

**2SC4523**

## High-Speed Switching Applications

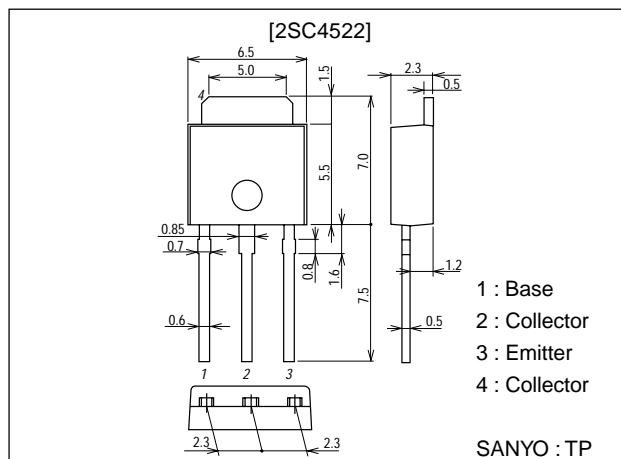
### Features

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

### Package Dimensions

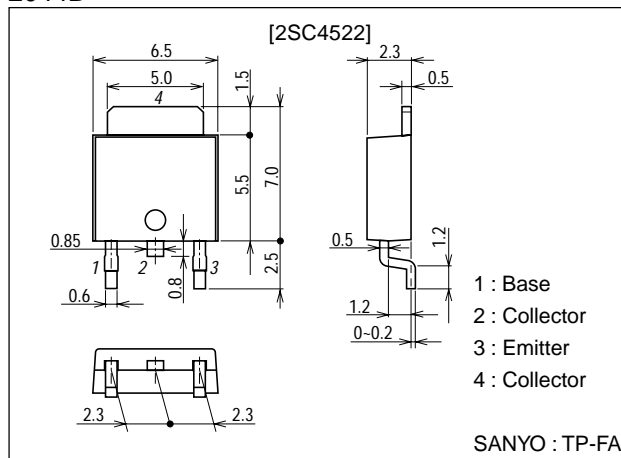
unit:mm

2045B



unit:mm

2044B



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11299HA (KT)/7130MH/7059MO, TS No.3142-1/4

## 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	$I_C$		8	A
Collector Current (Pulse)	$I_{CP}$		12	A
Collector Dissipation	$P_C$		1	W
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

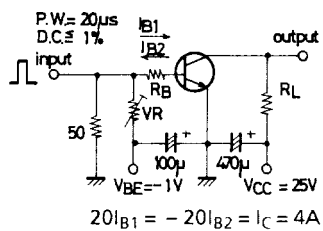
### Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=45\text{V}, I_E=0$			1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	100*		400*	
	$h_{FE2}$	$V_{CE}=2\text{V}, I_C=8\text{A}$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE}=2\text{V}, I_C=500\text{mA}$		250		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		65		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{A}, I_B=200\text{mA}$		0.25	0.7	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4\text{A}, I_B=200\text{mA}$		0.95	1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	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	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	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

\* : The 2SC4523 is classified by 500mA  $h_{FE}$  as follows :

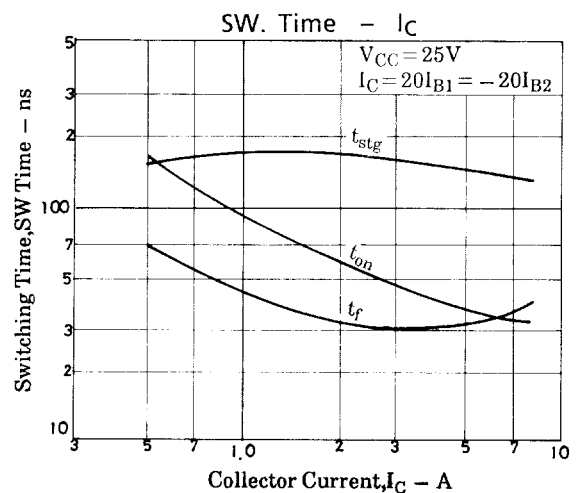
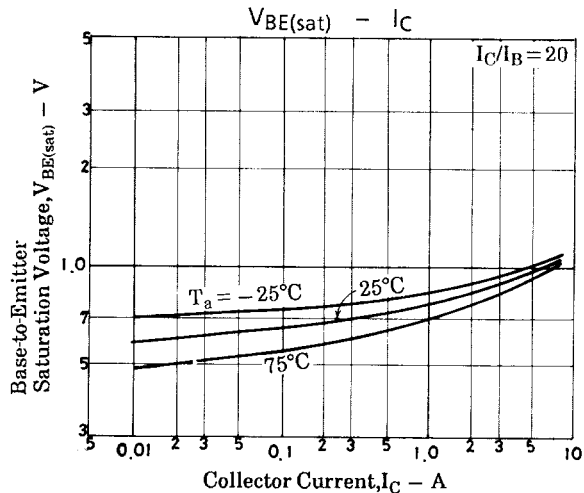
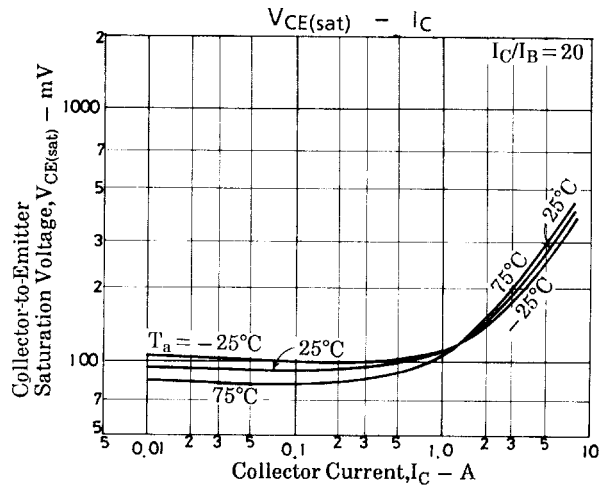
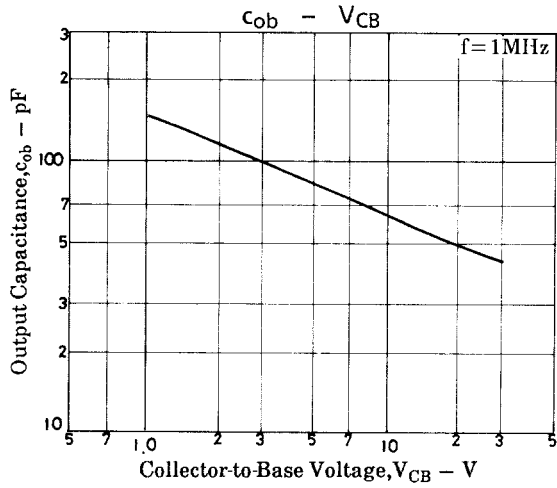
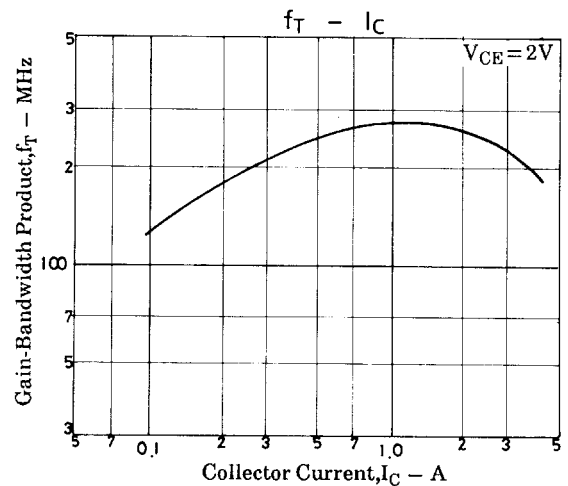
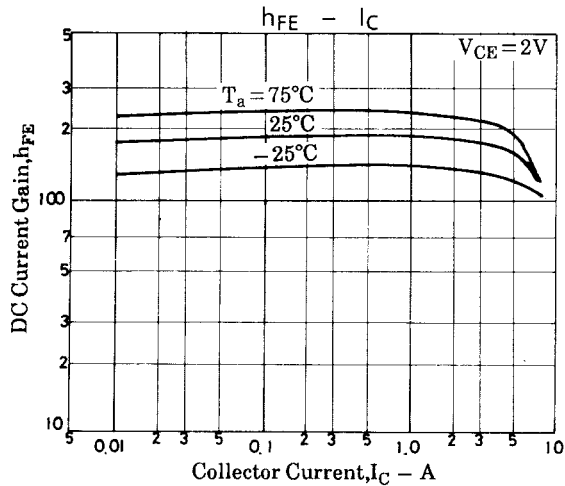
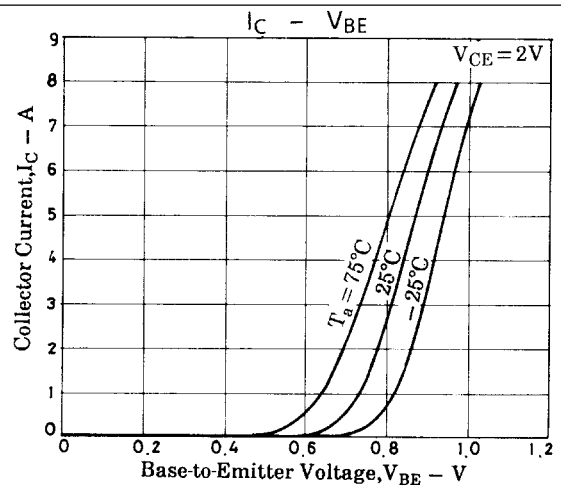
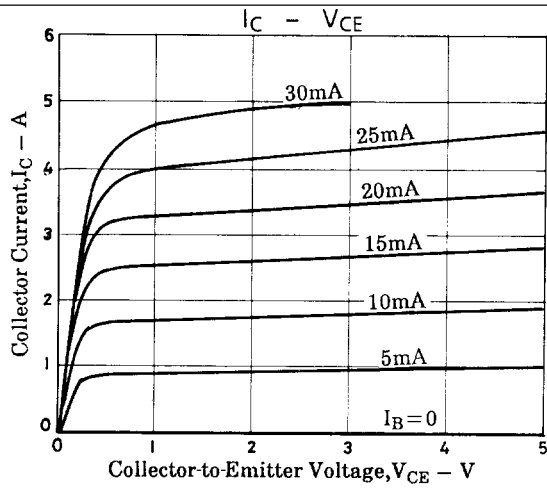
100	R	200	140	S	280	200	T	400
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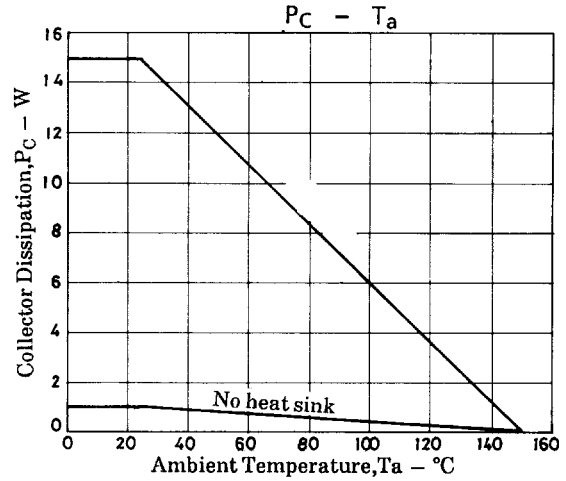
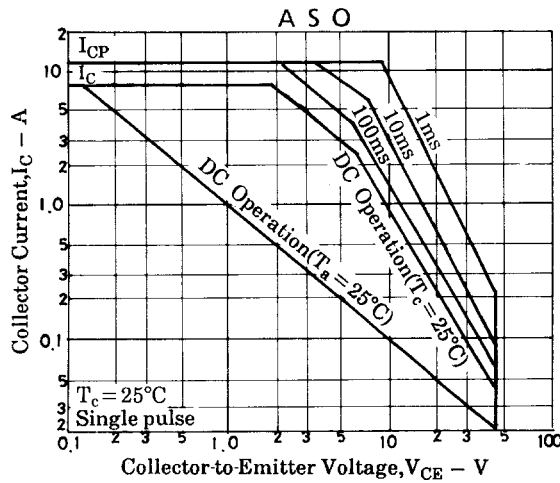
### Switching Time Test Circuit



Unit (resistance :  $\Omega$ , capacitance :  $\text{F}$ )

# 2SC4523





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