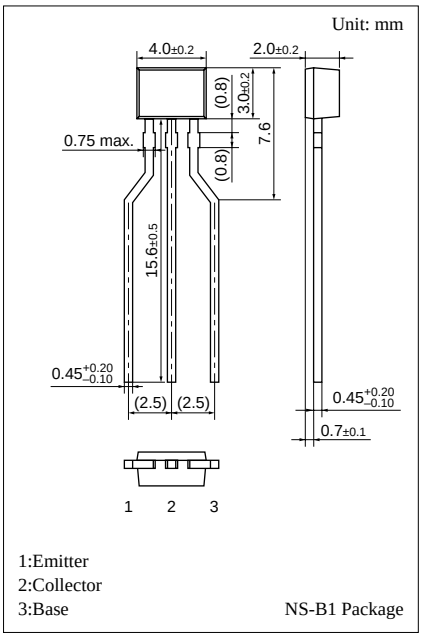
2SC3354

Silicon NPN epitaxial planer type

For high-frequency amplification/oscillation/mixing



Features

- Optimum for high-density mounting.
- Allowing supply with the radial taping.
- High transition frequency f_T.

Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

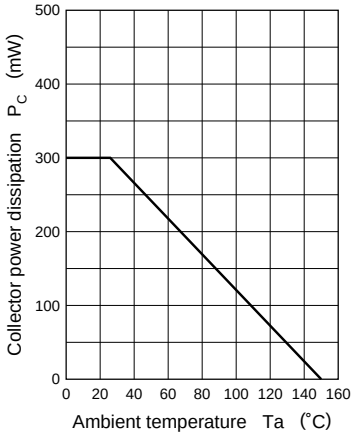
Electrical Characteristics (Ta=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	I_C = 100μA, I_E = 0	30			V
Emitter to base voltage	V_{EBO}	I_E = 10μA, I_C = 0	3			V
Forward current transfer ratio	h_{FE}	V_{CB} = 10V, I_E = –2mA	25		250	
Base to emitter voltage	V_{BE}	V_{CB} = 10V, I_E = –2mA		720		mV
Common base reverse transfer capacitance	C_{rb}	V_{CE} = 6V, I_C = 0, f = 1MHz		0.8		pF
Common emitter reverse transfer capacitance	C_{re}	V_{CE} = 10V, I_C = 1mA, f = 10.7MHz		1	1.5	pF
Transition frequency	f_T*	V_{CB} = 10V, I_E = –15mA, f = 200MHz	600	1200	1600	MHz
Power gain	PG	V_{CB} = 10V, I_E = –1mA, f = 100MHz		17		dB

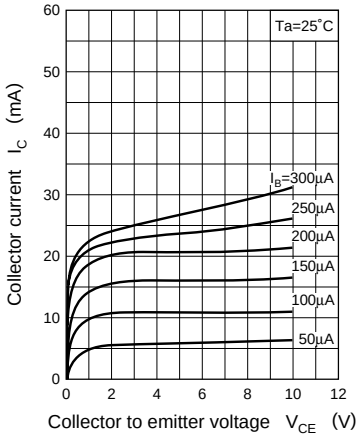
*h_{FE} Rank classification

Rank	T	S
f_T(MHz)	600 ~ 1300	900 ~ 1600

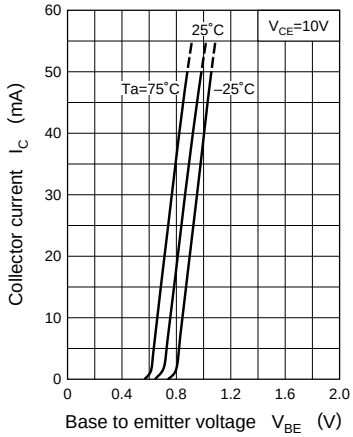
P_C — Ta



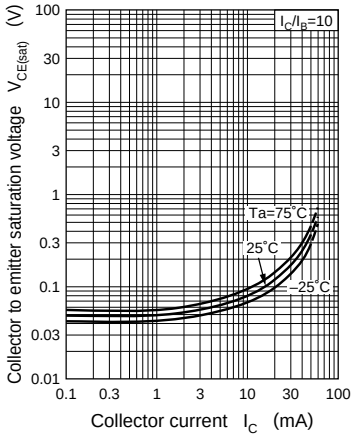
I_C — V_{CE}



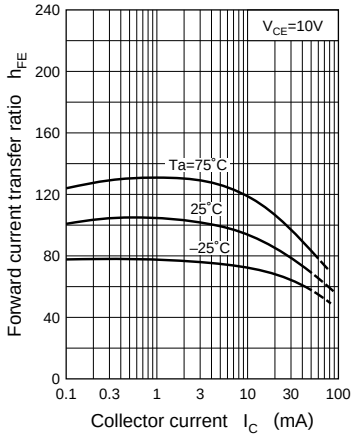
I_C — V_{BE}



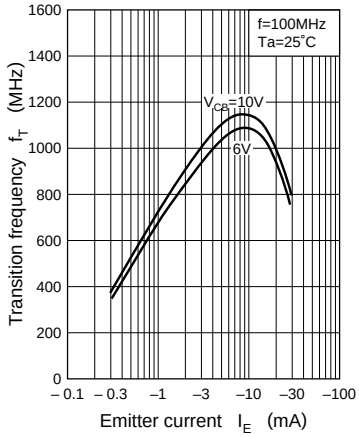
$V_{CE(sat)}$ — I_C



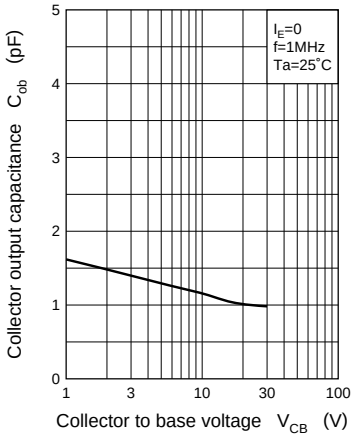
h_{FE} — I_C



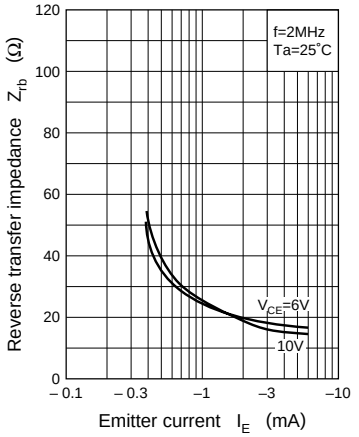
f_T — I_E



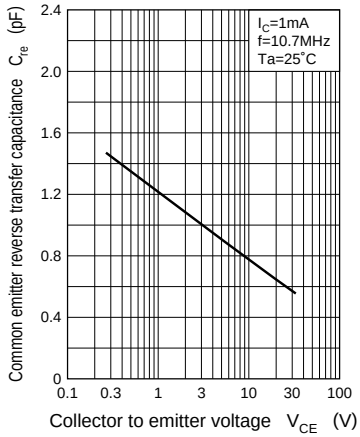
C_{ob} — V_{CB}



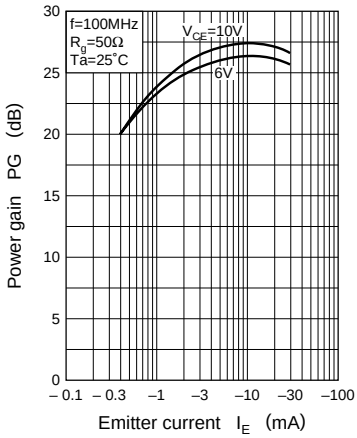
Z_{rb} — I_E



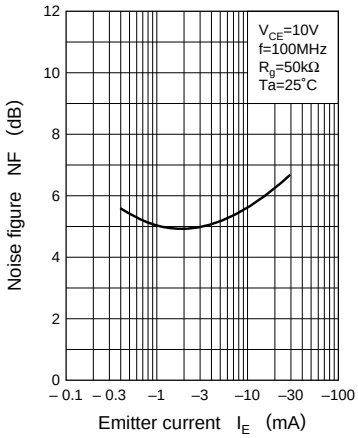
C_{re} — V_{CE}



PG — I_E


f=100MHz
R_g=50Ω
Ta=25˚C
V_{CE}=10V
6V
Power gain PG (dB)
30
25
20
15
10
5
0
– 0.1 – 0.3 –1 –3 –10 –30 –100
Emitter current I_E (mA)

NF — I_E


V_{CE}=10V
f=100MHz
R_g=50kΩ
Ta=25˚C
Noise figure NF (dB)
12
10
8
6
4
2
0
– 0.1 – 0.3 –1 –3 –10 –30 –100
Emitter current I_E (mA)

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