

# 2SC4502

## Silicon NPN epitaxial planar 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 $T_a = 25^\circ\text{C}$

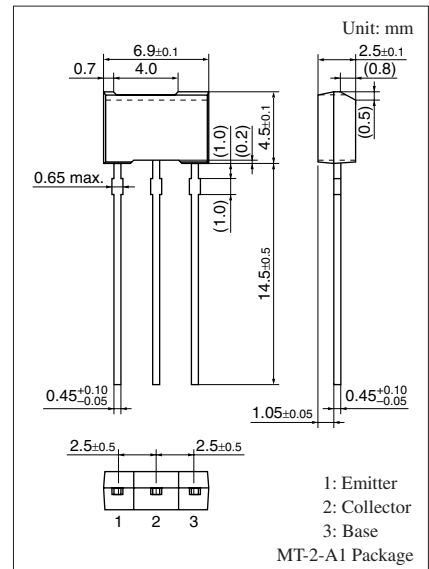
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	50	V
Collector-emitter voltage (Base open)	$V_{CEO}$	45	V
Emitter-base voltage (Collector open)	$V_{EBO}$	4	V
Collector current	$I_C$	50	mA
Collector power dissipation *	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$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

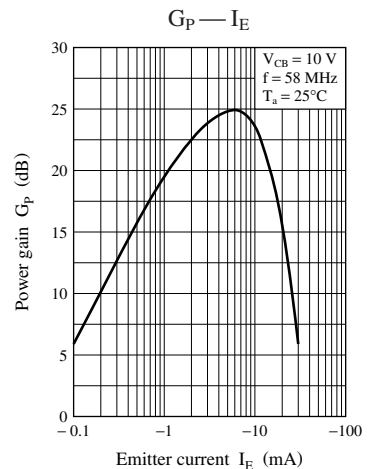
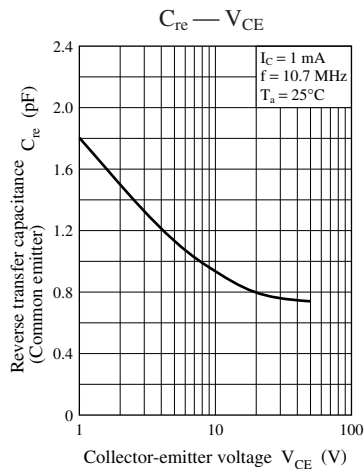
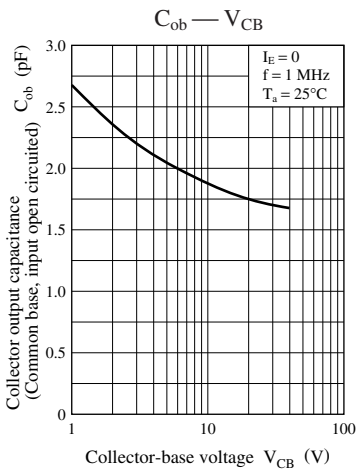
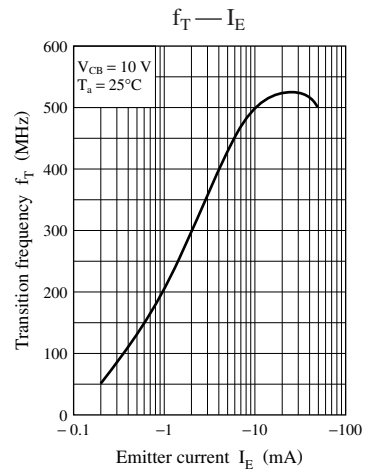
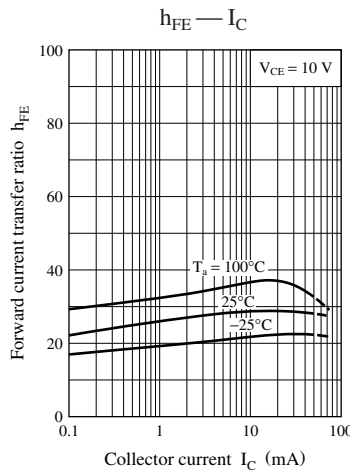
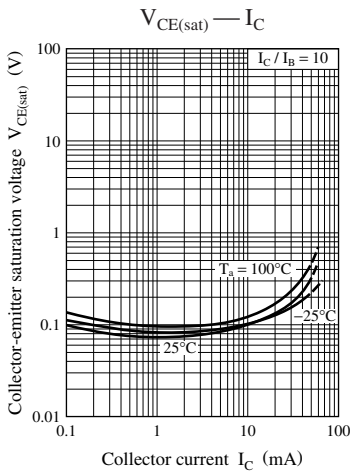
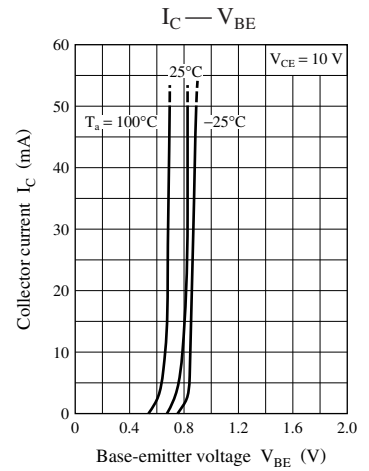
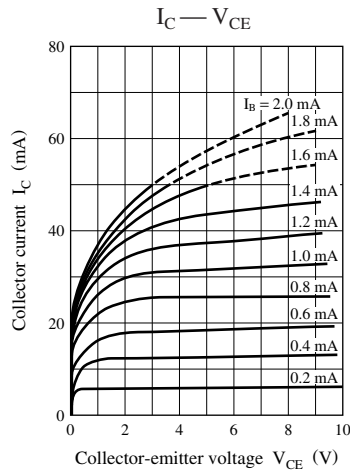
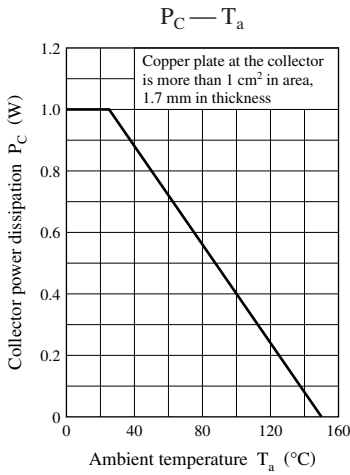
Note) \*: Copper plate at the collector is more than  $1\text{ cm}^2$  in area, 1.7 mm in thickness

### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 100\ \mu\text{A}$ , $I_E = 0$	50			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 1\ \text{mA}$ , $I_B = 0$	45			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 100\ \mu\text{A}$ , $I_C = 0$	4			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 20\ \text{V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10\ \text{V}$ , $I_C = 10\ \text{mA}$	20		100	—
Collector-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
Reverse transfer capacitance (Common emitter)	$C_{re}$	$V_{CB} = 10\ \text{V}$ , $I_E = -1\ \text{mA}$ , $f = 10.7\ \text{MHz}$			1.5	pF
Power gain	$G_p$	$V_{CB} = 10\ \text{V}$ , $I_E = -10\ \text{mA}$ , $f = 58\ \text{MHz}$	22		30	dB

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.





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