



SANYO Semiconductors

DATA SHEET

2SC4520 — NPN Epitaxial Planar Silicon Transistor

High-Speed Switching Applications

Features

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

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		60	V
Collector-to-Emitter Voltage	VCEO		45	V
Emitter-to-Base Voltage	VEBO		5	V
Collector Current	IC		1.5	A
Collector Current (Pulse)	ICP		3	A
Collector Dissipation	PC	Mounted on a ceramic board (250mm ² ×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =45V, I _E =0A			1	μA
Emitter Cutoff Current	IEBO	V _{EB} =3V, I _C =0A			1	μA

Marking : CK

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE1}	$V_{CE}=2V, I_C=100mA$	100*		400*	
	h_{FE2}	$V_{CE}=2V, I_C=1.5A$	40			
Gain-Bandwidth Product	f_T	$V_{CE}=2V, I_C=100mA$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		13		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=800mA, I_B=40mA$		0.25	0.7	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=800mA, I_B=40mA$		0.9	1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	45			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50	100	ns
Storage Time	t_{stg}	See specified Test Circuit.		150	270	ns
Turn-OFF Time	t_{off}	See specified Test Circuit.		180	350	ns

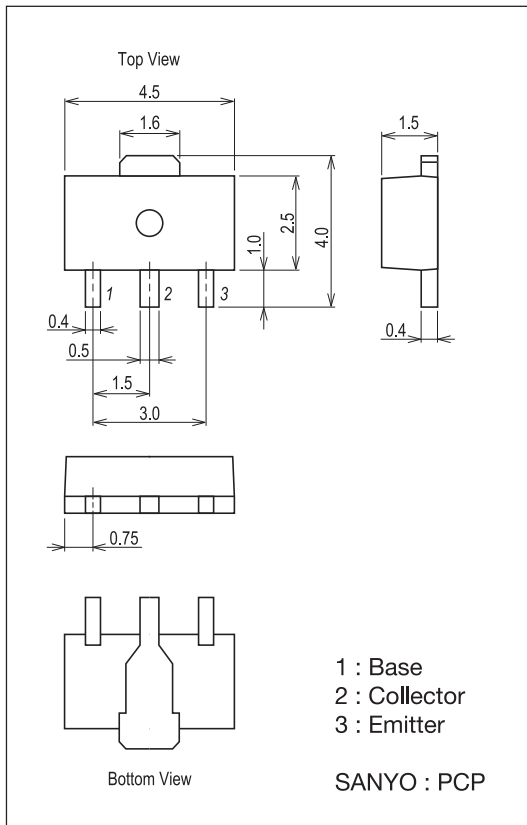
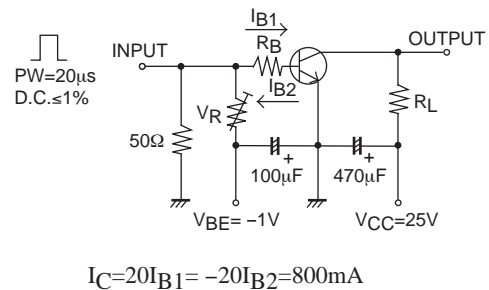
*: The 2SC4520 is classified by 100mA h_{FE} as follows:

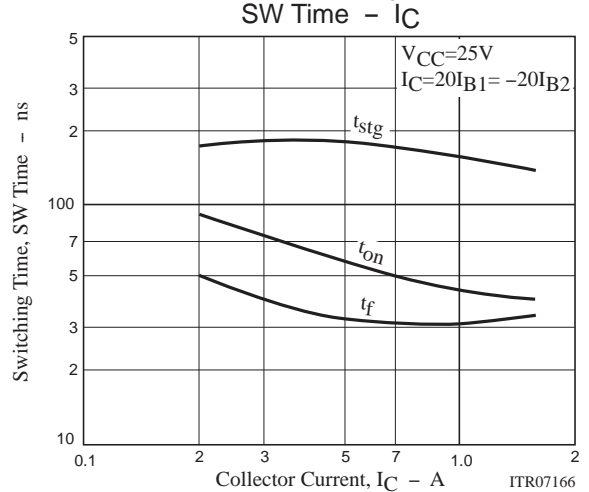
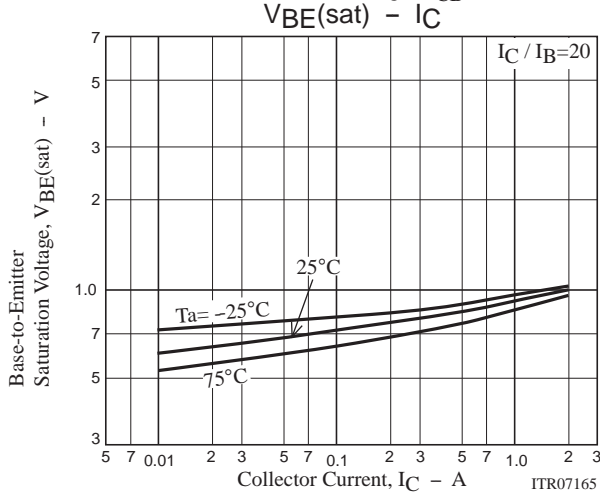
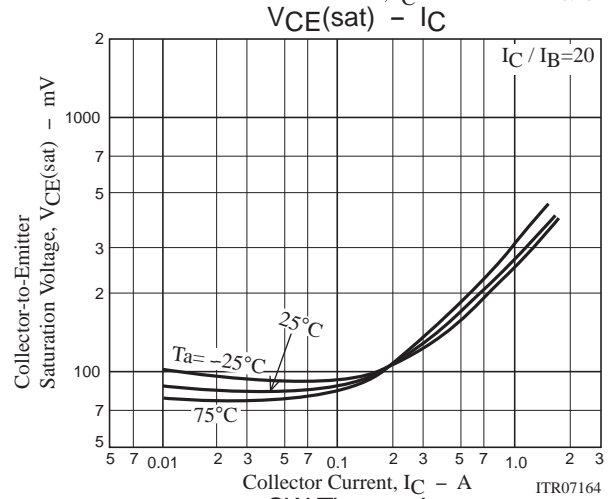
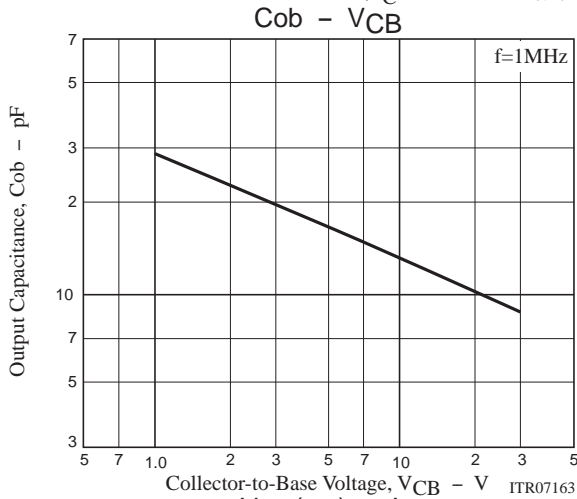
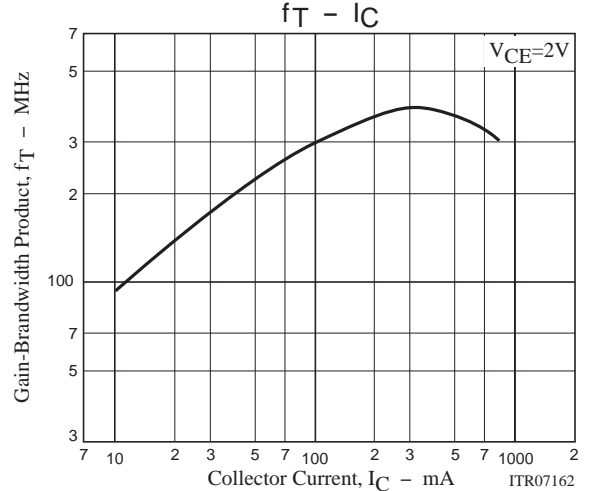
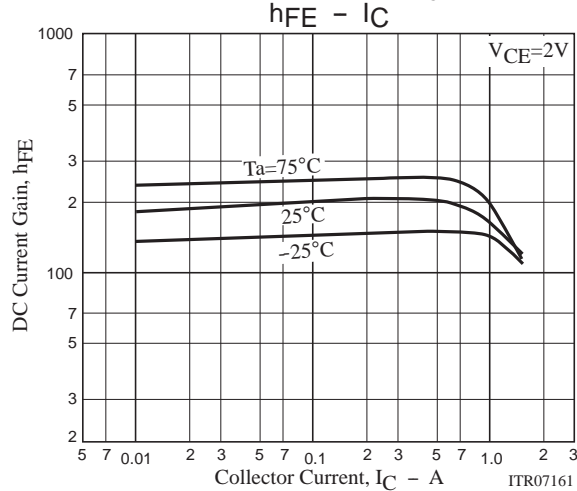
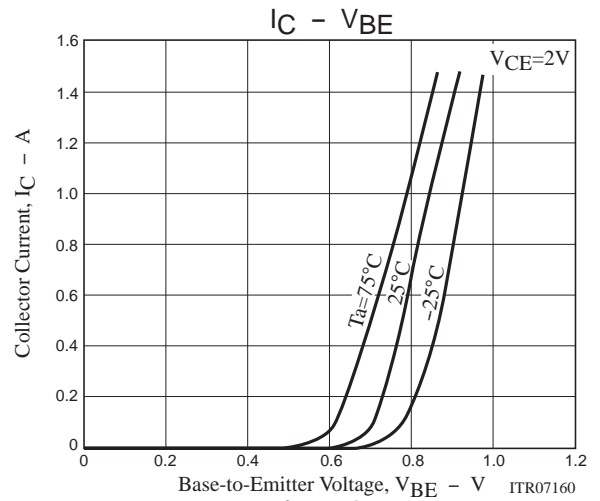
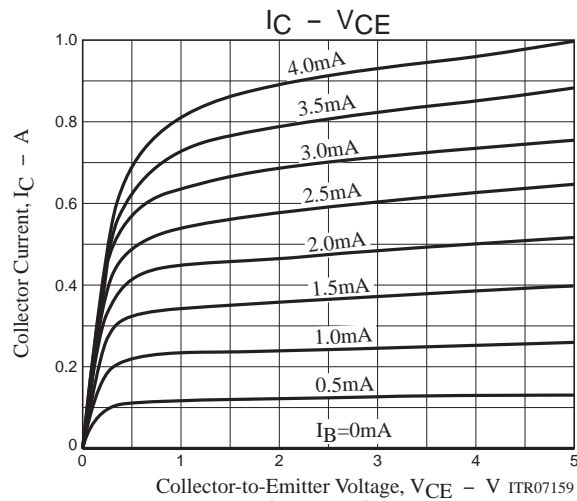
Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

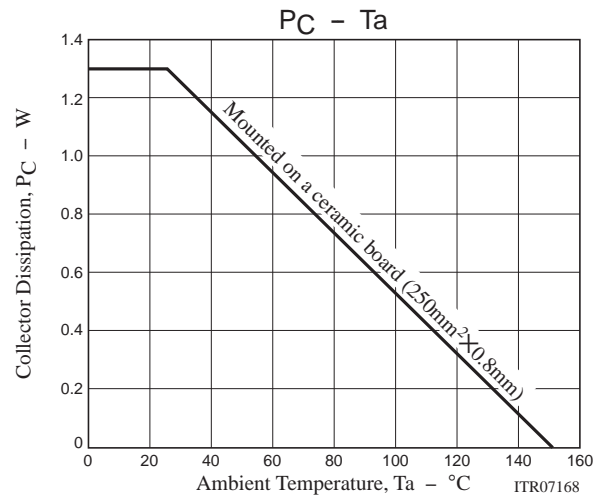
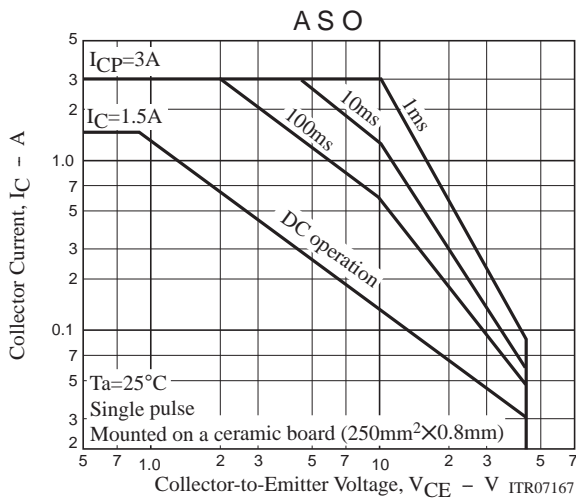
Package Dimensions

unit : mm (typ)

7007B-004

**Switching Time Test Circuit**





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