



2SC4521

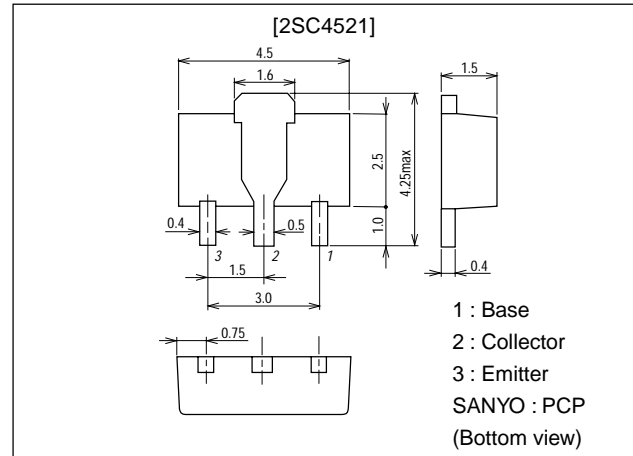
High-Speed Switching Applications

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_{CB0}		60	V
Collector-to-Emitter Voltage	V_{CE0}		45	V
Emitter-to-Base Voltage	V_{EB0}		5	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	1.5	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_{CB0}	$V_{CB}=45V, I_E=0$			1	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=2V, I_C=0$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=2V, I_C=500mA$	100*		400*	
	h_{FE2}	$V_{CE}=2V, I_C=3A$	40			
Gain-Bandwidth Product	f_T	$V_{CE}=2V, I_C=500mA$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		25		pF

* : The 2SC4521 is classified by 500mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400
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Marking : CL

h_{FE} rank : R, S, T

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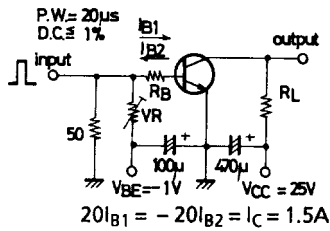
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

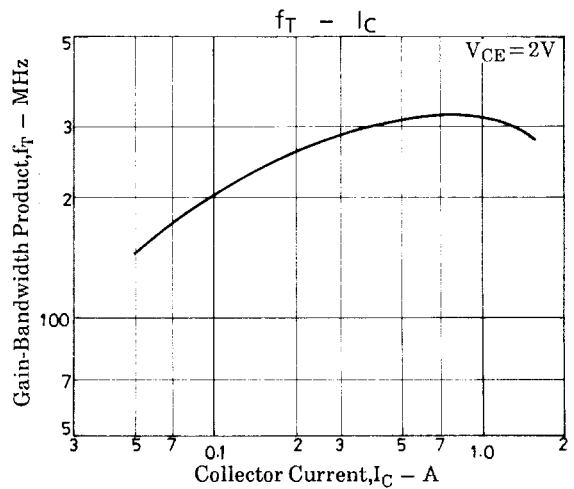
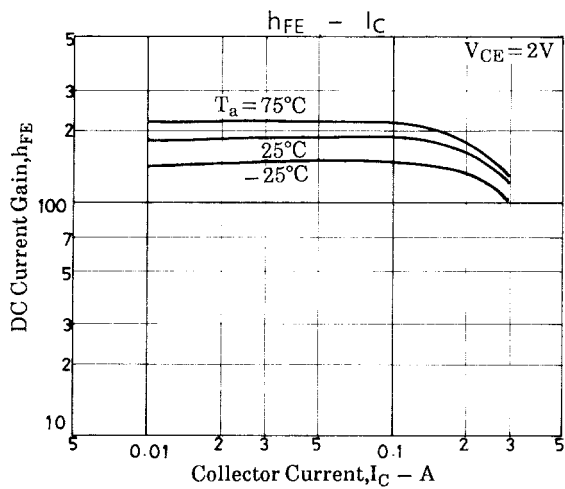
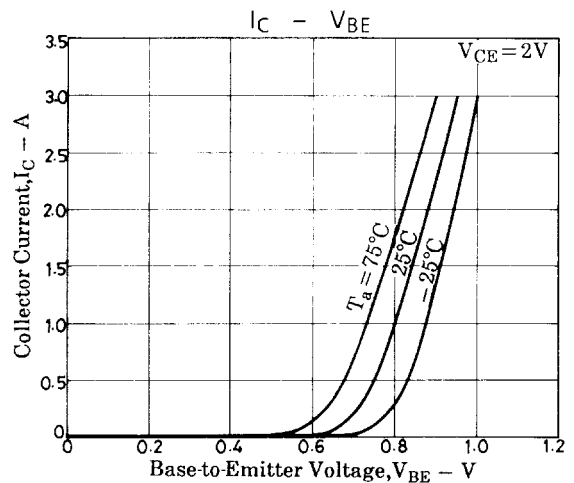
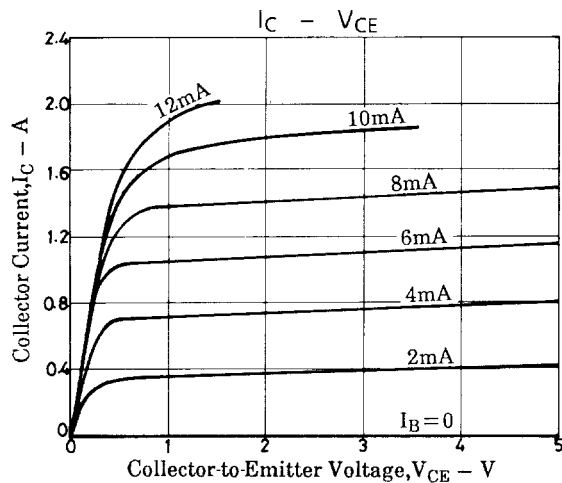
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1.5A, I_B=75mA$		0.25	0.7	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5V, I_B=75mA$		0.95	1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	45			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	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

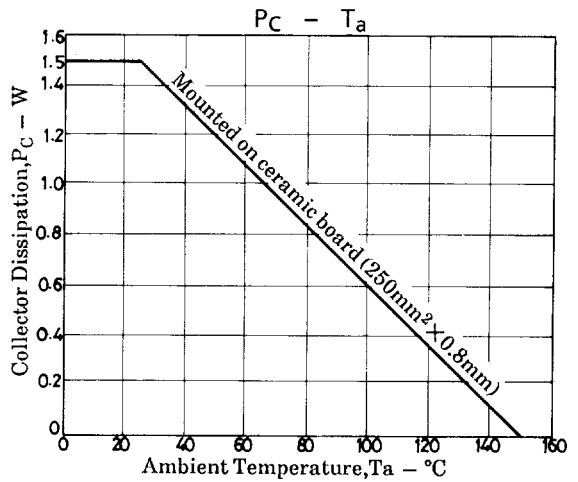
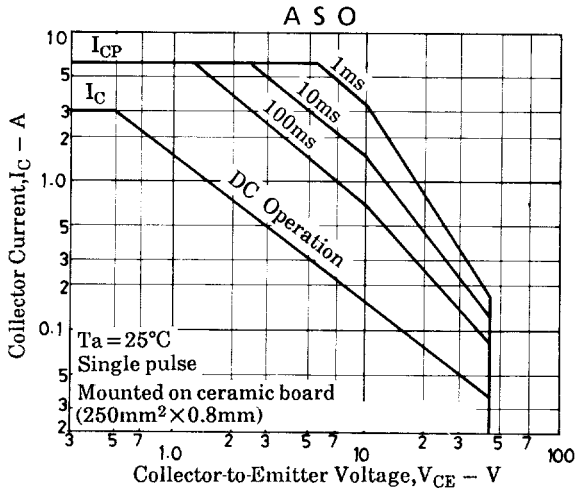
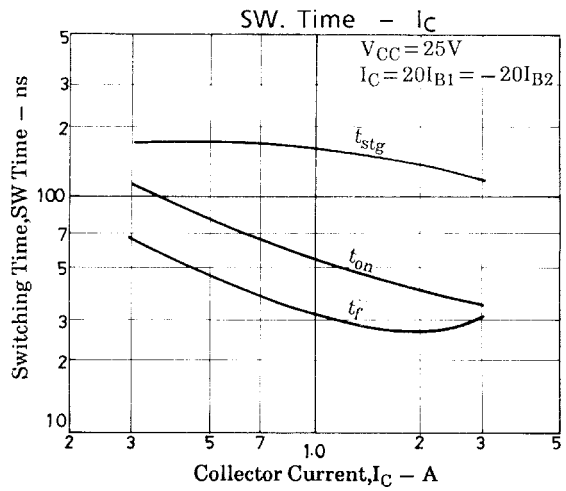
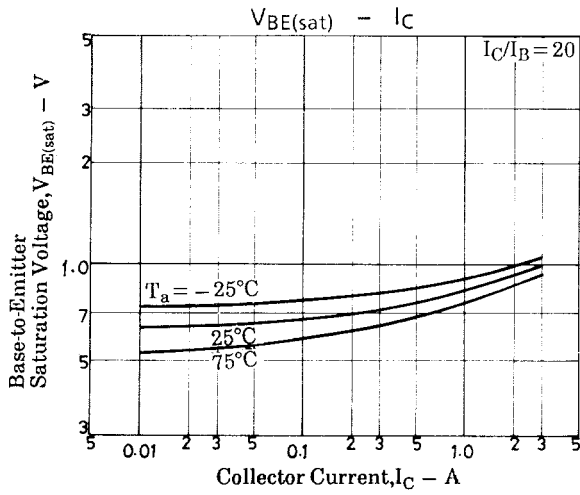
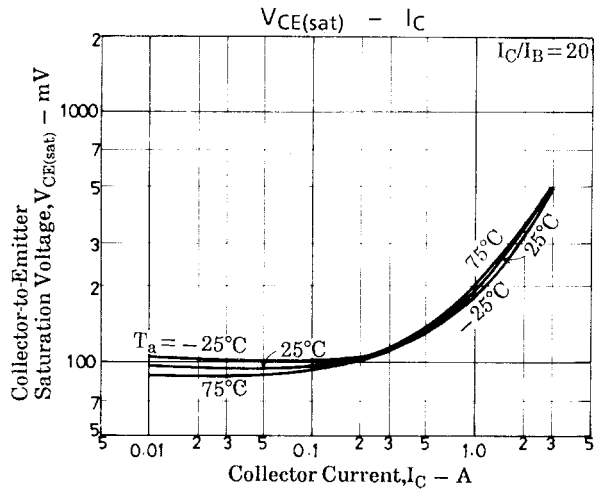
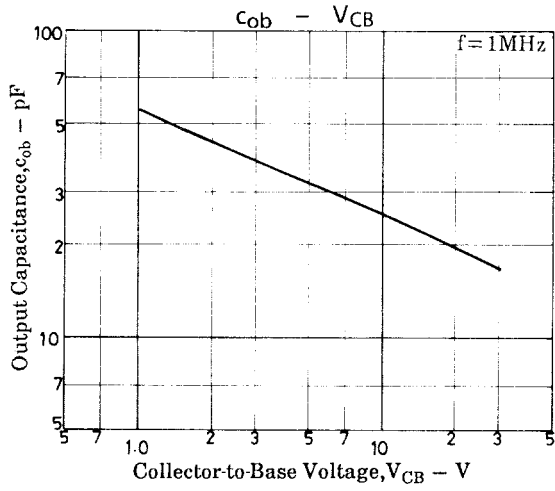
Switching Time Test Circuit



Unit (resistance : Ω , capacitance : F)



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