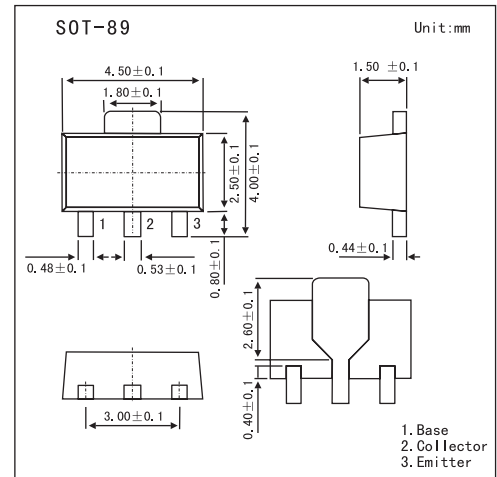


## NPN Epitaxial Planar Silicon Transistor

## 2SC4521

## ■ Features

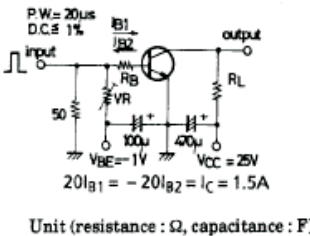
- Adoption of FBET, MBIT process.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- Fast switching speed.
- Small-sized package.

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	60	V
Collector-emitter voltage	$V_{CE0}$	45	V
Emitter-base voltage	$V_{EB0}$	5	V
Collector current	$I_C$	3	A
Collector current (pulse)	$I_{CP}$	6	A
Collector dissipation, mounted on ceramic board(250mm <sup>2</sup> X0.8mm)	$P_C$	1.5	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

## 2SC4521

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	$I_{CBO}$	$V_{CB} = 45V, I_E = 0$			1	$\mu A$	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 2V, I_C = 0$			10	$\mu A$	
DC current gain	$h_{FE}$	$V_{CE} = 2V, I_C = 500mA$	100		400		
Gain bandwidth product	$f_T$	$V_{CE} = 2V, I_C = 500mA$		300		MHz	
Output capacitance	$C_{ob}$	$V_{CB} = 10V, f = 1.0MHz$		25		pF	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1.5A, I_B = 75mA$		0.25	0.7	V	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1.5A, I_B = 75mA$		0.95	1.3	V	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	60			V	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	45			V	
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	5			V	
Turn-on time	$t_{on}$	 <p> <math>PW = 20\mu s</math>  <math>D.C. = 1\%</math>  <math>V_{BE} = 1V</math>  <math>V_{CC} = 25V</math>  <math>20I_{B1} = -20I_{B2} = I_C = 1.5A</math>            Unit (resistance : <math>\Omega</math>, capacitance : F)         </p>		50	100	ns	
Storage time	$t_{stg}$				150	270	ns
Fall time	$t_f$				180	350	ns

## ■ hFE Classification

Marking	CL		
	R	S	T
hFE	100~200	140~280	200~400