

SANYO	No.2006A	2SA1417/2SC3647
		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.

(): 2SA1417

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	(-)2 A
Collector Current(Pulse)	I_{CP}	(-)3 A
Collector Dissipation	P_C	500 mW
	Mounted on ceramic board (250mm ² x 0.8mm)	1.5 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} $V_{CB}=(-)100V, I_E=0$			(-)100	nA
Emitter Cutoff Current	I_{EBO} $V_{EB}=(-)4V, I_C=0$			(-)100	nA
DC Current Gain	h_{FE} $V_{CE}=(-)5V, I_C=(-)100mA$	100*		400*	
Gain-Bandwidth Product	f_T $V_{CE}=(-)10V, I_C=(-)100mA$		120		MHz
Output Capacitance	c_{ob} $V_{CB}=(-)10V, f=1MHz$		(25)		pF
			16		pF
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=(-)1A, I_B=(-)100mA$		(-)0.22	(-)0.6	V
			0.13	0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$ $I_C=(-)1A, I_B=(-)100mA$		(-)0.85	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$ $I_C=(-)10\mu A, I_E=0$		(-)120		V
C-E Breakdown Voltage	$V_{(BR)CEO}$ $I_C=(-)1mA, R_{BE}=\infty$		(-)100		V
E-B Breakdown Voltage	$V_{(BR)EBO}$ $I_E=(-)10\mu A, I_C=0$		(-)6		V

* The 2SA1417/2SC3647 are classified by 100mA h_{FE} as follows:

100	R	200	140	S	280	200	T	400
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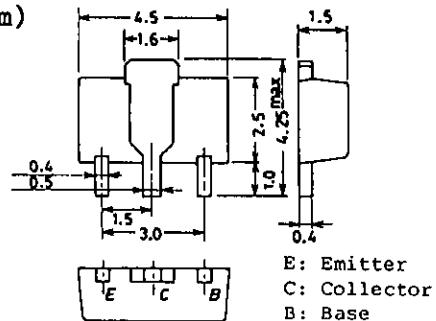
Marking 2SA1417:AC

2SC3647:CC

h_{FE} rank :R,S,T

Package Dimensions 2038

(unit:mm)



(Bottom View)

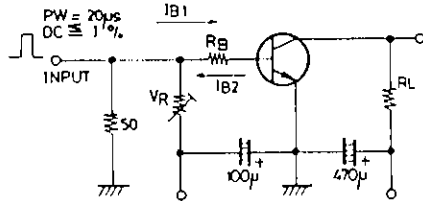
SANYO: PCP

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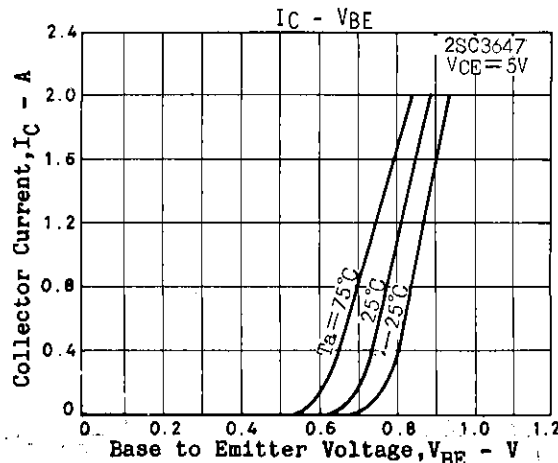
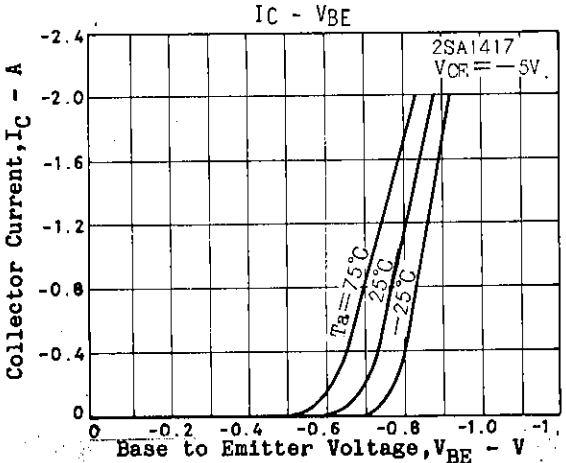
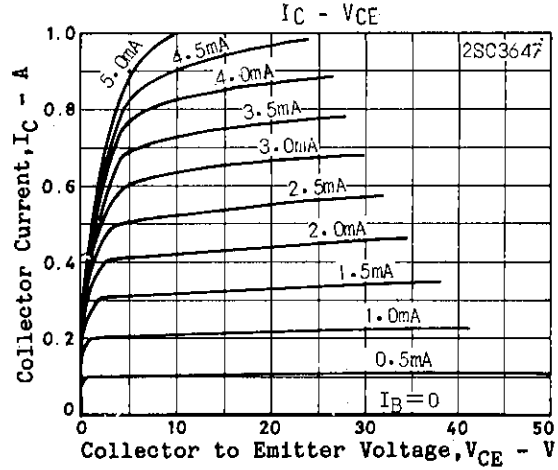
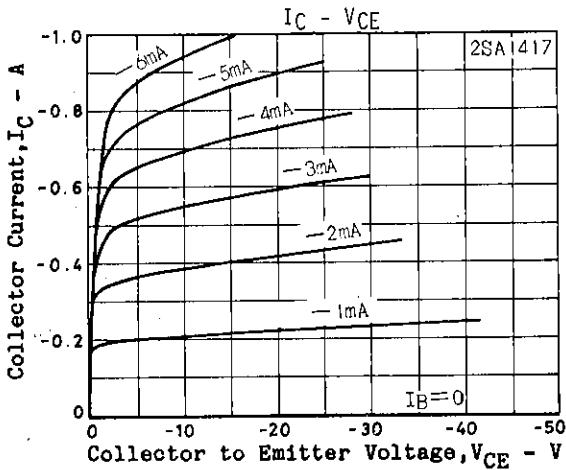
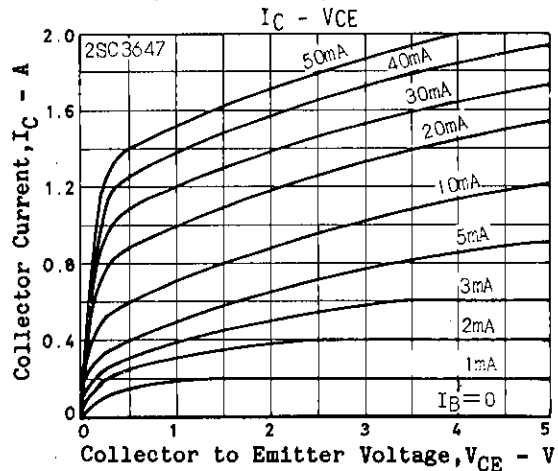
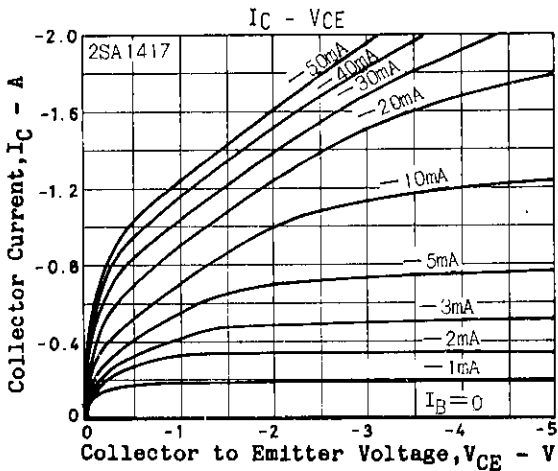
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			min	typ	max	unit
Turn-ON Time	t_{on}	See specified Test Circuit.		(80)		ns
				80		ns
Storage Time	t_{stg}			(750)		ns
				1000		ns
Fall Time	t_f			(40)		ns
				50		ns

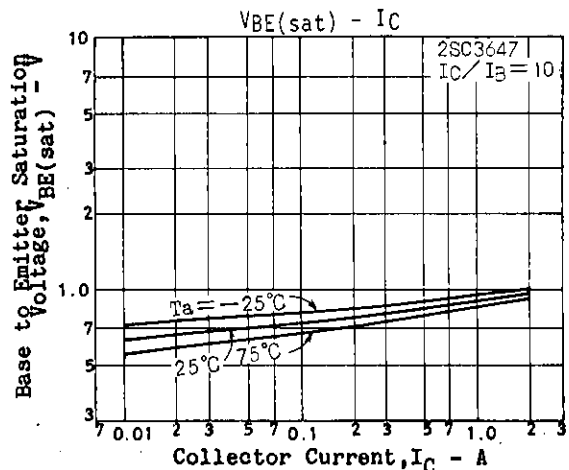
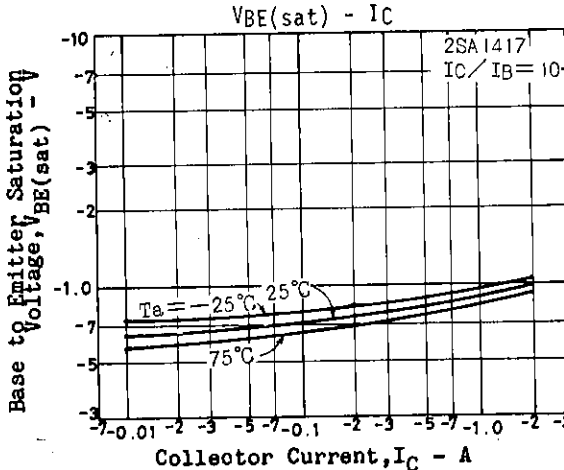
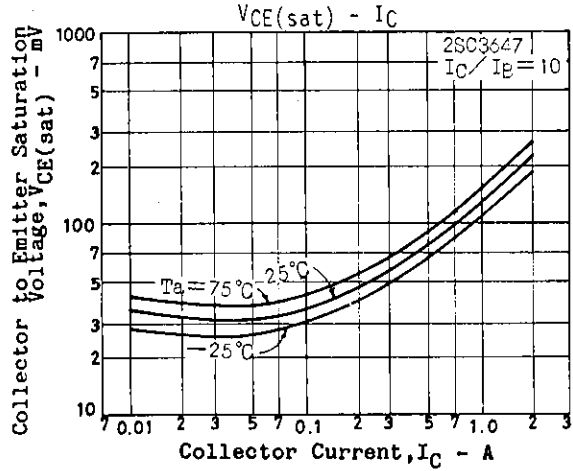
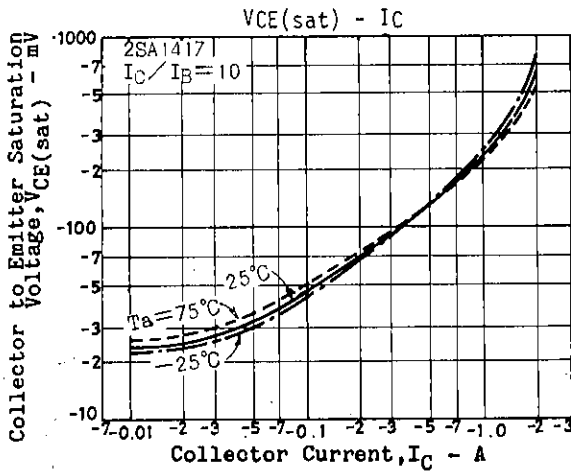
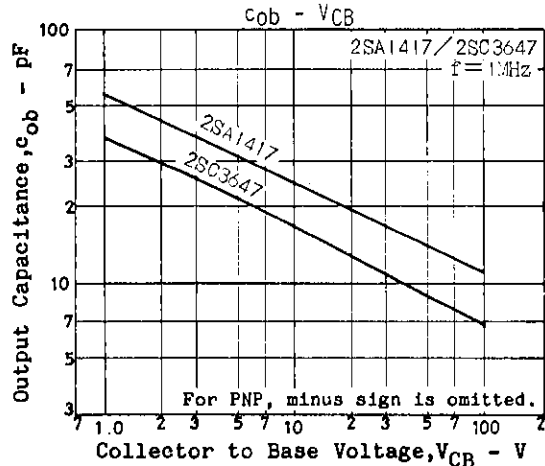
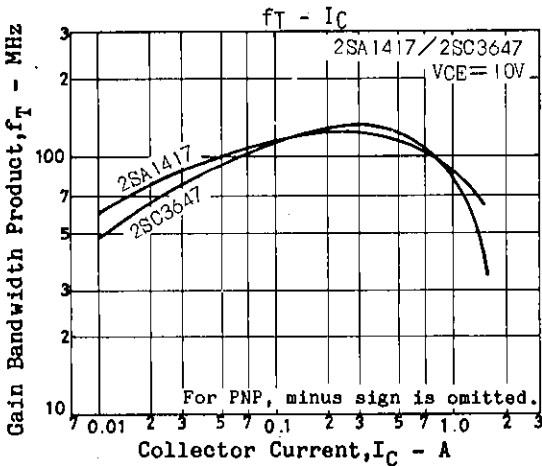
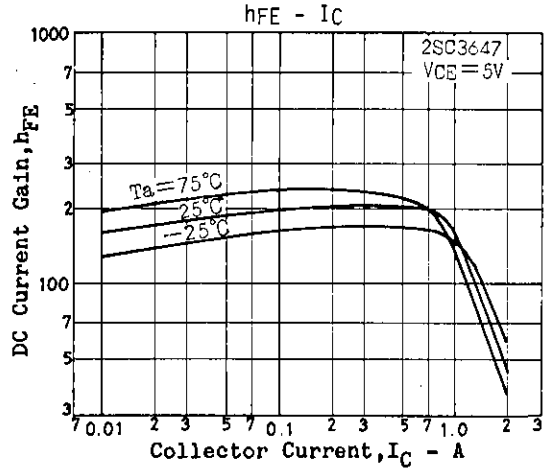
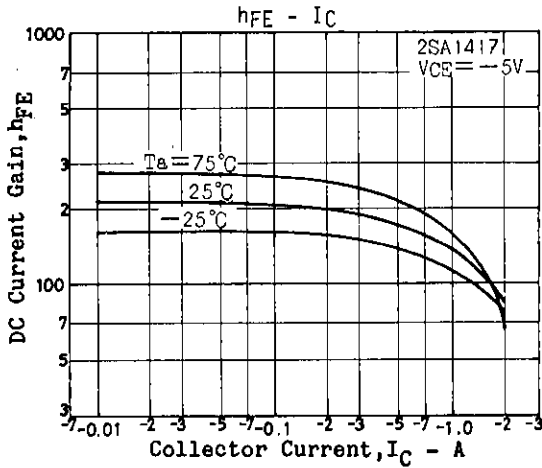
Switching Time Test Circuit

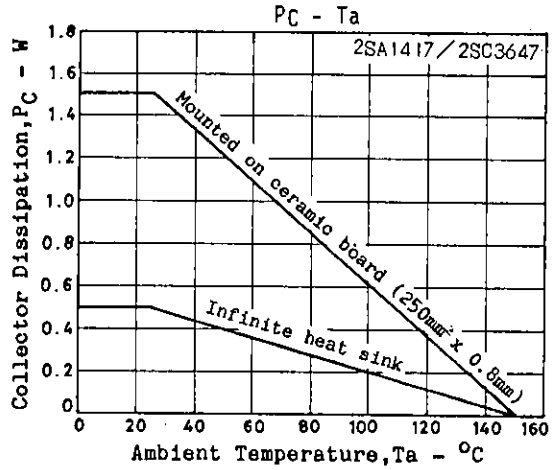
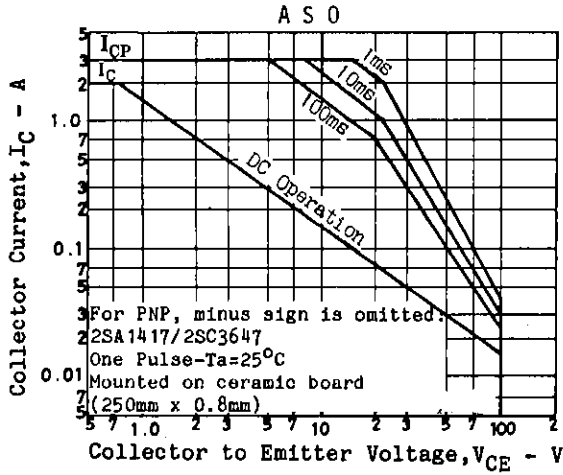


Unit (Resistance : Ω , Capacitance : F)
 $10IB1 = -10IB2 = IC = 0.7A$ (For PNP, the polarity is reversed.)



2SA1417/2SC3647





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