

## NPN Transistors

### 2SC4521

#### ■ Features

- Collector Current Capability  $I_C=3A$
- Collector Emitter Voltage  $V_{CE0}=45V$

#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	60	V
Collector - Emitter Voltage	$V_{CE0}$	45	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_C$	3	A
Collector Current - Pulse	$I_{CP}$	6	
Collector Power Dissipation (Note.1)	$P_C$	1.5	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

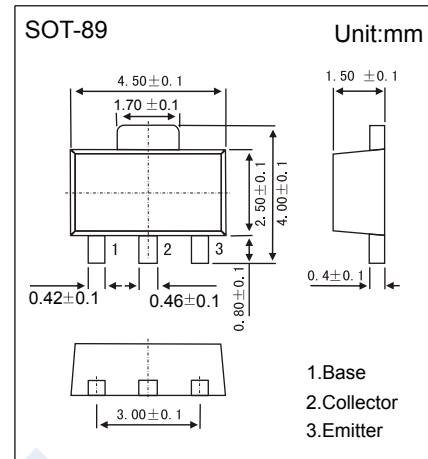
Note.1 : Mounted on ceramic substrate of  $250mm^2 \times 0.8mm$

#### ■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = 100 \mu A, I_E = 0$	60			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = 1 mA, R_{BE} = \infty$	45			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = 45 V, I_E = 0$			1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 2V, I_C = 0$			10	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1.5 A, I_B = 75mA$			0.7	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1.5 A, I_B = 75mA$			1.3	
DC current gain	$h_{FE}$	$V_{CE} = 2V, I_C = 500mA$	100		400	
		$V_{CE} = 2V, I_C = 3 A$	40			
Turn-on time	$t_{on}$	See Specified Test Circuit			100	ns
Storage time	$t_{stg}$				270	
Turn-off time	$t_{off}$				350	
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, f = 1MHz$		25		pF
Transition frequency	$f_T$	$V_{CE} = 2V, I_C = 500mA$		300		MHz

#### ■ Classification of $h_{FE}(1)$

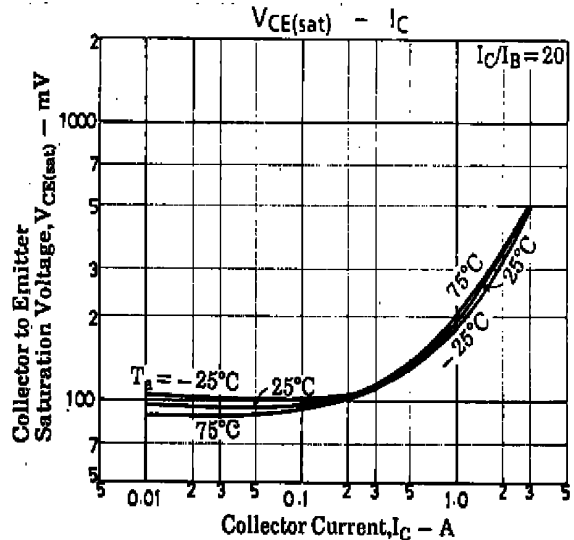
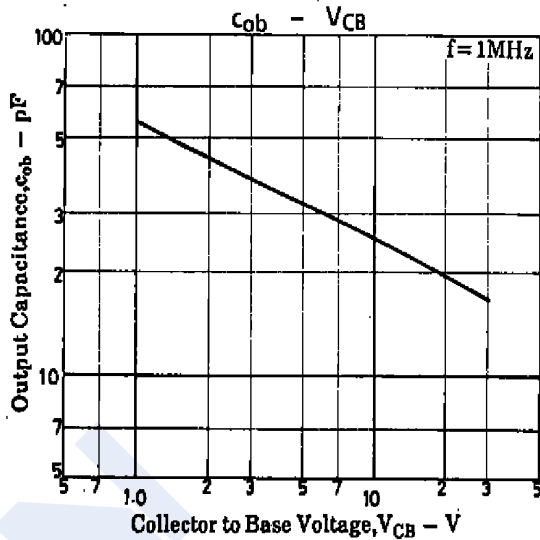
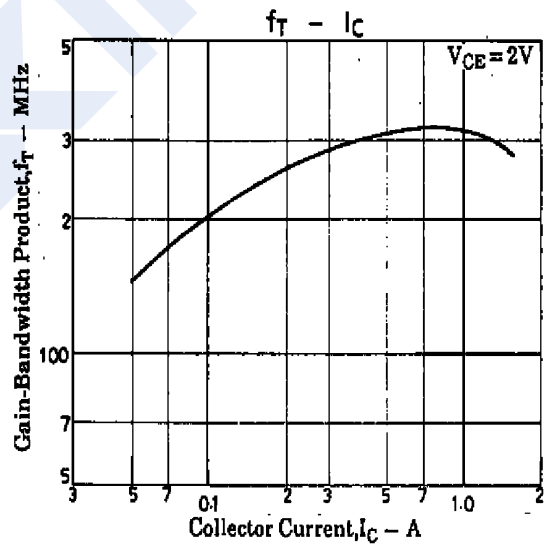
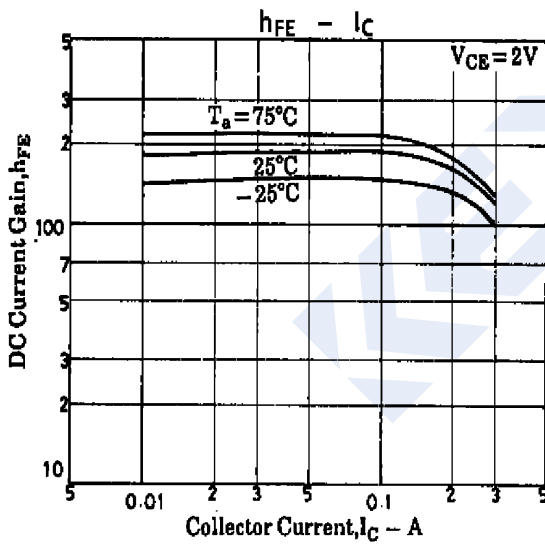
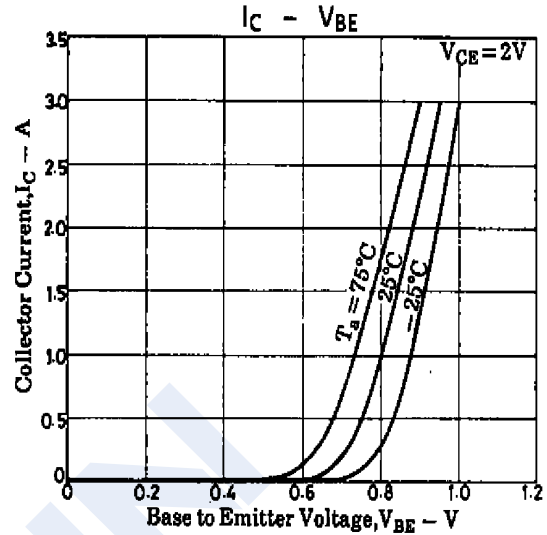
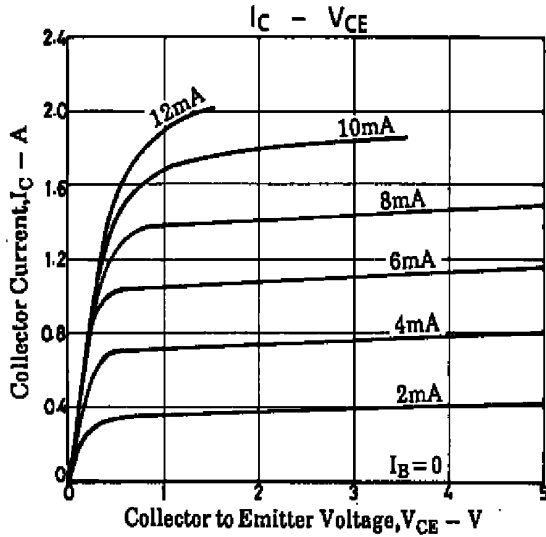
Type	2SC4521-R	2SC4521-S	2SC4521-T
Range	100-200	140-280	200-400
Marking	CL R*	CL S*	CL T*



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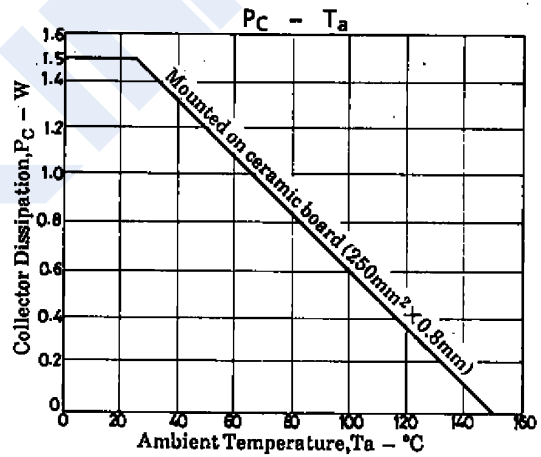
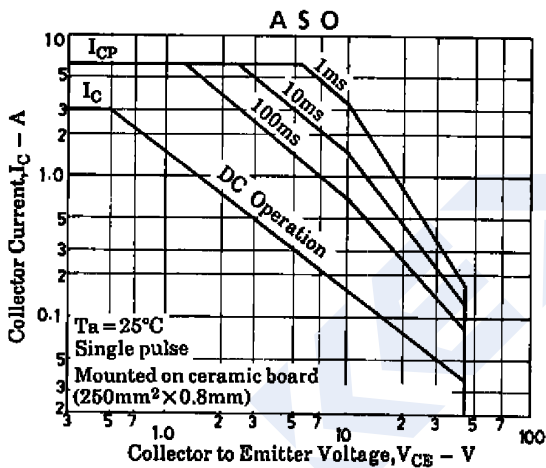
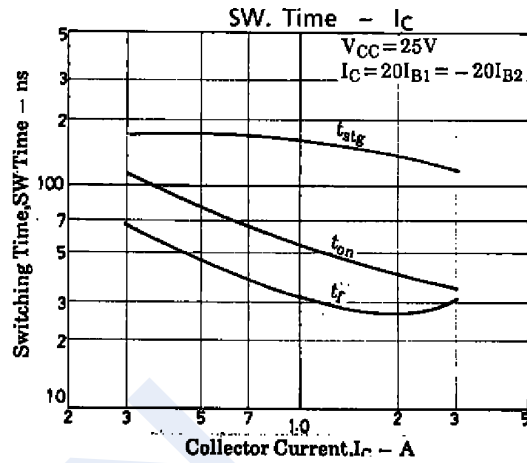
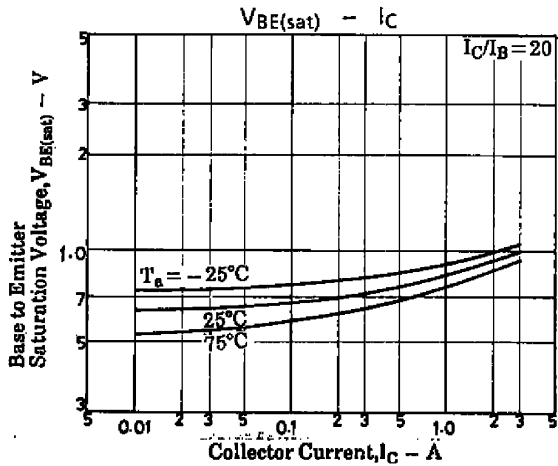
■ Typical Characteristics



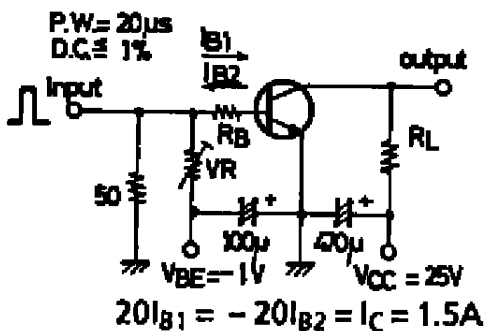
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■ Typical Characteristics



Switching Time Test Circuit



Unit (Resistance : Ω) Unit (Resistance : Ω)