

# 2SC4502

## Silicon NPN epitaxial planer type

For intermediate frequency amplification

### Features

- High transition frequency  $f_T$ .
- Large collector power dissipation  $P_C$ .
- Allowing supply with the radial taping.

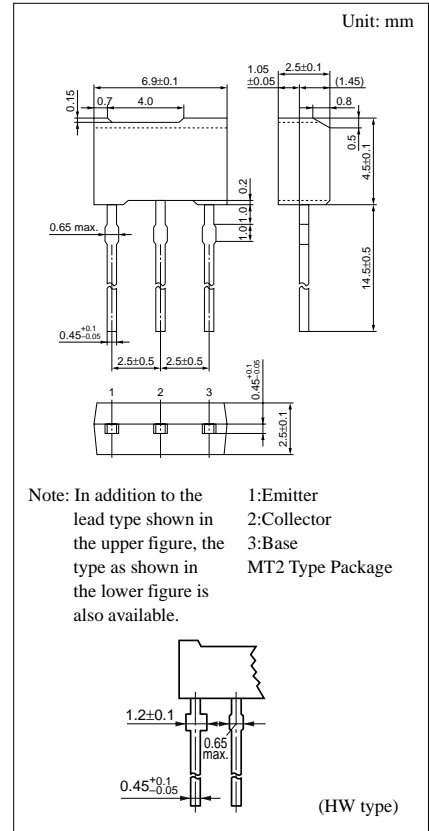
### Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	50	V
Collector to emitter voltage	$V_{CEO}$	45	V
Emitter to base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C^*$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

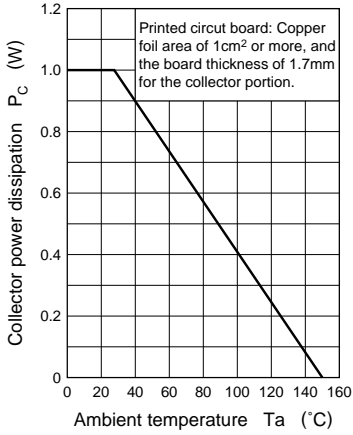
\* Printed circuit board: Copper foil area of  $1\text{cm}^2$  or more, and the board thickness of 1.7mm for the collector portion

### Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

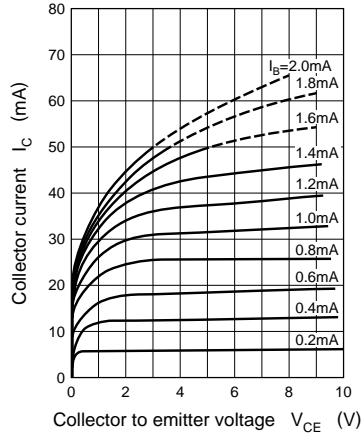
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20\text{V}$ , $I_E = 0$			100	nA
Collector to base voltage	$V_{CBO}$	$I_C = 100\mu\text{A}$ , $I_E = 0$	50			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 1\text{mA}$ , $I_B = 0$	45			V
Emitter to base voltage	$V_{EBO}$	$I_E = 100\mu\text{A}$ , $I_C = 0$	4			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10\text{V}$ , $I_C = 10\mu\text{A}$	20		100	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}$ , $I_B = 2\text{mA}$			0.4	V
Transition frequency	$f_T$	$V_{CB} = 10\text{V}$ , $I_E = -10\text{mA}$ , $f = 200\text{MHz}$	300			MHz
Common emitter reverse transfer capacitance	$C_{re}$	$V_{CB} = 10\text{V}$ , $I_E = -1\text{mA}$ , $f = 10.7\text{MHz}$			1.5	pF
Power gain	PG	$V_{CB} = 10\text{V}$ , $I_E = -10\text{mA}$ , $f = 58\text{MHz}$	22		30	dB



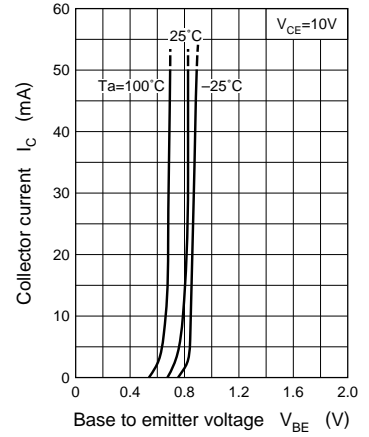
$P_C - T_a$



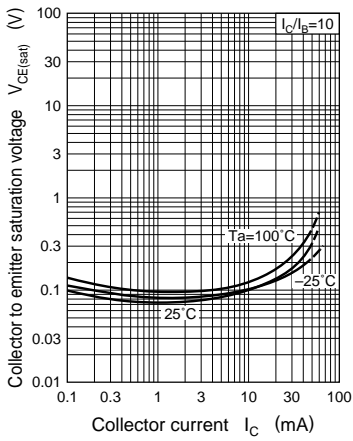
$I_C - V_{CE}$



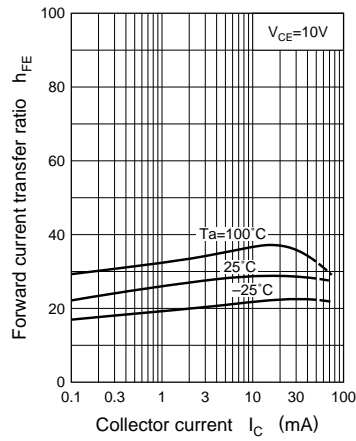
$I_C - V_{BE}$



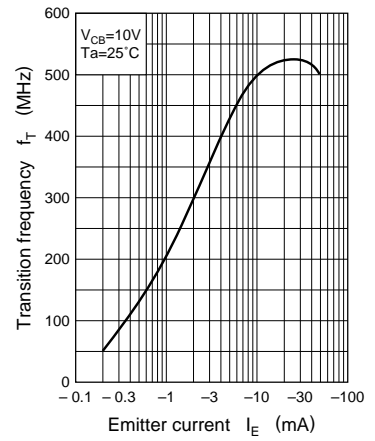
$V_{CE(sat)} - I_C$



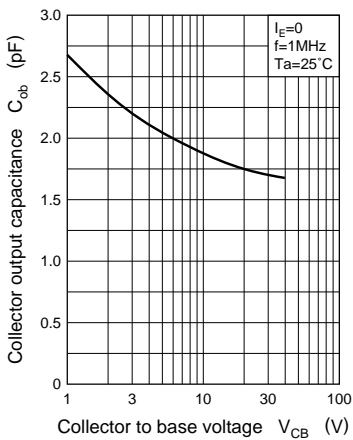
$h_{FE} - I_C$



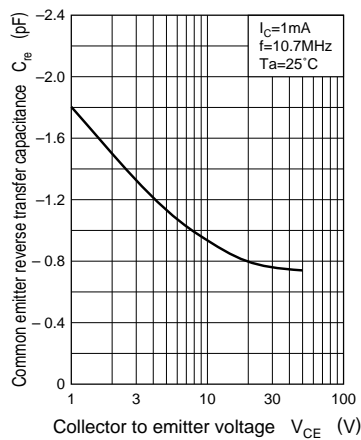
$f_T - I_E$



$C_{ob} - V_{CB}$



$C_{re} - V_{CE}$



$PG - I_E$

