

<b>SANYO</b>	No.2007A	<b>2SA1419/2SC3649</b>
	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 <sub>CBO</sub>	(-)180 V
Collector to Emitter Voltage	V <sub>CEO</sub>	(-)160 V
Emitter to Base Voltage	V <sub>EBO</sub>	(-)6 V
Collector Current	I <sub>C</sub>	(-)1.5 A
Collector Current(Pulse)	I <sub>CP</sub>	(-)2.5 A
Collector Dissipation	P <sub>C</sub>	500 mW
Mounted on ceramic board(250mm <sup>2</sup> x0.8mm)		
Junction Temperature	T <sub>j</sub>	150 °C
Storage Temperature	T <sub>stg</sub>	-55 to +150 °C

Electrical Characteristics at Ta=25°C		min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub> V <sub>CB</sub> =(-)120V, I <sub>E</sub> =0			(-)1	µA
Emitter Cutoff Current	I <sub>EBO</sub> V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)1	µA
DC Current Gain	h <sub>FE</sub> (1) V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)100mA	100*		400*	
	h <sub>FE</sub> (2) V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)10mA	80			
Gain-Bandwidth Product	f <sub>T</sub> V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA		120		MHz
	Output Capacitance	c <sub>ob</sub> V <sub>CB</sub> =(-)10V, f=1MHz		(22)	pF
C-E Saturation Voltage	V <sub>CE(sat)</sub> I <sub>C</sub> =(-)500mA, I <sub>B</sub> =(-)50mA			(-200)(-500)	mV
				130 450	mV
B-E Saturation Voltage	V <sub>BE(sat)</sub> I <sub>C</sub> =(-)500mA, I <sub>B</sub> =(-)50mA			(-)0.85(-)1.2	V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub> I <sub>C</sub> =10µA, I <sub>E</sub> =0	(-)180			V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub> I <sub>C</sub> =(-)1mA, R <sub>BE</sub> =∞	(-)160			V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub> I <sub>E</sub> =(-)10µA, I <sub>C</sub> =0	(-)6			V

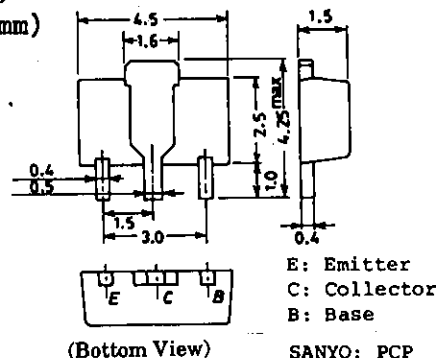
Continued on next page.

\*: The 2SA1419/2SC3649 are classified by 100mA h<sub>FE</sub> as follows:

100	R	200	140	S	280	200	T	400
-----	---	-----	-----	---	-----	-----	---	-----

Marking 2SA1419:AE  
2SC3649:CE  
h<sub>FE</sub> rank :R,S,T

**Package Dimensions 2038**  
(unit:mm)



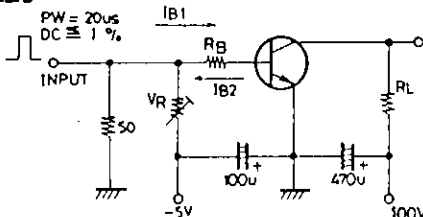
(Bottom View)

SANYO: PCP

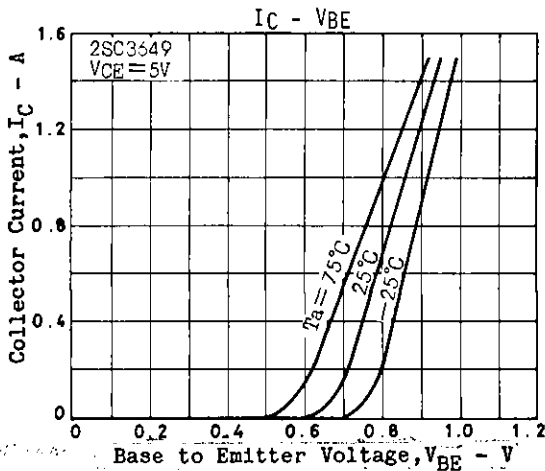
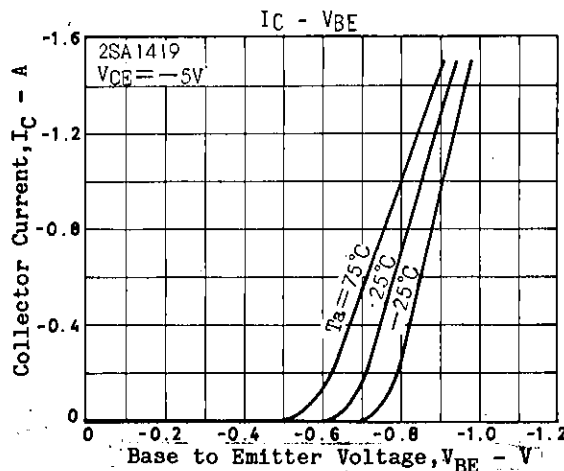
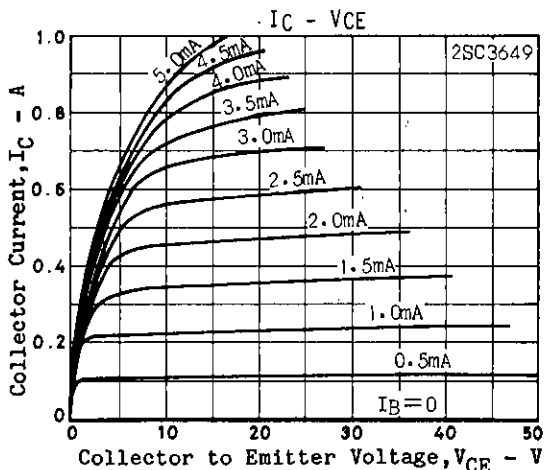
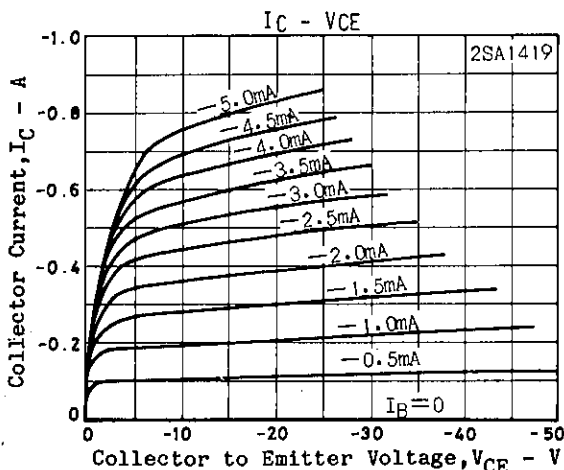
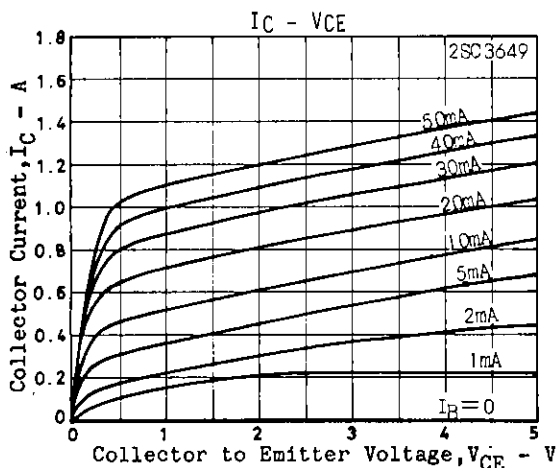
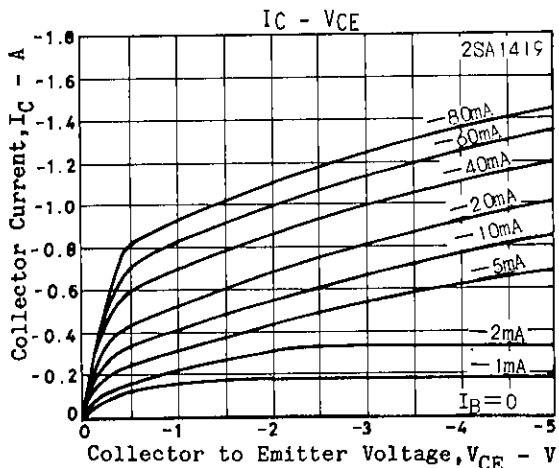
Continued from preceding page.

			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

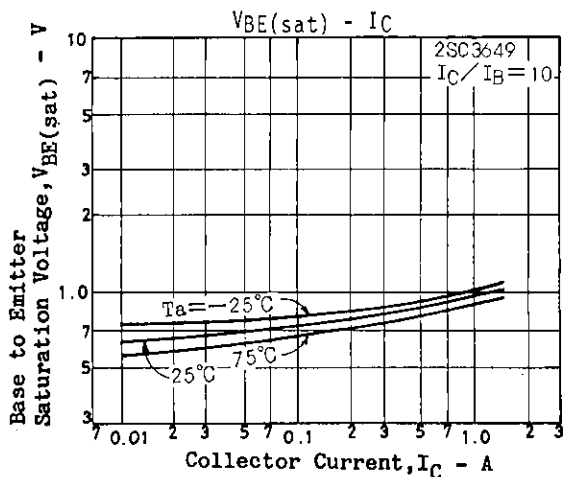
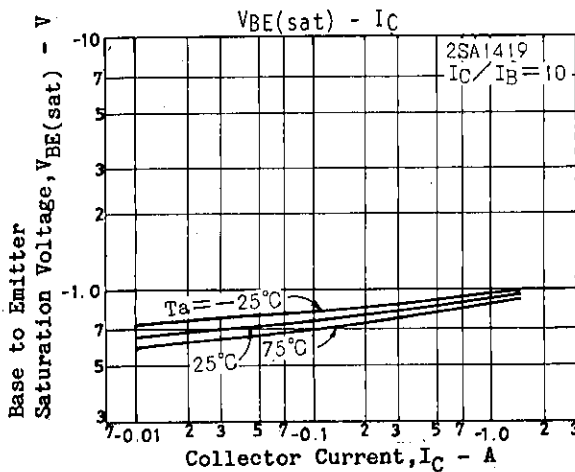
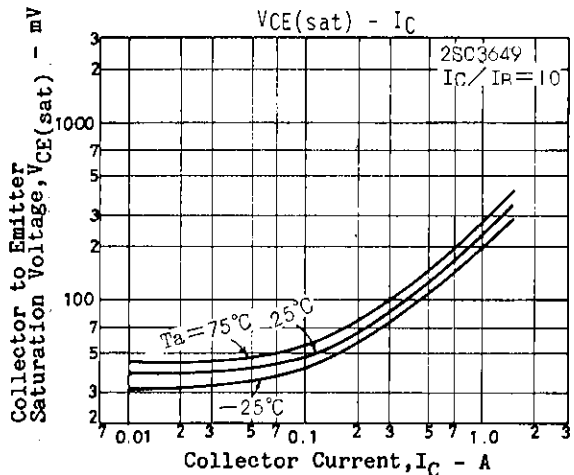
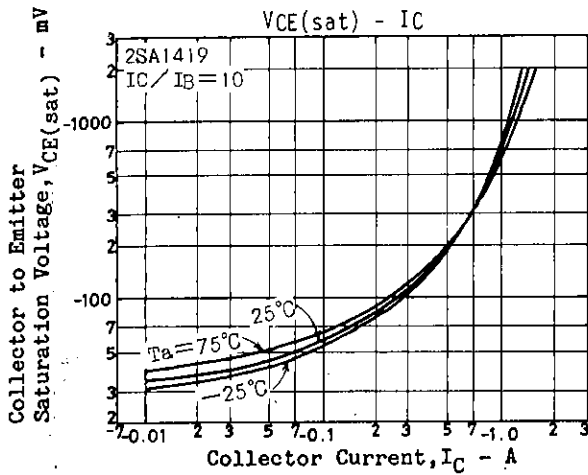
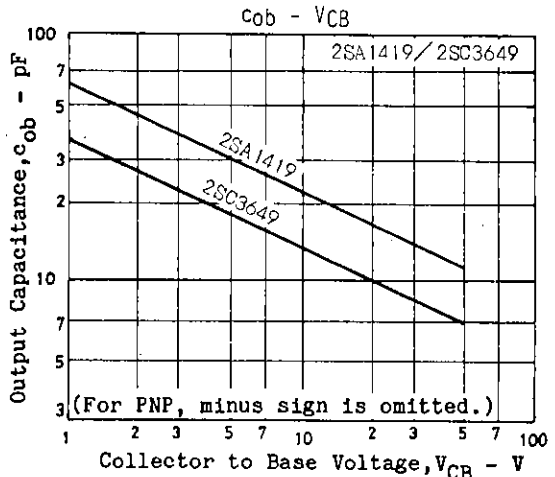
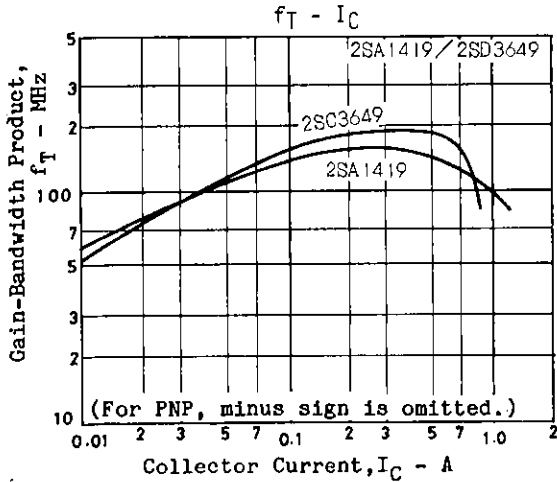
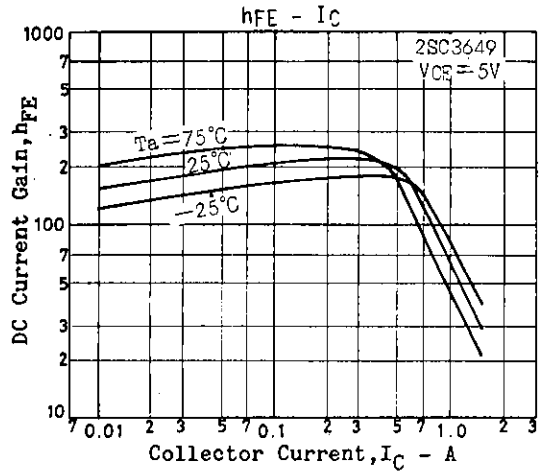
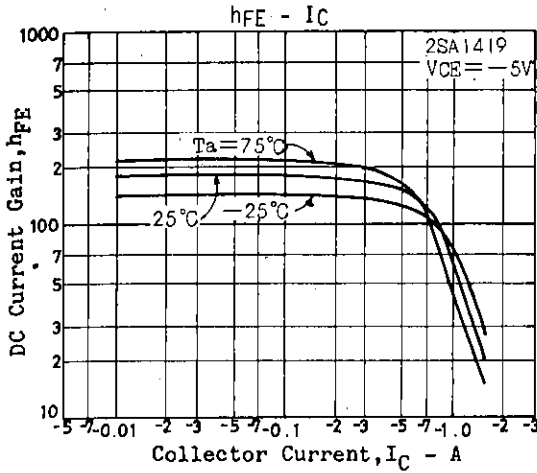
Switching Time Test Circuit

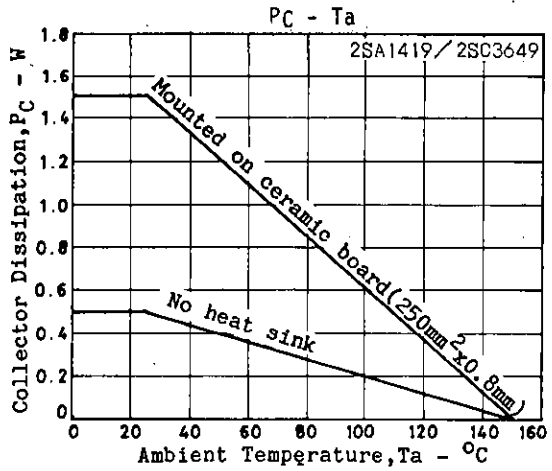
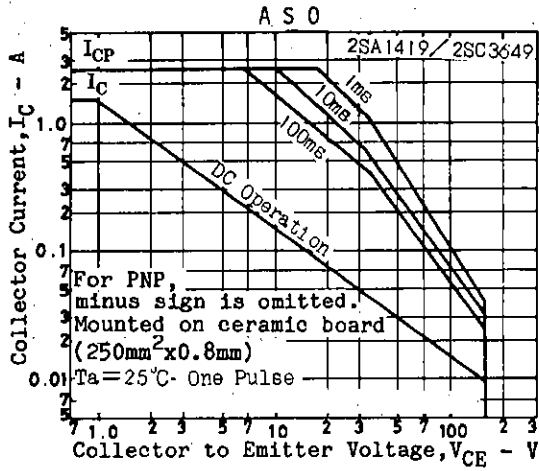


$I_C = 10I_{B1} = -10I_{B2} = 0.7A$  (For PNP, the polarity is reversed.)  
Unit (Resistance:  $\Omega$ , Capacitance: F)



2SA1419/2SC3649





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.