

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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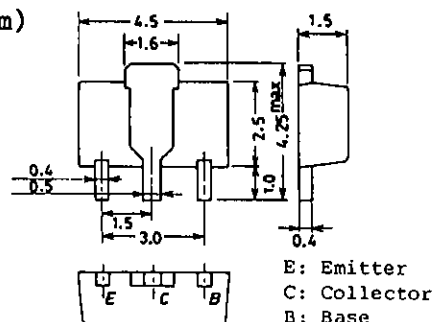
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Marking 2SA1417:AC

2SC3647:CC

 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

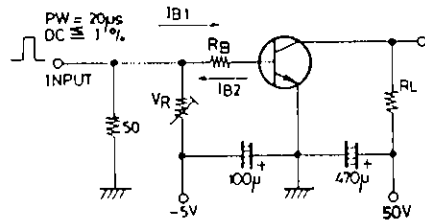
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3277KI/N255MW, TS No.2006-1/4

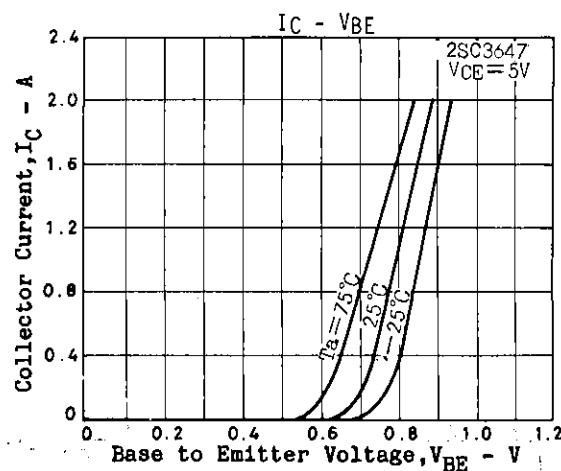
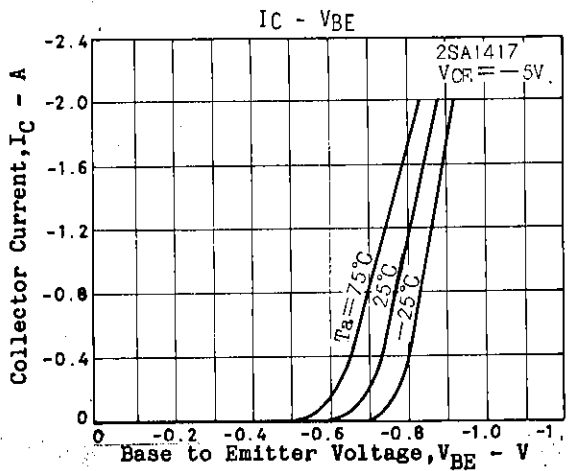
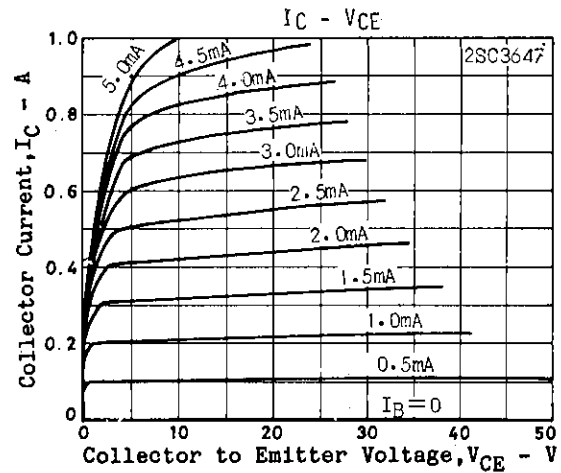
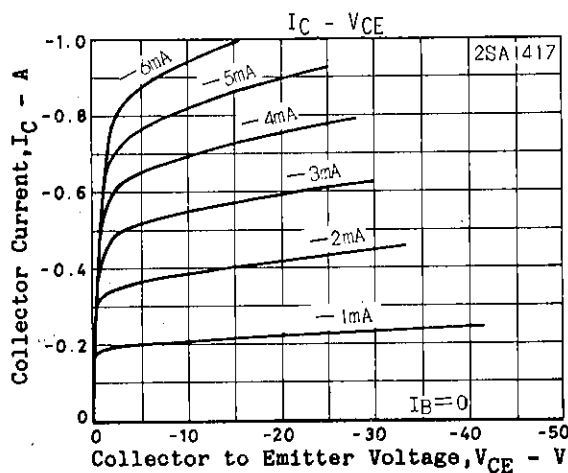
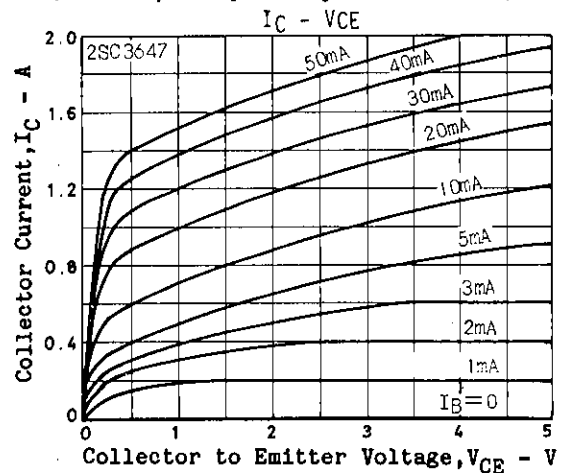
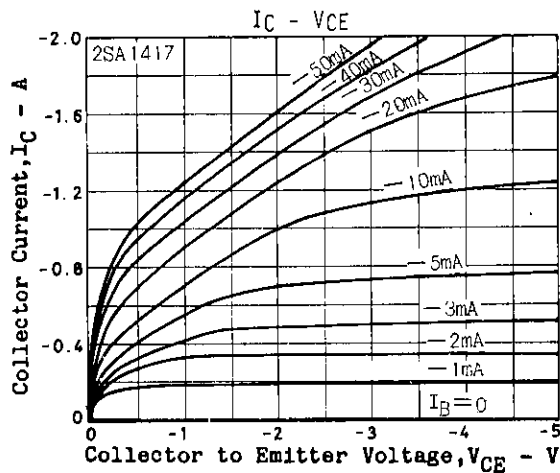
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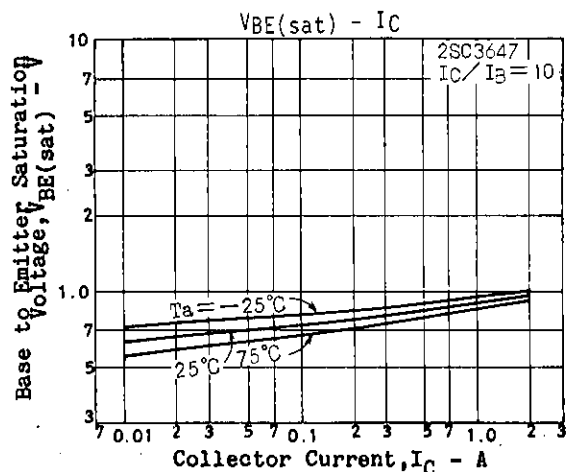
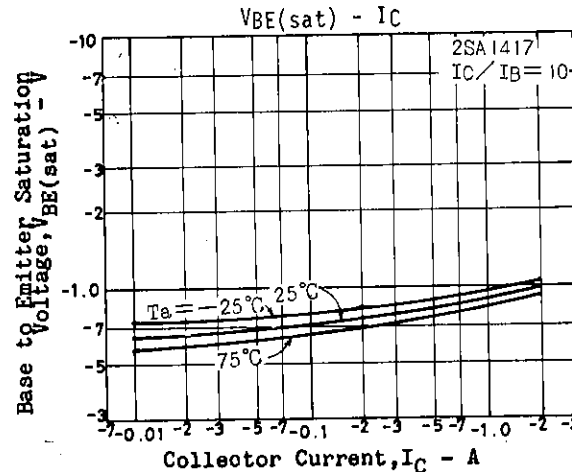
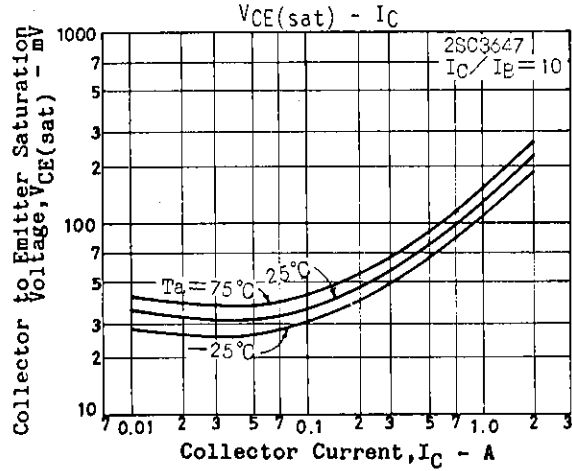
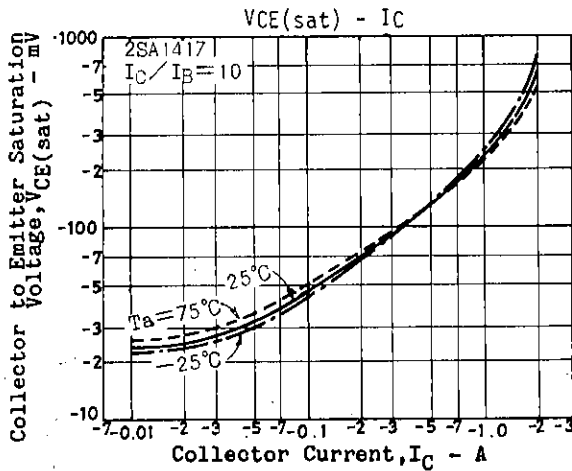
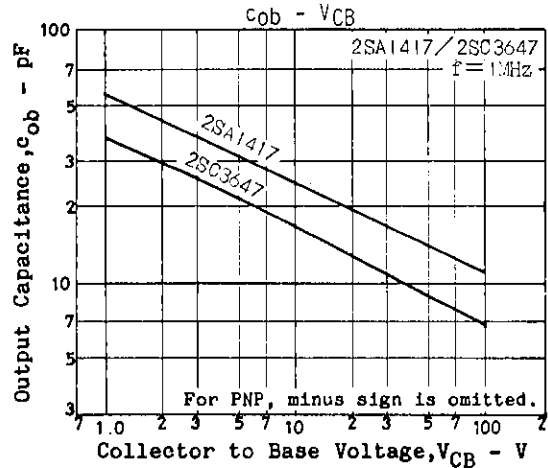
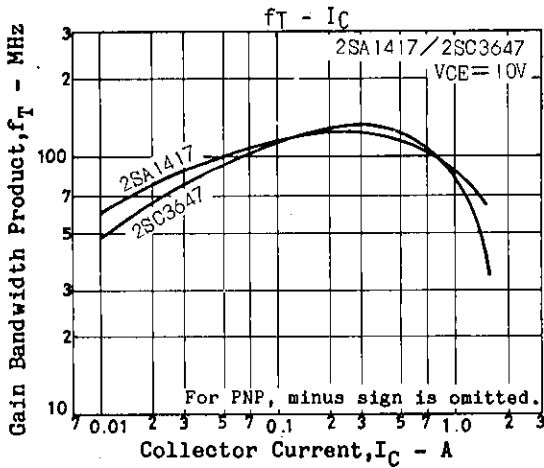
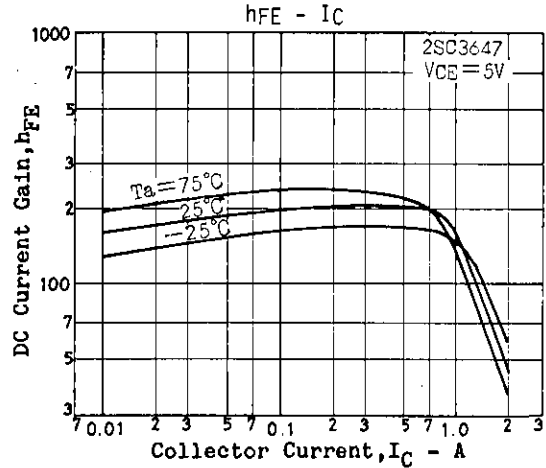
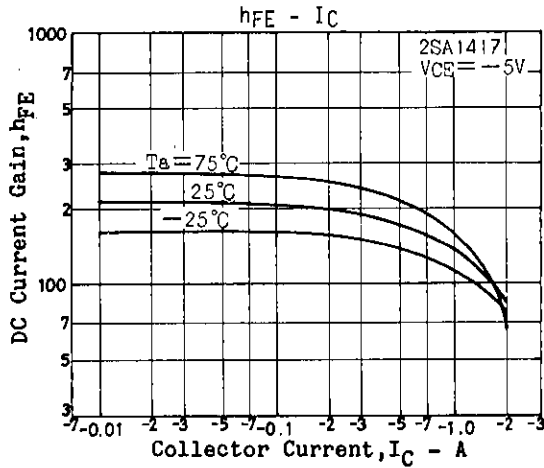
			min	typ	max	unit
Turn-ON Time	t_{on}	See specified Test Circuit.		(80)		ns
				80		ns
Storage Time	t_{stg}			(750)		ns
				1000		ns
Fall Time	t_f			(40)		ns
				50		ns

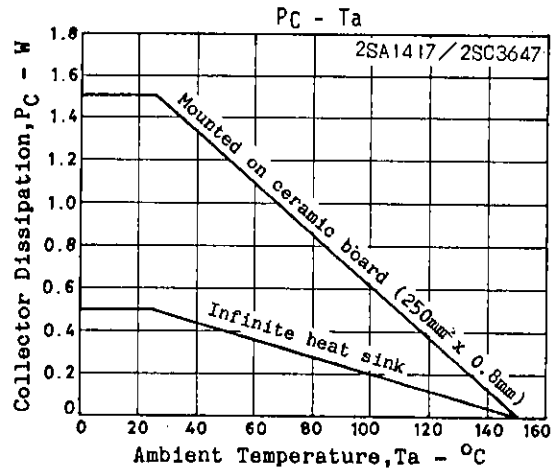
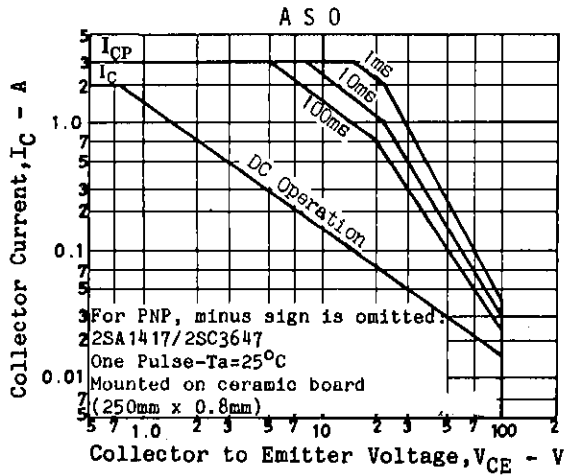
Switching Time Test Circuit



$10IB1 = -10IB2 = I_C = 0.7A$ (For PNP, the polarity is reversed.)

Unit (Resistance: Ω , Capacitance: F)





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