

**2SC4520**

High-Speed Switching Applications

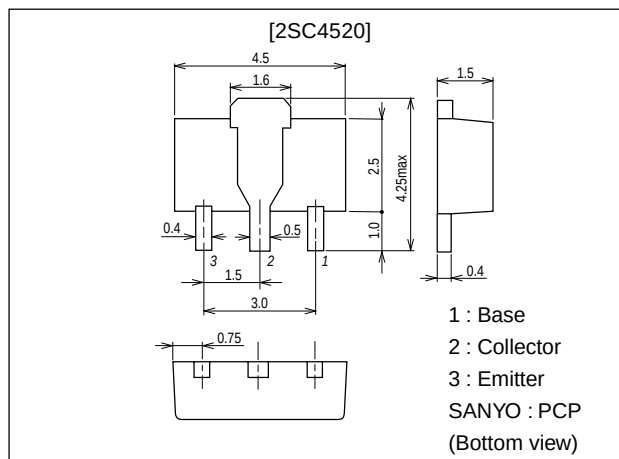
Features

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

Package Dimensions

unit:mm

2038A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		45	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		1.5	A
Collector Current (Pulse)	I_{CP}		3	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	1.3	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=45V, I_E=0$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=3V, I_C=0$			1	μA
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

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

Marking : CK

 h_{FE} rank : R, S, T

100	R	200	140	S	280	200	T	400
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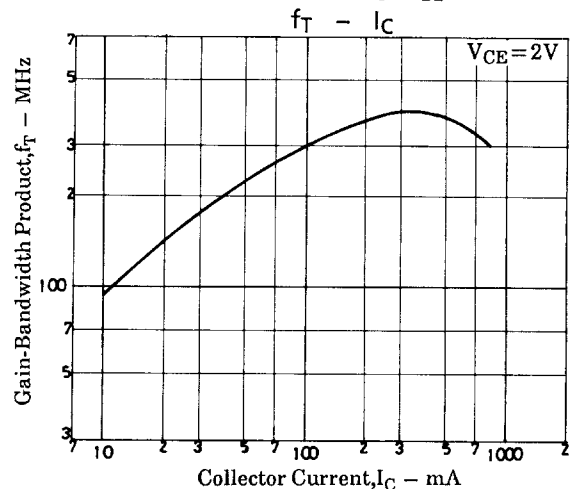
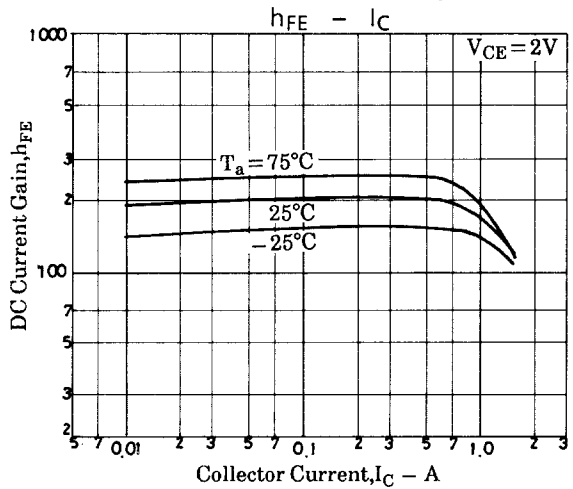
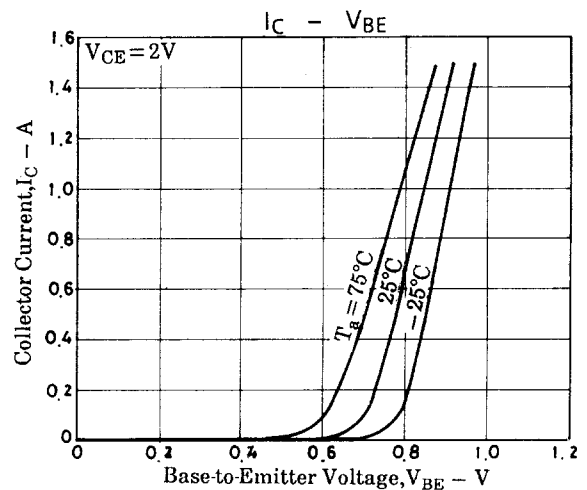
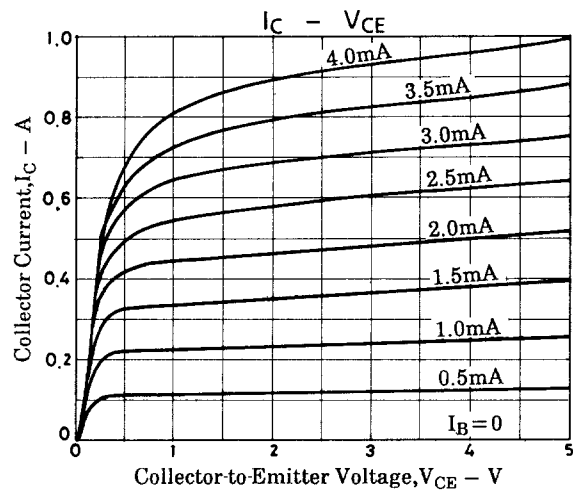
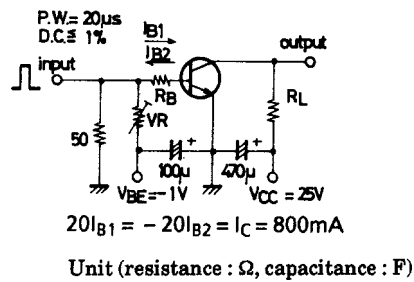
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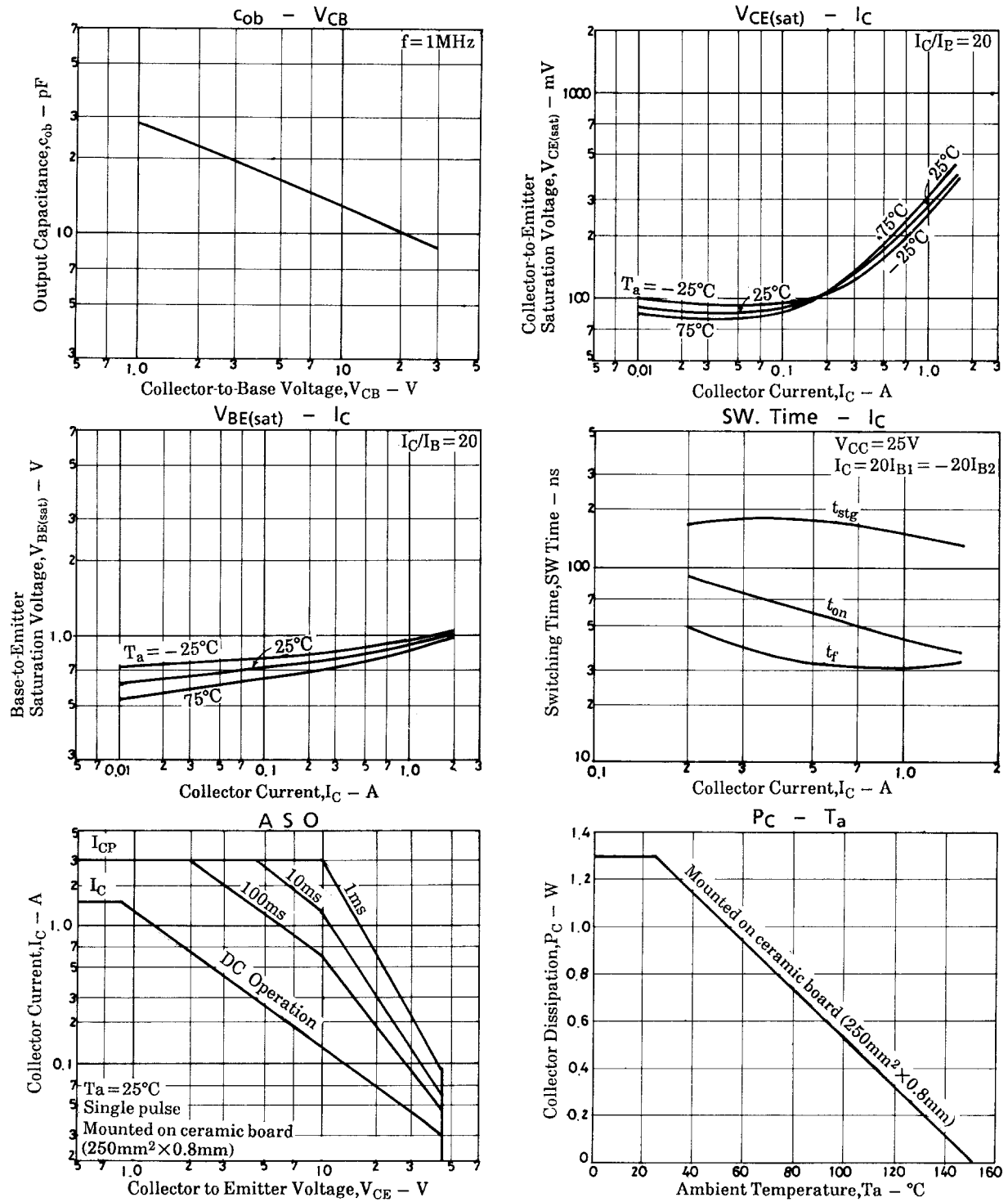
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=800\text{mA}$, $I_B=40\text{mA}$		0.25	0.7	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=800\text{mA}$, $I_B=40\text{mA}$		0.9	1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}$, $I_E=0$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $R_{BE}=\infty$	45			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$, $I_C=0$	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
Fall Time	t_f	See specified test circuit.		180	350	ns

Switching Time Test Circuit





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