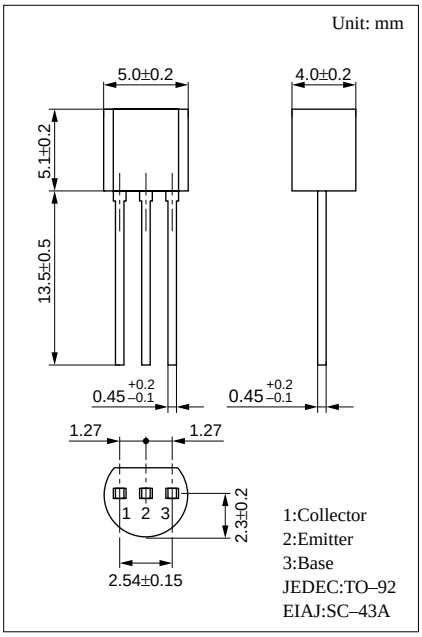
2SC1688

Silicon NPN epitaxial planer type

For high-frequency amplification



Features

- Small common emitter reverse transfer capacitance C_{re}.
- High transition frequency f_T.
- Center at the emitter pin.

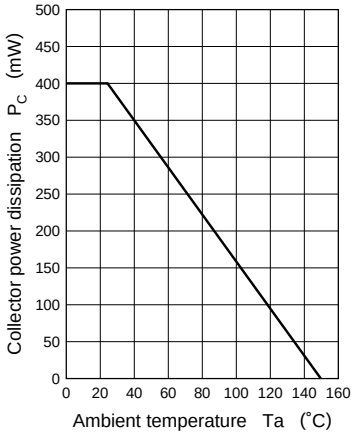
Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	50	V
Collector to emitter voltage	V_{CEO}	40	V
Emitter to base voltage	V_{EBO}	4	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

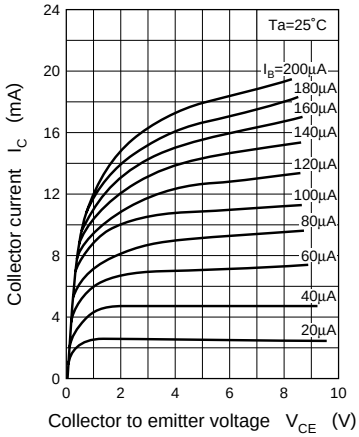
Electrical Characteristics (Ta=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 40V, I_E = 0			10	μA
Emitter cutoff current	I_{EBO}	V_{EB} = 4V, I_C = 0			10	μA
Forward current transfer ratio	h_{FE}	V_{CE} = 10V, I_C = 7mA	38			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 1mA			0.8	V
Transition frequency	f_T	V_{CB} = 10V, I_E = –5mA, f = 100MHz	360	550	820	MHz
Common emitter reverse transfer capacitance	C_{re}	V_{CE} = 10V, I_C = 1mA, f = 10.7MHz		0.37	0.50	pF
Foward transfer admittance	y_{fe}	V_{CB} = 5V, I_E = –7mA, f = 35MHz	110	140		mS
Power gain	PG	V_{CC} = 6V, I_C = 7mA, f = 58MHz	21	25		dB

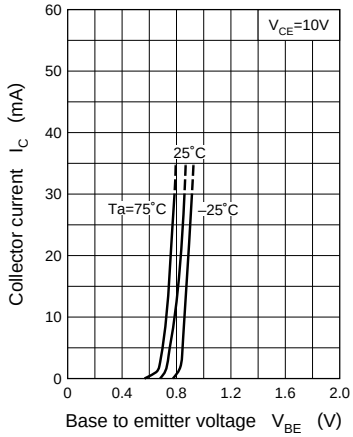
P_C — Ta



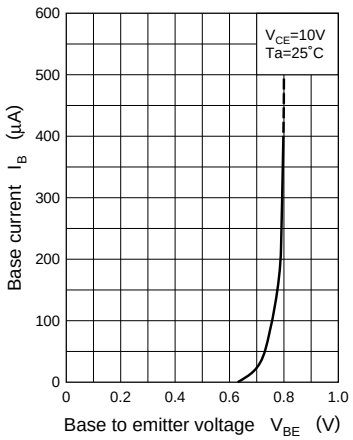
I_C — V_{CE}



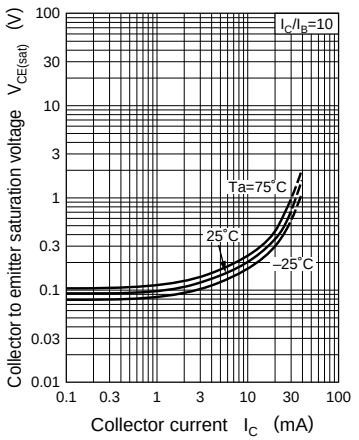
I_C — V_{BE}



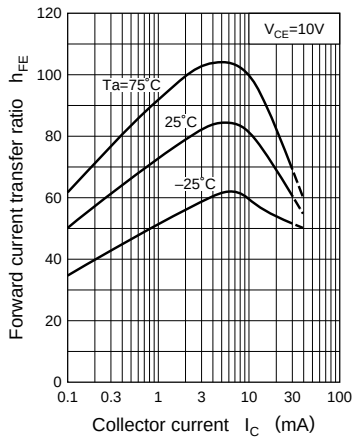
I_B — V_{BE}



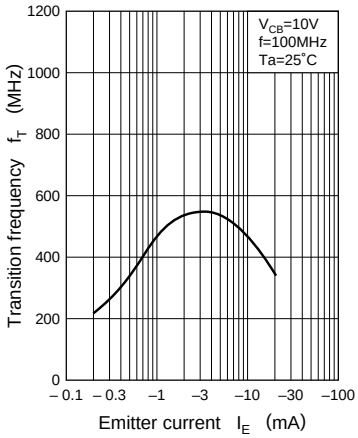
$V_{CE(sat)}$ — I_C



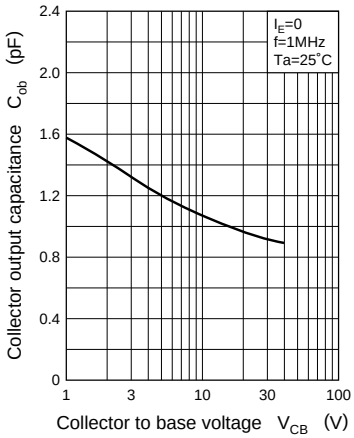
h_{FE} — I_C



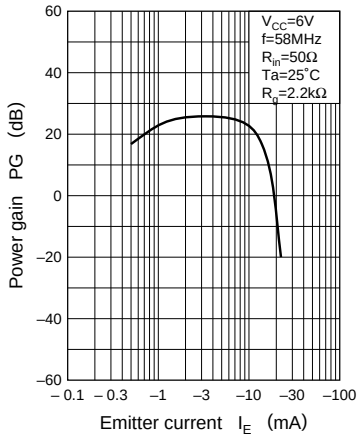
f_T — I_E



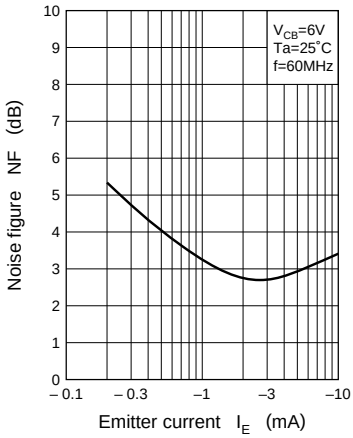
C_{ob} — V_{CB}



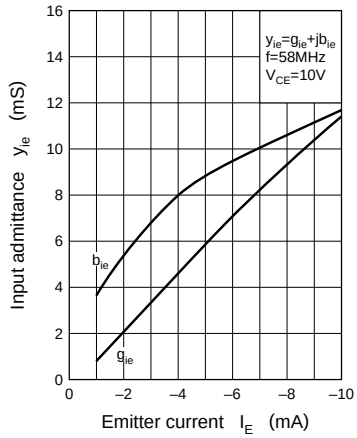
PG — I_E



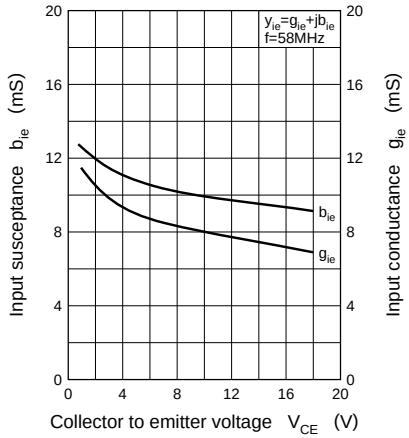
NF — I_E



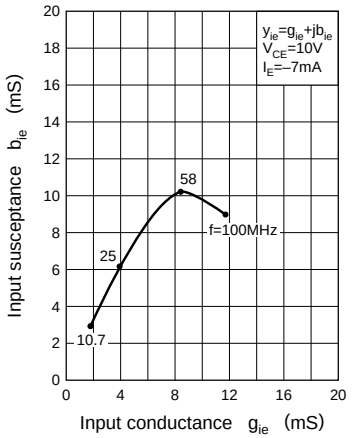
y_{ie} — I_E



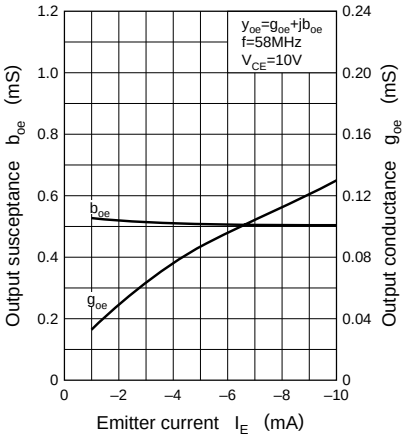
b_{ie} — V_{CE}



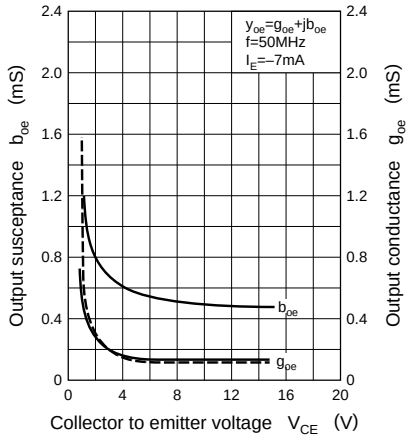
b_{ie} — g_{ie}



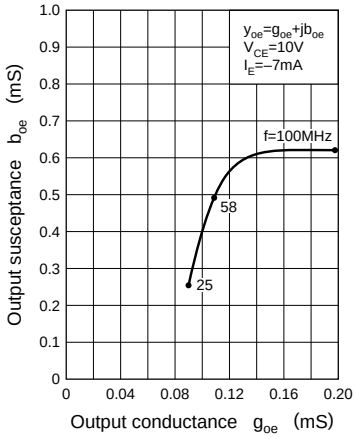
b_{oe} — I_E



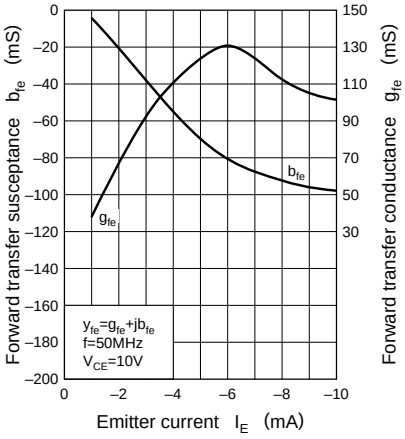
b_{oe} — V_{CE}



b_{oe} — g_{oe}



b_{fe} — I_E



b_{fe} — g_{fe}