

**SANYO**

No.2007A

**2SA1419/2SC3649**

PNP/NPN Epitaxial Planar Silicon Transistors

High-Voltage Switching Applications

**Features**

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

( ): 2SA1419

**Absolute Maximum Ratings at Ta=25°C**

			unit
Collector to Base Voltage	$V_{CB0}$	(-)180	V
Collector to Emitter Voltage	$V_{CEO}$	(-)160	V
Emitter to Base Voltage	$V_{EBO}$	(-)6	V
Collector Current	$I_C$	(-)1.5	A
Collector Current(Pulse)	$I_{CP}$	(-)2.5	A
Collector Dissipation	$P_C$	500	mW
	Mounted on ceramic board(250mm <sup>2</sup> x0.8mm)	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	$I_{CBO}$			(-)1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$			(-)1	$\mu A$
DC Current Gain	$h_{FE(1)}$		100*	400*	
	$h_{FE(2)}$		80		
Gain-Bandwidth Product	$f_T$		120		MHz
Output Capacitance	$c_{ob}$		(22)		pF
			14		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$	(-200)(-500)		mV
			130	450	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$	(-)0.85(-)1.2		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	(-)180		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)160		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)6		V

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\*: The 2SA1419/2SC3649 are classified by 100mA  $h_{FE}$  as follows:

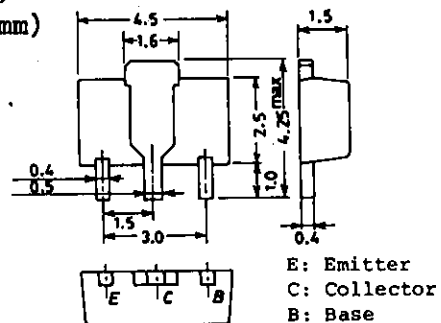
100	R	200	140	S	280	200	T	400
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Marking 2SA1419:AE

2SC3649:CE

 $h_{FE}$  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**

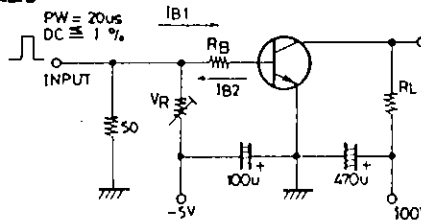
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4277TA, TS No.2007-1/4

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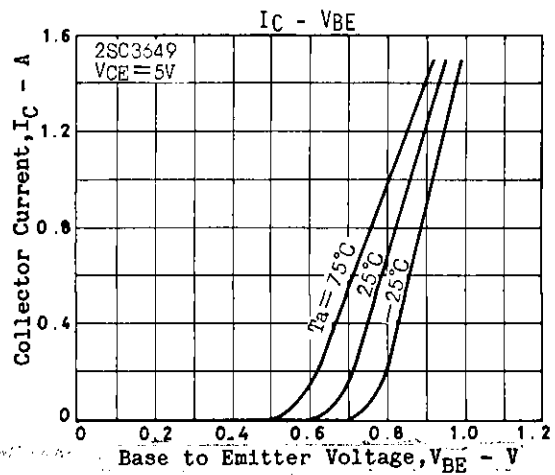
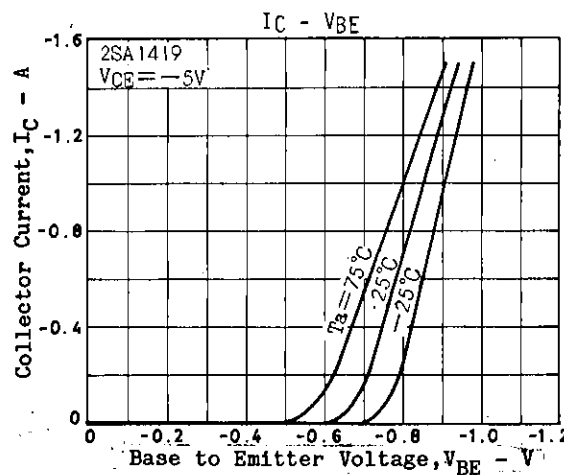
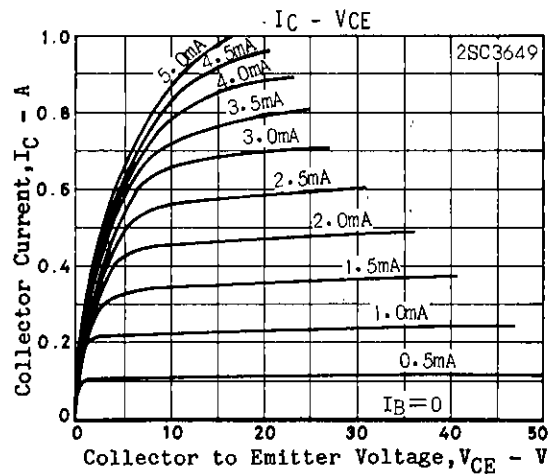
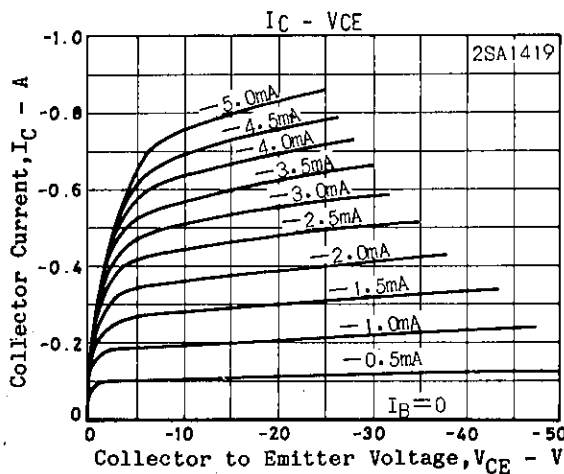
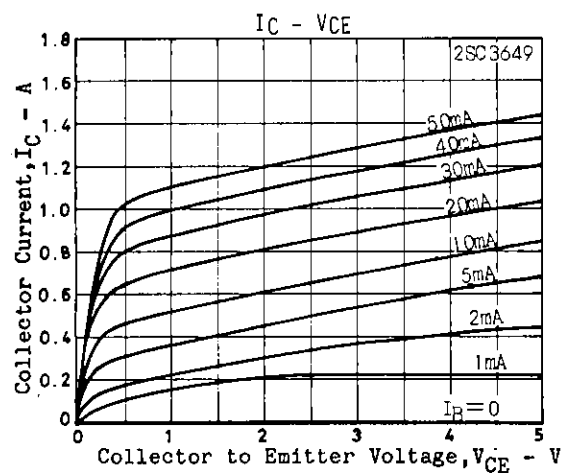
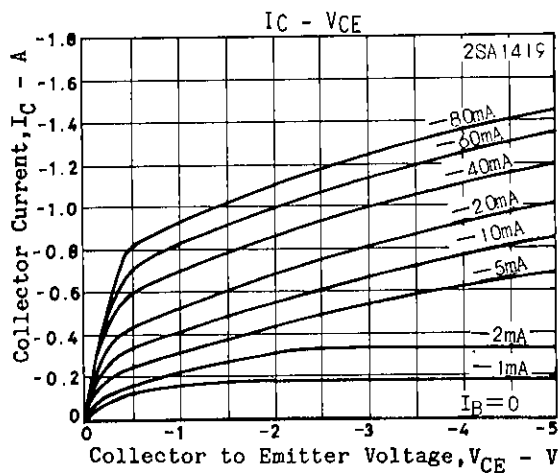
			min	typ	max	unit
Turn-on Time	$t_{on}$	See specified Test Circuit.		(40)		ns
				40		ns
Storage Time	$t_{stg}$			(0.7)		$\mu$ s
				1.2		$\mu$ s
Fall Time	$t_f$			(40)		ns
				80		ns

## Switching Time Test Circuit

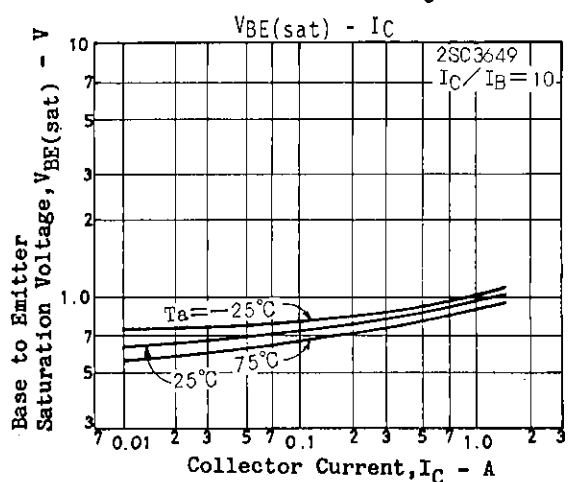
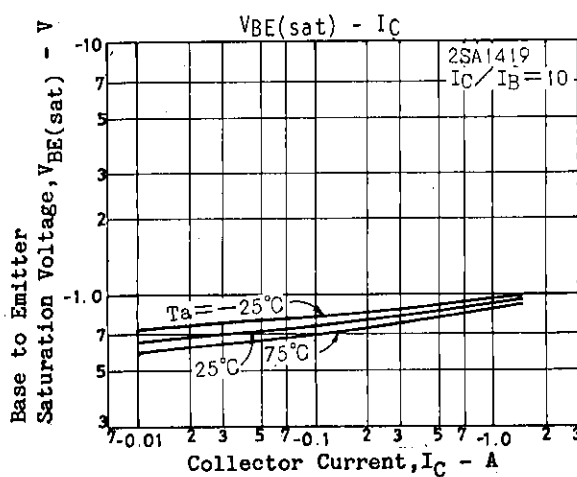
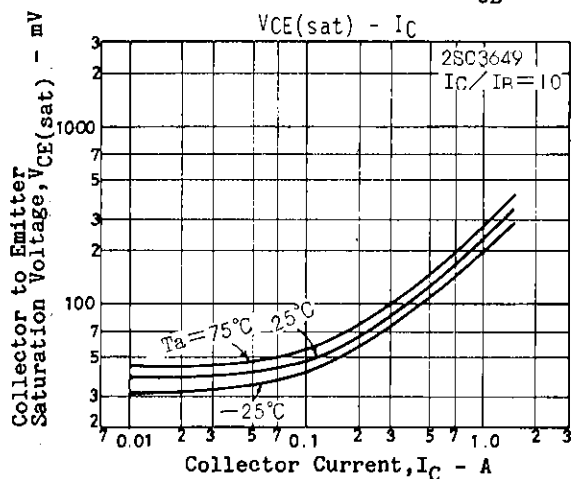
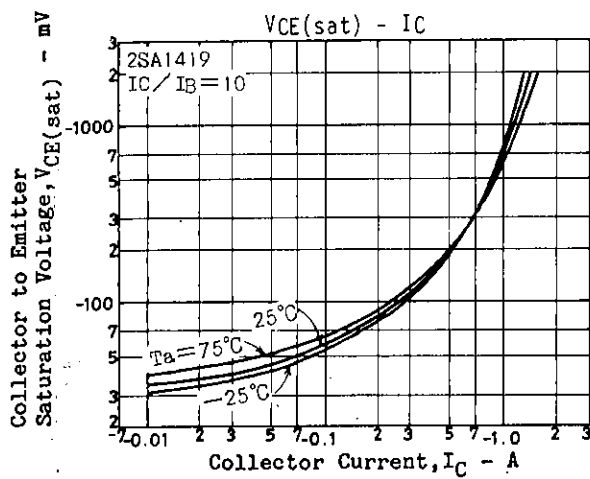
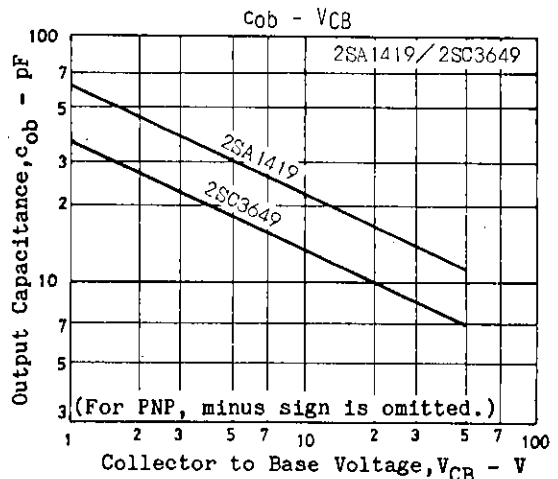
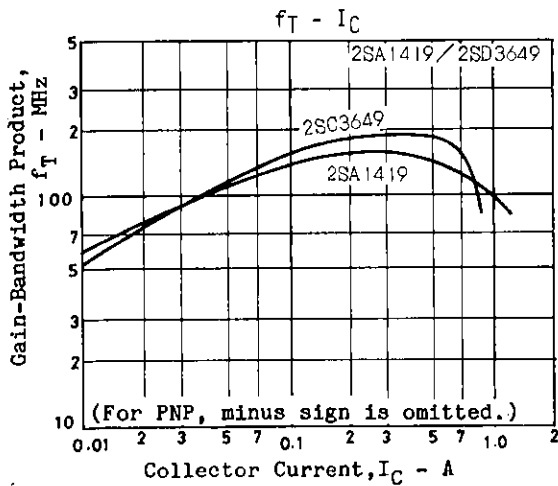
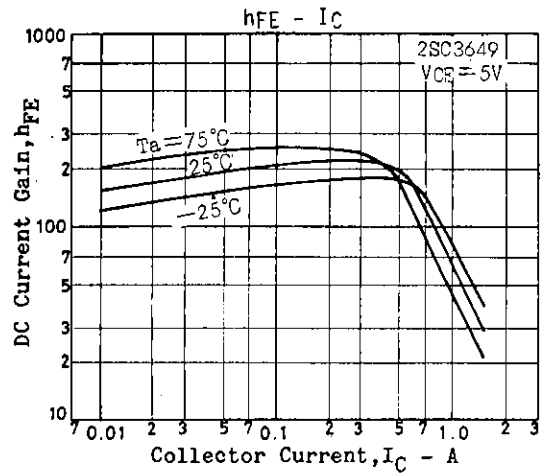
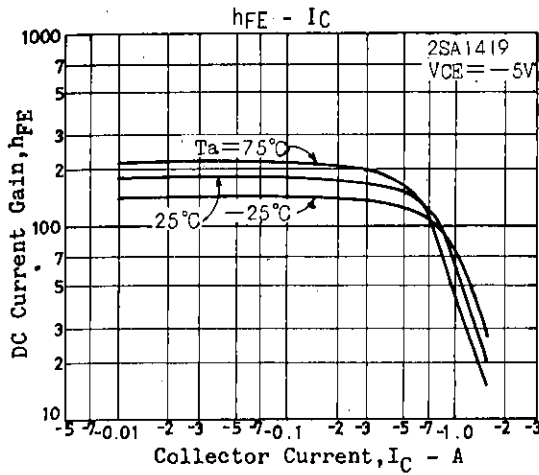


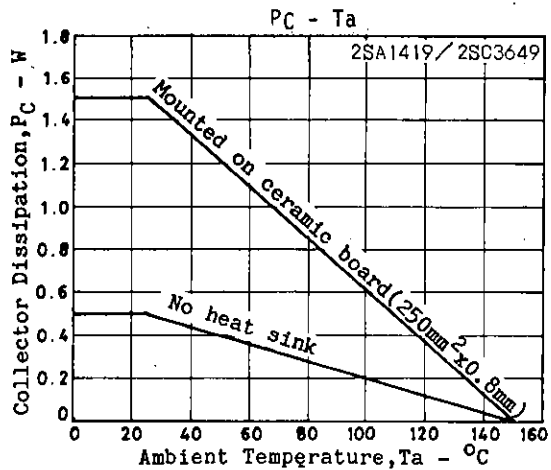
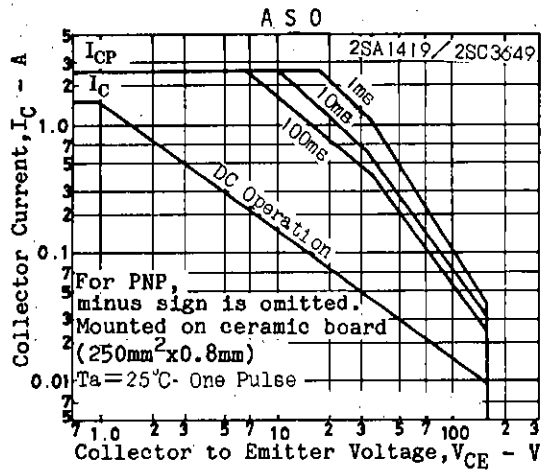
$$I_C = 10I_{B1} = -10I_{B2} = 0.7A$$

Unit (Resistance:  $\Omega$ , Capacitance: F)  
(For PNP, the polarity is reversed.)



# 2SA1419/2SC3649





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