



No.3138

**2SC4519**  
NPN Epitaxial Planar Silicon Transistor  
High-Speed Switching Applications

**Features**

- Adoption of FBET process
- 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>	500	mA
Collector Current(Pulse)	I <sub>CP</sub>	1	A
Collector Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

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

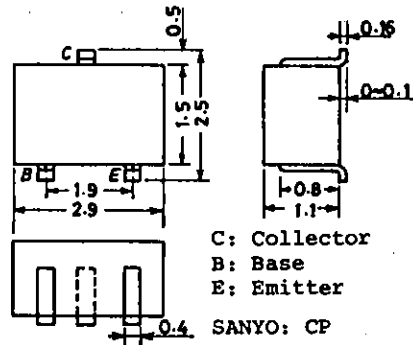
			min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 45V, I <sub>E</sub> = 0			0.5	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> = 0			0.5	μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 50mA	100*		400*	
			h <sub>FE</sub> (2)	40		
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 50mA		350		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1MHz		4		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 200mA, I <sub>B</sub> = 10mA	0.15	0.45		V
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 200mA, I <sub>B</sub> = 10mA	0.8	1.2		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.		60	120	ns
Storage Time	t <sub>stg</sub>	∞		150	270	ns
Turn-OFF Time	t <sub>off</sub>	∞		200	350	ns

\* : The 2SC4519 is classified by 50mA h<sub>FE</sub> as follows :

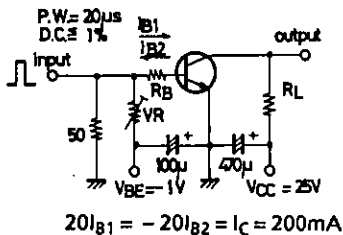
100	4	200	140	5	280	200	6	400
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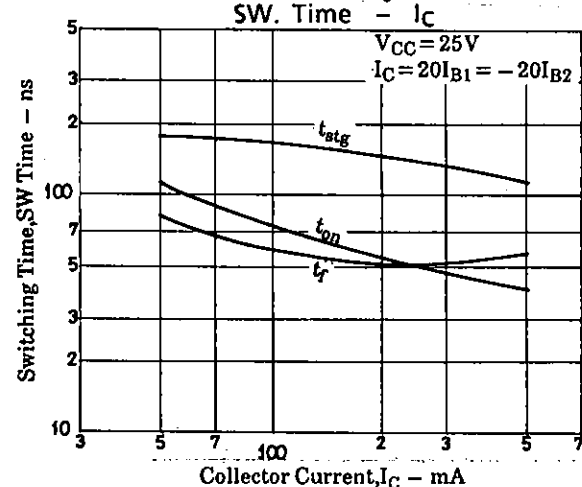
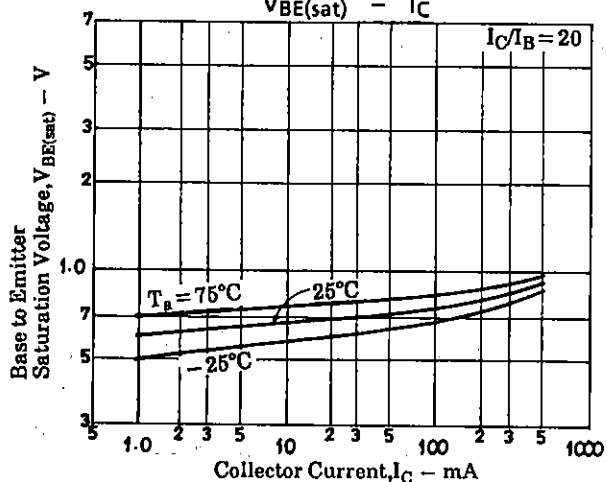
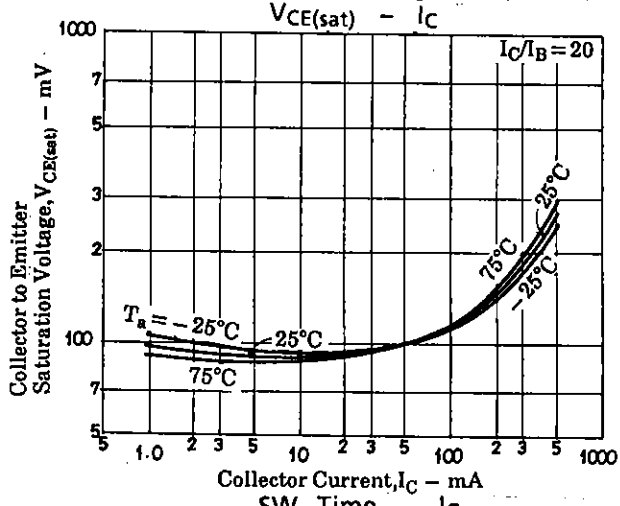
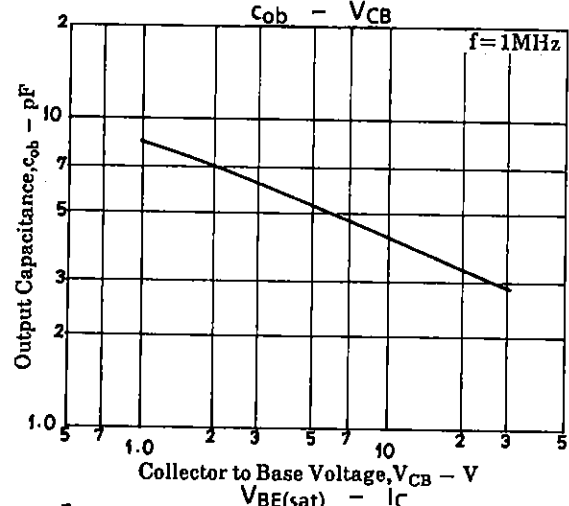
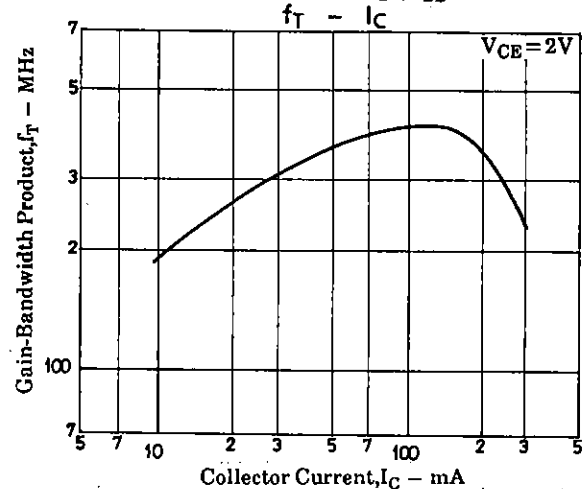
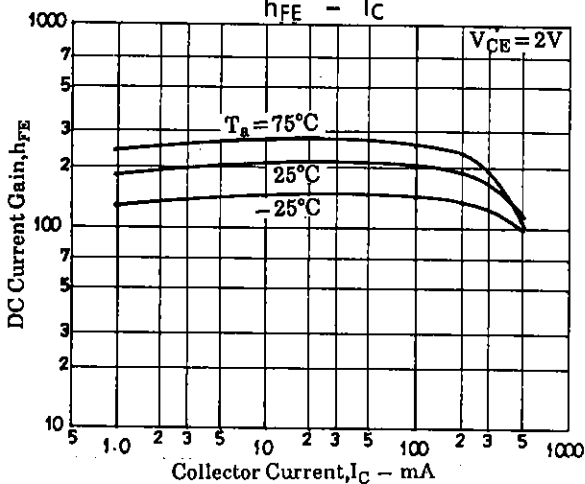
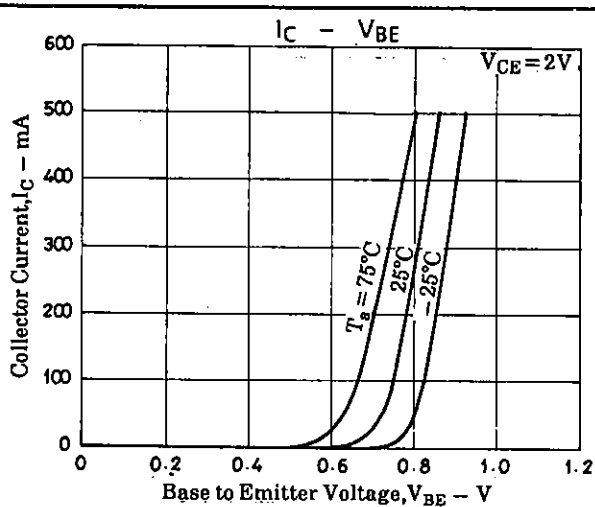
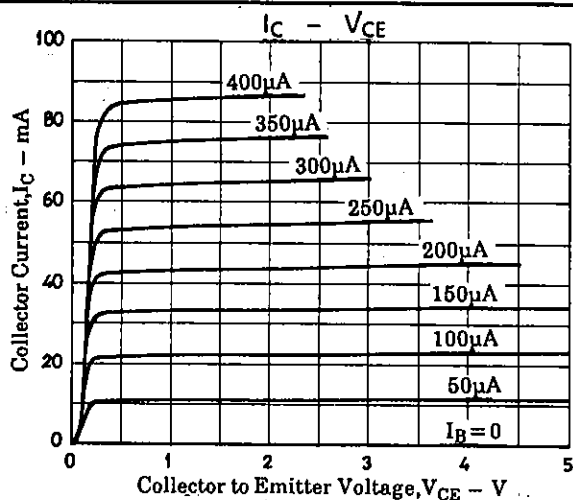
Marking : 1T  
h<sub>FE</sub> rank : 4,5,6

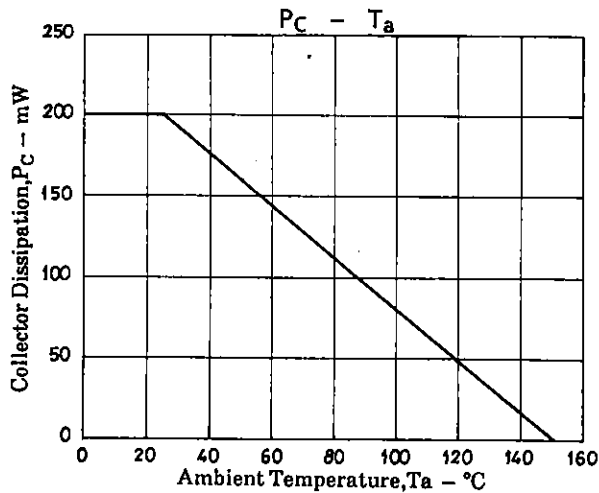
**Package Dimensions 2018A**  
(unit: mm)



**Switching Time Test Circuits**







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