

<b>SANYO</b>	No.3139	<b>2SC4520</b>
NPN Epitaxial Planar Silicon Transistor		
High-Speed Switching Applications		

**Features**

- Adoption of FBET, MBIT processes
- Large current capacity
- Low collector-to-emitter saturation voltage
- Fast switching speed
- Small-sized package

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

			unit
Collector to Base Voltage	V <sub>CB0</sub>	60	V
Collector to Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter to Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	1.5	A
Collector Current(Pulse)	I <sub>CP</sub>	3	A
Collector Dissipation	P <sub>C</sub> Mounted on ceramic board (250mm <sup>2</sup> × 0.8mm)	1.3	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**Electrical Characteristics at Ta = 25°C**

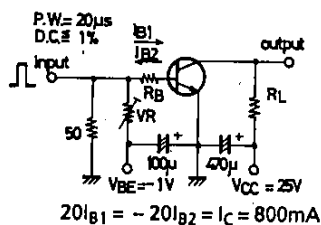
			min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 45V, I <sub>E</sub> = 0			1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> = 0			1	μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 100mA	100*		400*	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 1.5A	40			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 100mA		300		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1MHz		13		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 800mA, I <sub>B</sub> = 40mA	0.25	0.7		V
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 800mA, I <sub>B</sub> = 40mA	0.9	1.3		V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	60			V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	45			V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	5			V
Turn-ON Time	t <sub>on</sub>	See specified Test Circuit.		50	100	ns
Storage Time	t <sub>stg</sub>	∞		150	270	ns
Turn-OFF Time	t <sub>off</sub>	∞		180	350	ns

\* : The 2SC4520 is classified by 100mA h<sub>FE</sub> as follows :

100	R	200	140	S	280	200	T	400
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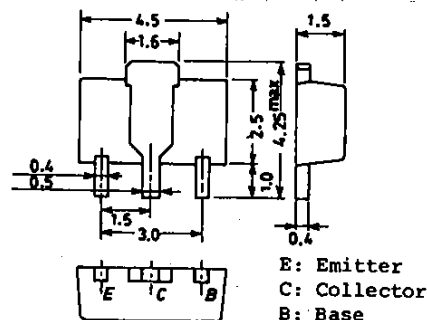
Marking : CK  
h<sub>FE</sub> rank : R,S,T

**Switching Time Test Circuit**



Unit (Resistance : Ω, Capacitance : F)

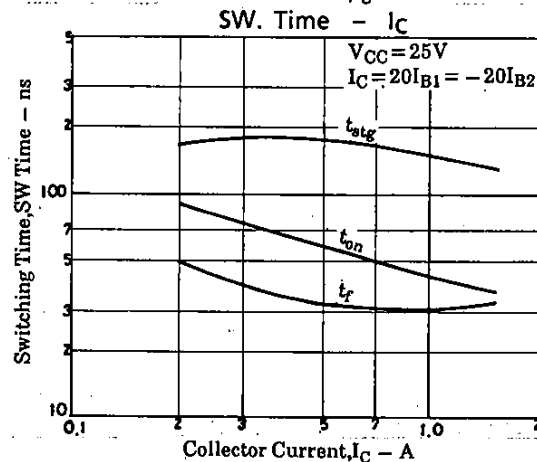
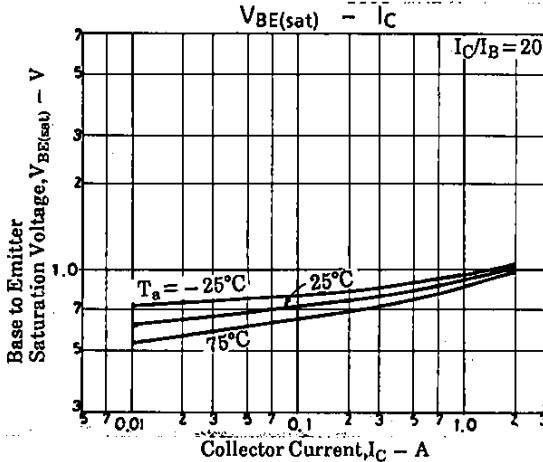
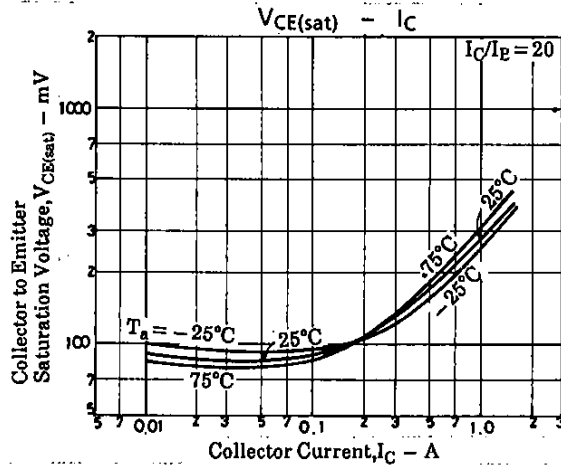
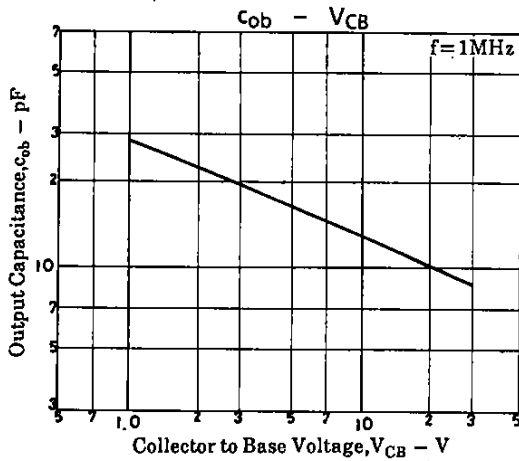
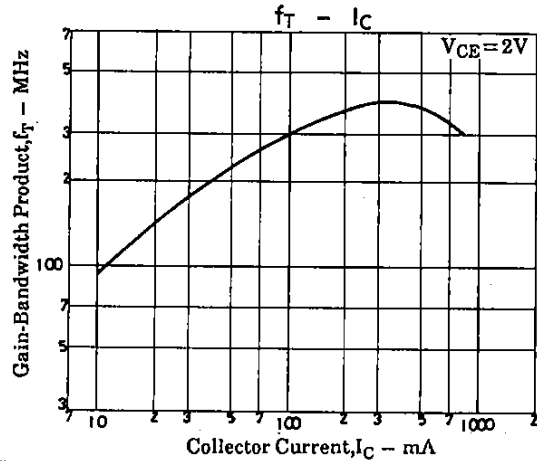
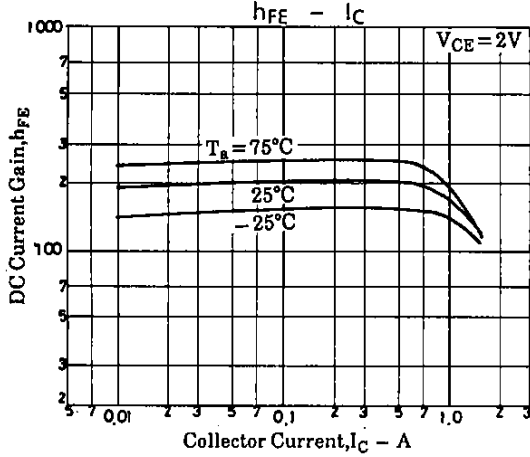
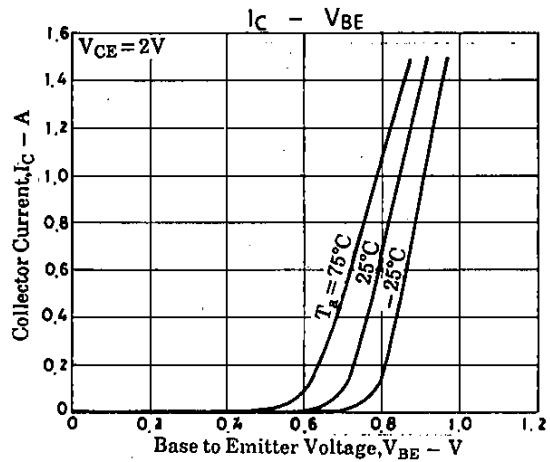
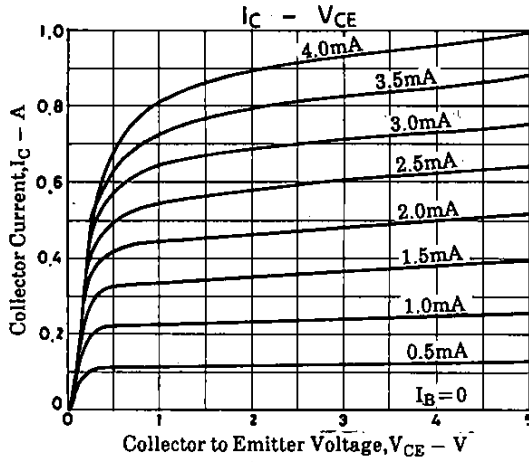
**Package Dimensions 2038**  
(unit : mm)



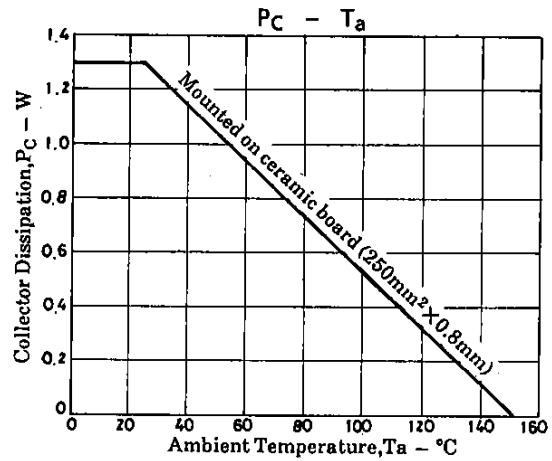
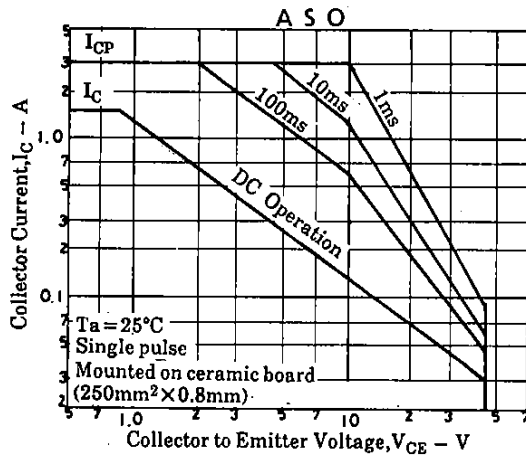
E: Emitter  
C: Collector  
B: Base

SANYO: PCP  
(Bottom View)

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## 2SC4520



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