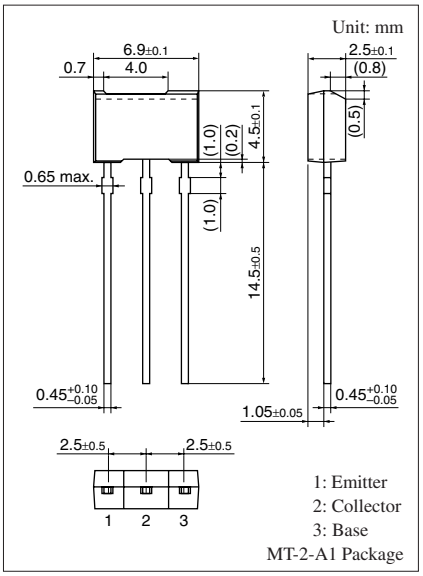
2SC4502

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 $T_a = 25°C$

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	°C
Storage temperature	T_{stg}	−55 to +150	°C

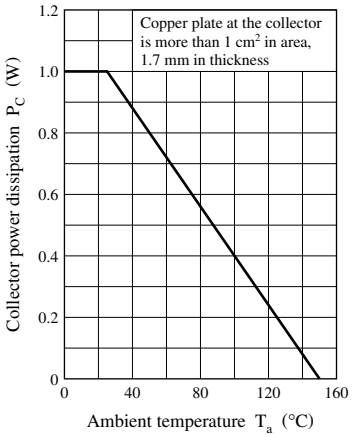
Note) ∗: Copper plate at the collector is more than 1 cm^2 in area, 1.7 mm in thickness

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

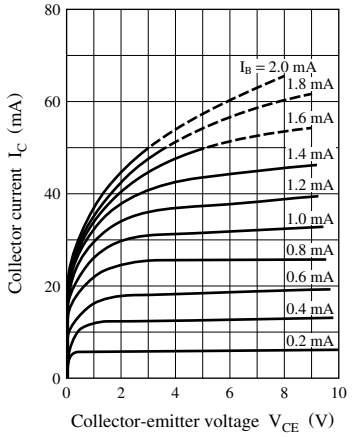
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 100 µA, I_E = 0	50			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 1 mA, I_B = 0	45			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 100 µA, I_C = 0	4			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	µA
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 10 mA	20		100	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 20 mA, I_B = 2 mA			0.4	V
Transition frequency	f_T	V_{CB} = 10 V, I_E = −10 mA, f = 200 MHz	300			MHz
Reverse transfer capacitance (Common emitter)	C_{re}	V_{CB} = 10 V, I_E = −1 mA, f = 10.7 MHz			1.5	pF
Power gain	G_P	V_{CB} = 10 V, I_E = −10 mA, f = 58 MHz	22		30	dB

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

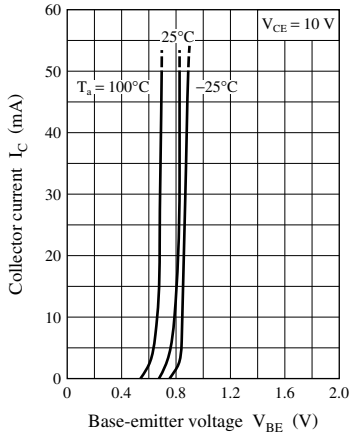
P_C — T_a



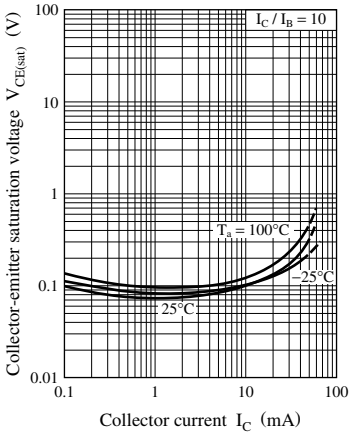
I_C — V_{CE}



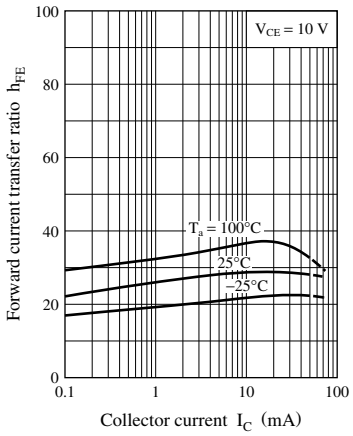
I_C — V_{BE}



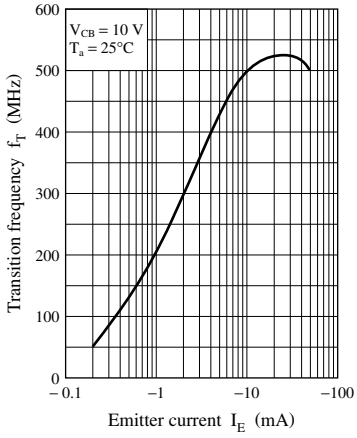
$V_{CE(sat)}$ — I_C



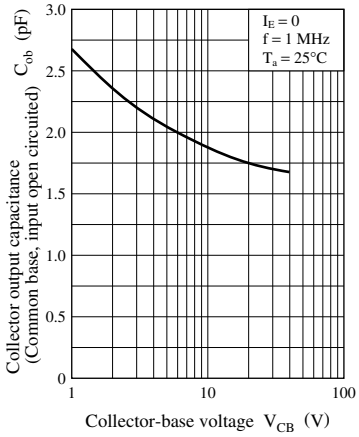
h_{FE} — I_C



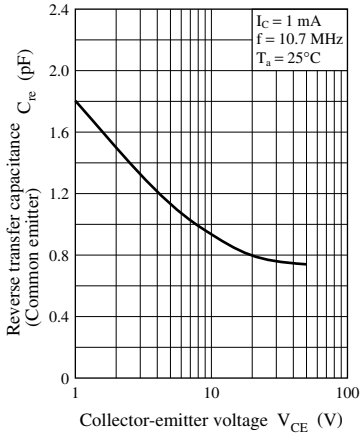
f_T — I_E



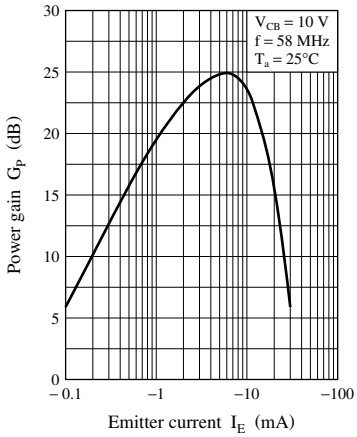
C_{ob} — V_{CB}



C_{re} — V_{CE}



G_P — I_E



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