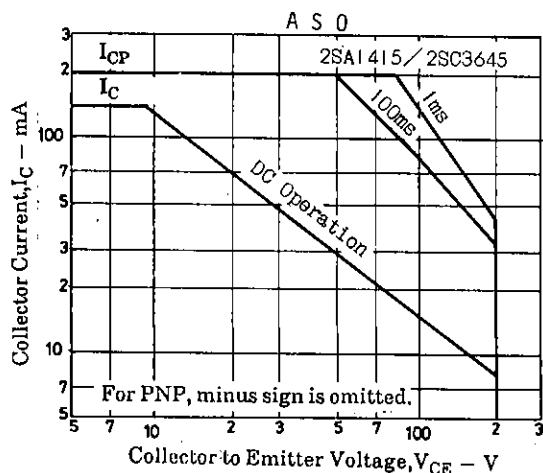
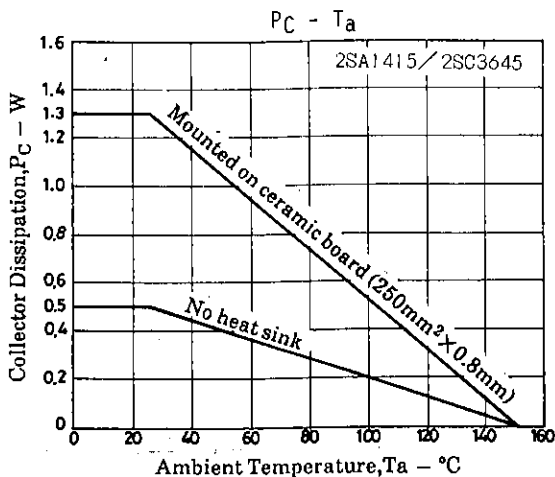
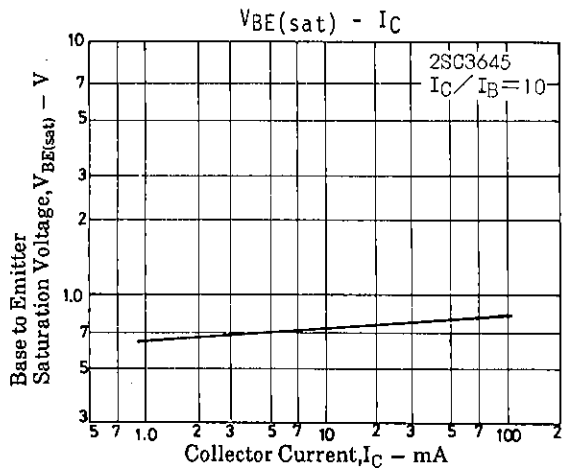
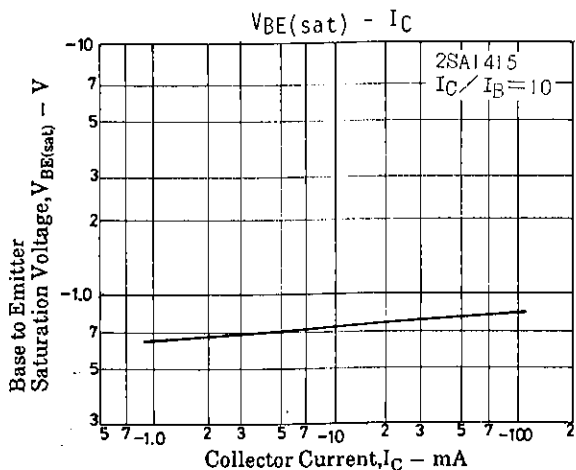
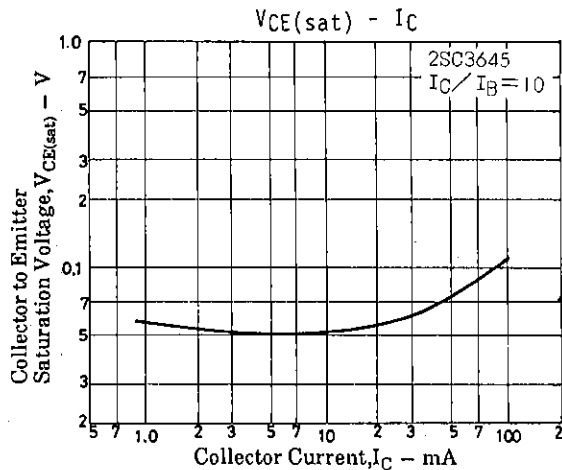
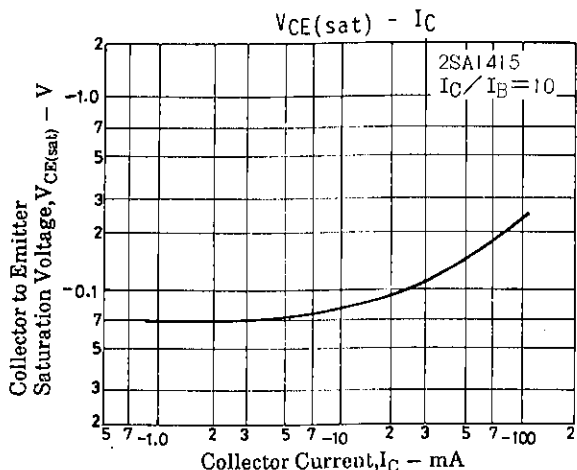
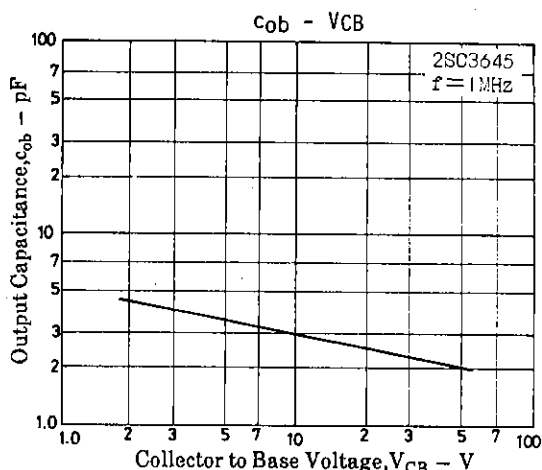
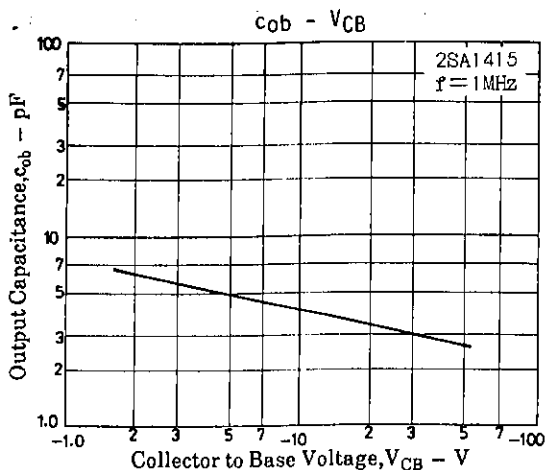
SANYO: PCP
(Bottom View)

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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



2SA1415/2SC3645



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