

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.

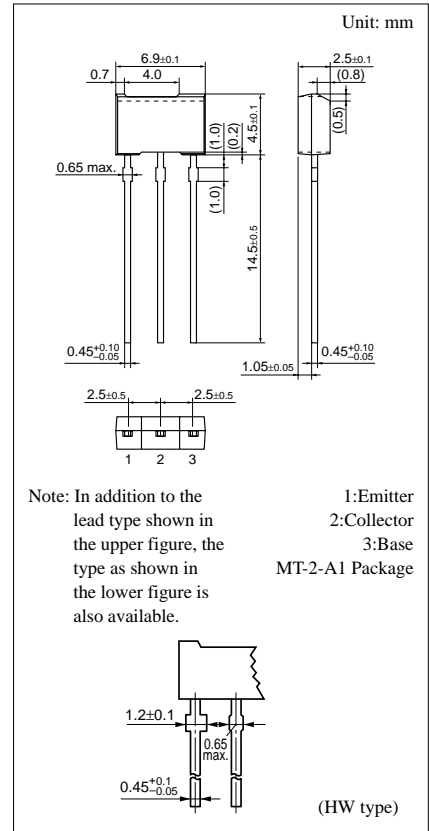
Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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	$^\circ\text{C}$

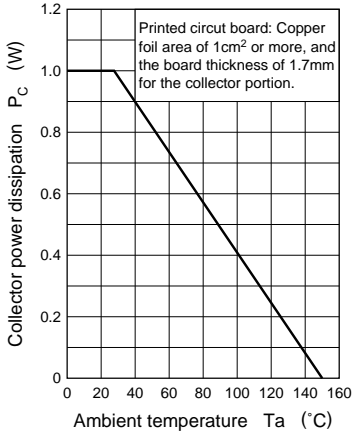
* Printed circuit board: Copper foil area of 1cm^2 or more, and the board thickness of 1.7mm for the collector portion

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

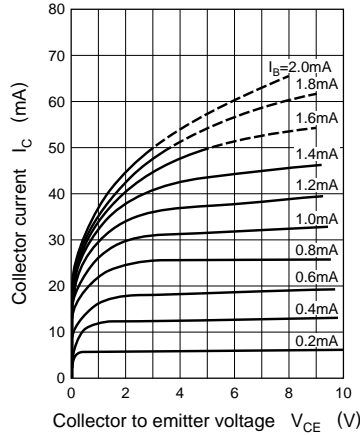
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$			100	nA
Collector to base voltage	V_{CBO}	$I_C = 100\mu\text{A}, I_E = 0$	50			V
Collector to emitter voltage	V_{CEO}	$I_C = 1\text{mA}, I_B = 0$	45			V
Emitter to base voltage	V_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	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



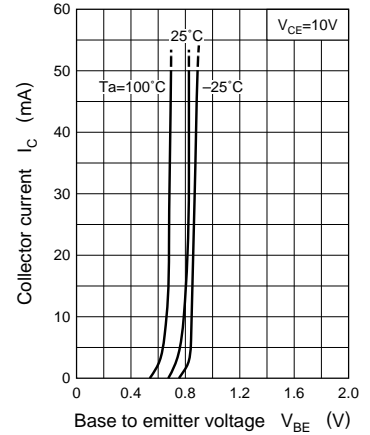
$P_C - T_a$



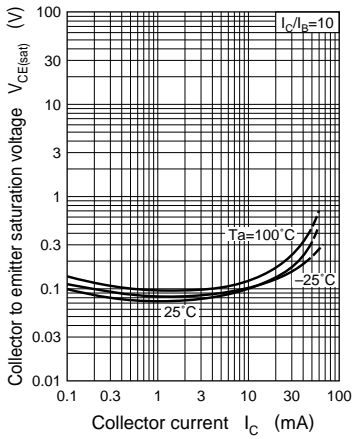
$I_C - V_{CE}$



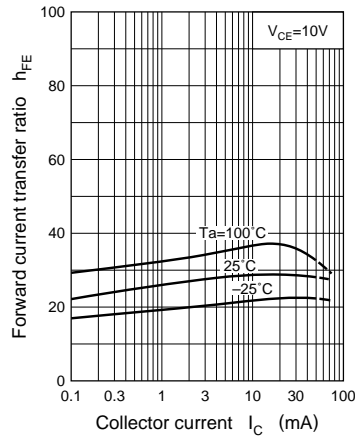
$I_C - V_{BE}$



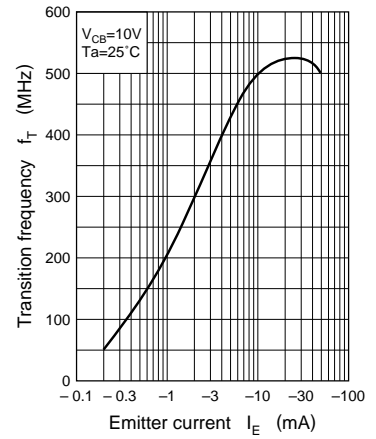
$V_{CE(sat)} - I_C$



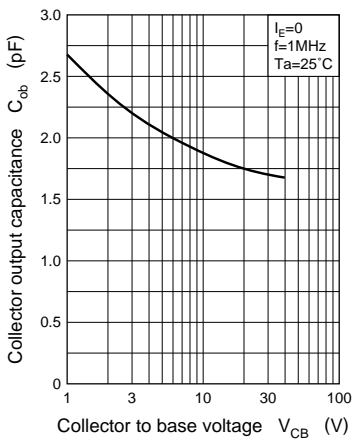
$h_{FE} - I_C$



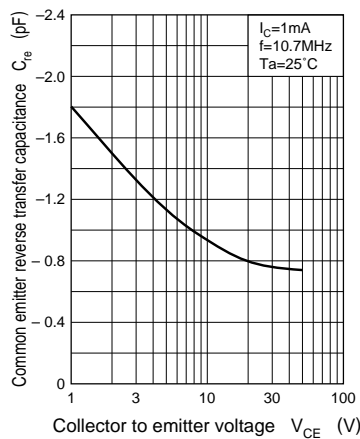
$f_T - I_E$



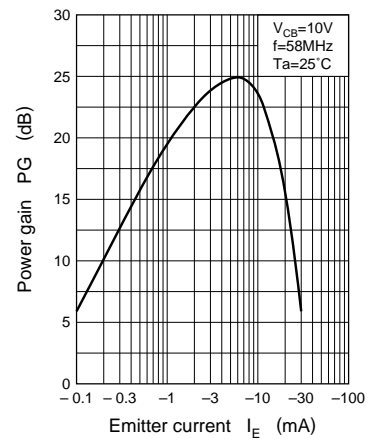
$C_{ob} - V_{CB}$



$C_{re} - V_{CE}$



$PG - I_E$



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