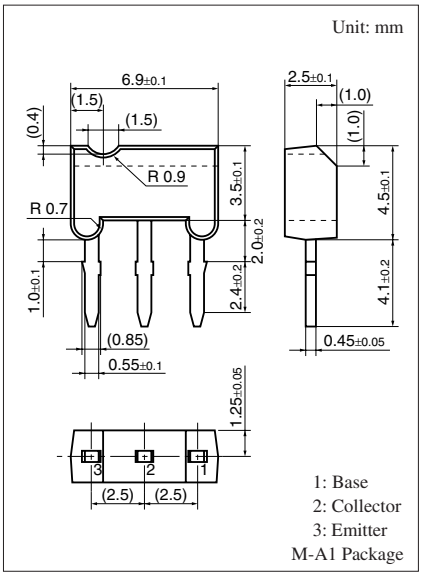
2SC2377

Silicon NPN epitaxial planar type

For high-frequency amplification



■ Features

- Optimum for RF amplification of FM/AM radios
- High transition frequency f_T
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	30	V
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Emitter-base voltage (Collector open)	V_{EBO}	3	V
Collector current	I_C	15	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

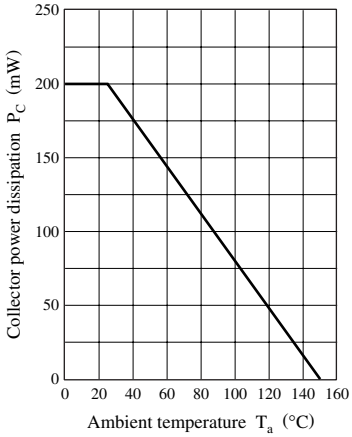
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Base-emitter voltage	V_{BE}	V_{CB} = 6 V, I_E = −1 mA		720		mV
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 10 V, I_E = 0			100	nA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 20 V, I_B = 0			10	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 3 V, I_C = 0			1	µA
Forward current transfer ratio *	h_{FE}	V_{CB} = 6 V, I_E = −1 mA	65		260	—
Transition frequency	f_T	V_{CB} = 6 V, I_E = −1 mA, f = 100 MHz	450	650		MHz
Noise figure	NF	V_{CB} = 6 V, I_E = −1 mA, f = 100 MHz		3.3	5.0	dB
Power gain	G_P	V_{CB} = 6 V, I_E = −1 mA, f = 100 MHz	20	24		dB
Reverse transfer capacitance (Common emitter)	C_{re}	V_{CB} = 6 V, I_E = −1 mA, f = 10.7 MHz		0.8	1.0	pF

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

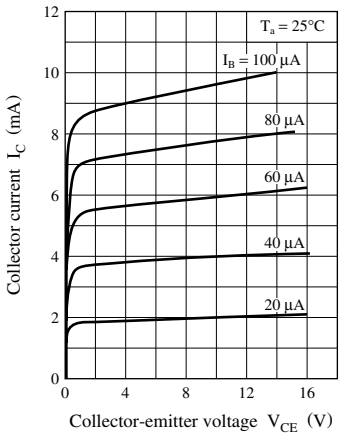
2. *: Rank classification

Rank	C	D
h_{FE}	65 to 160	100 to 260

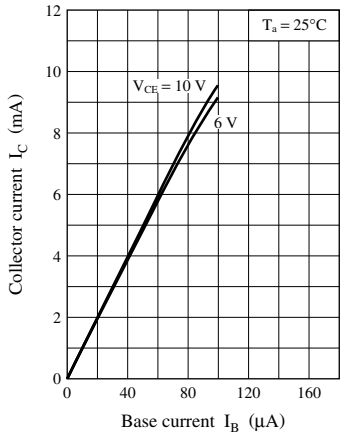
P_C — T_a



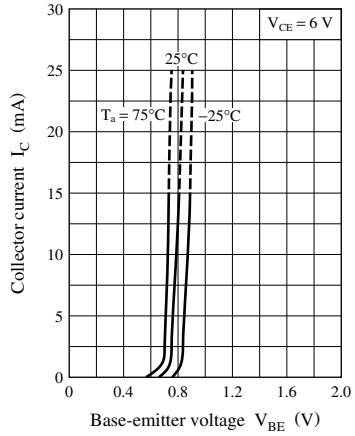
I_C — V_{CE}



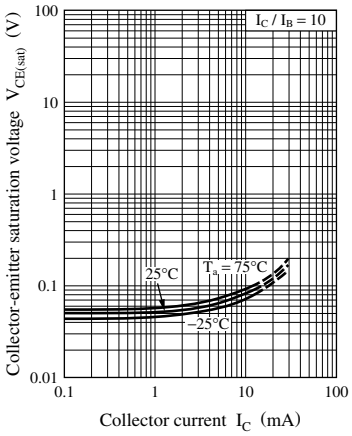
I_C — I_B



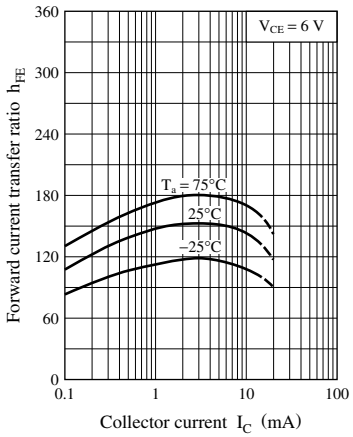
I_C — V_{BE}



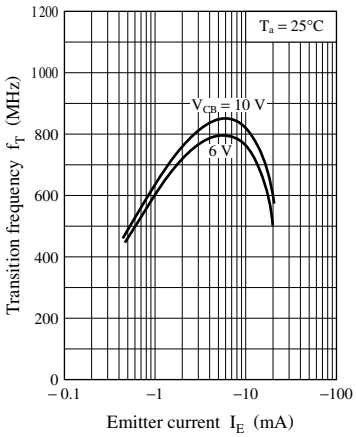
$V_{CE(sat)}$ — I_C



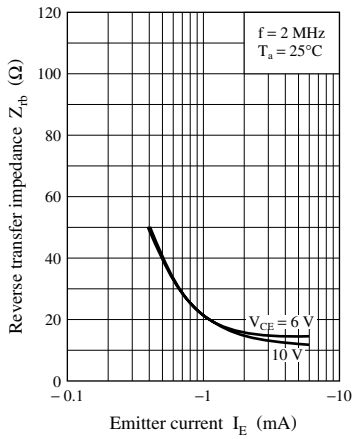
h_{FE} — I_C



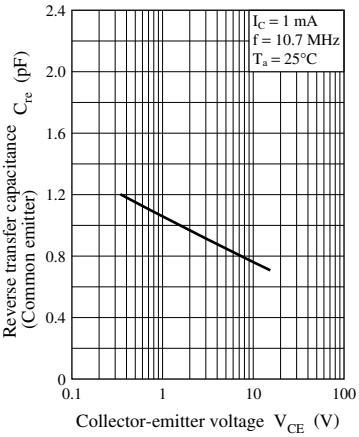
f_T — I_E



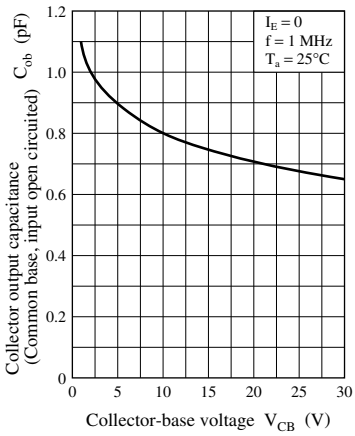
Z_{rb} — I_E



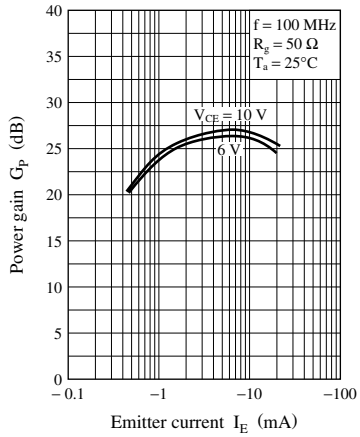
C_{re} — V_{CE}



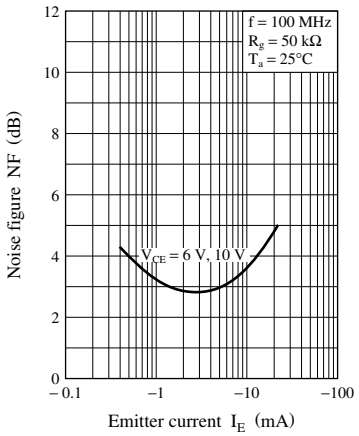
C_{ob} — V_{CB}



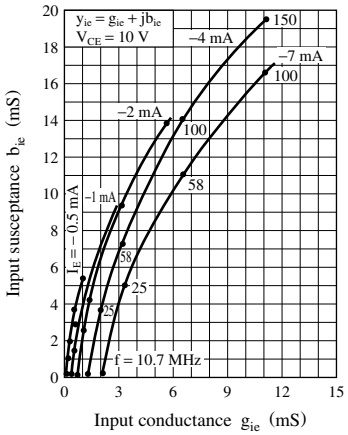
G_P — I_E



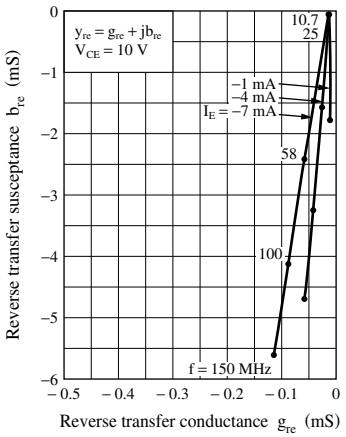
NF — I_E



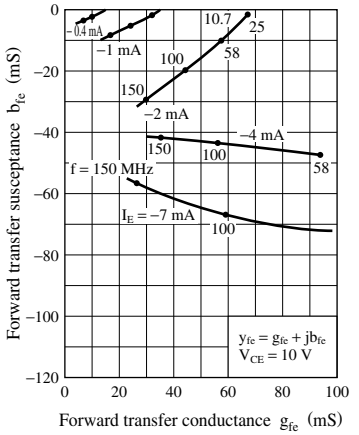
b_{ie} — g_{ie}



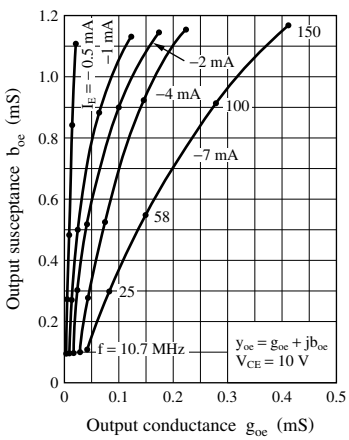
b_{re} — g_{re}



b_{fe} — g_{fe}



b_{oe} — g_{oe}



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