

2SC2377

Silicon NPN epitaxial planar type

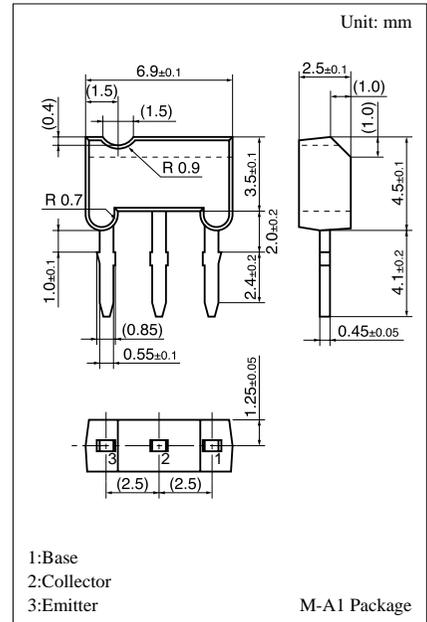
For high-frequency amplification

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

Parameter	Symbol	Rated	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	15	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$



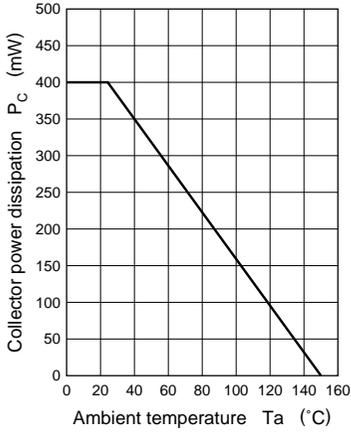
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 10\text{V}, I_E = 0$			100	nA
	I_{CEO}	$V_{CE} = 20\text{V}, I_B = 0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 3\text{V}, I_C = 0$			1	μA
Forward current transfer ratio	h_{FE}^*	$V_{CB} = 6\text{V}, I_E = -1\text{mA}$	65		260	
Base to emitter voltage	V_{BE}	$V_{CB} = 6\text{V}, I_E = -1\text{mA}$		720		mV
Transition frequency	f_T	$V_{CB} = 6\text{V}, I_E = -1\text{mA}, f = 100\text{MHz}$	450	650		MHz
Noise figure	NF	$V_{CB} = 6\text{V}, I_E = -1\text{mA}$		3.3	5	dB
Power gain	PG	$V_{CB} = 6\text{V}, I_E = -1\text{mA}$	20	24		dB
Common emitter reverse transfer capacitance	C_{re}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$		0.8	1	pF

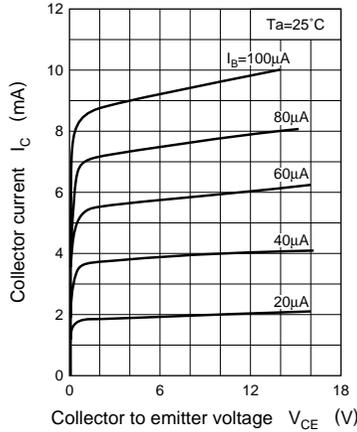
* h_{FE} Rank classification

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

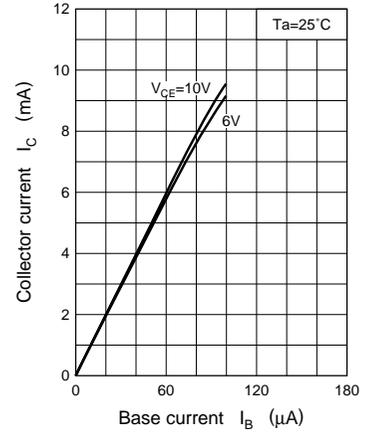
$P_C - T_a$



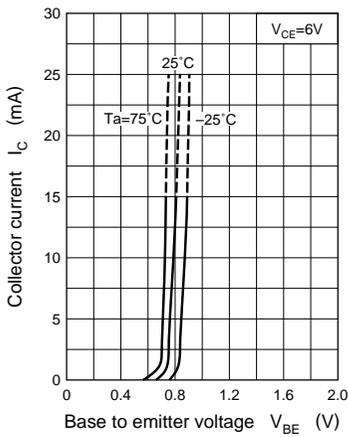
$I_C - V_{CE}$



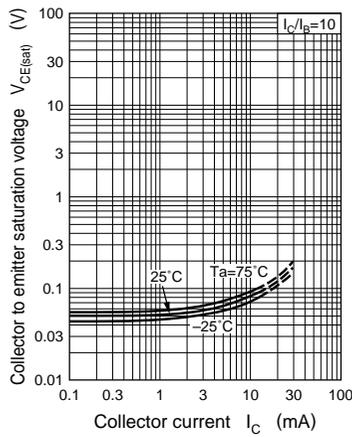
$I_C - I_B$



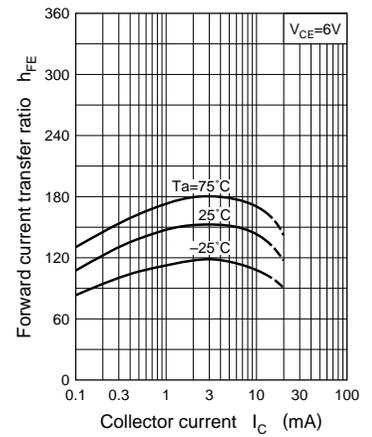
$I_C - V_{BE}$



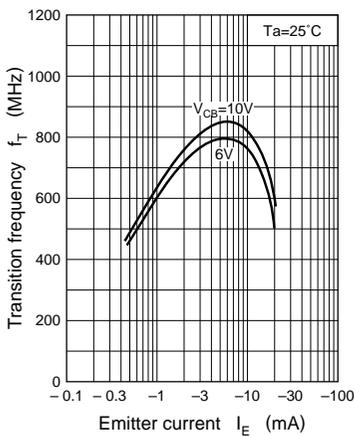
$V_{CE(sat)} - I_C$



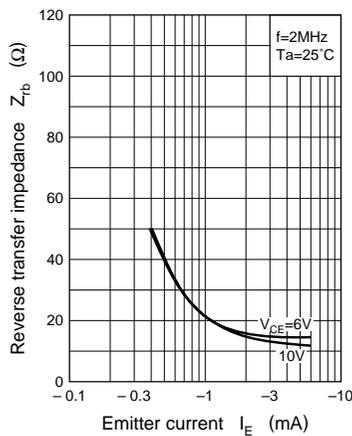
$h_{FE} - I_C$



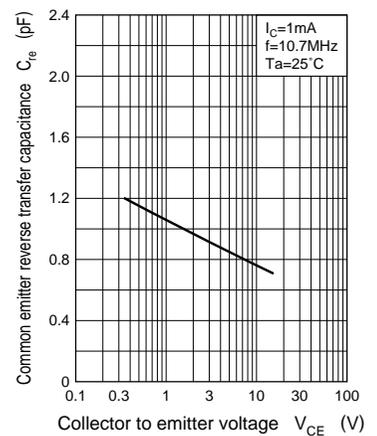
$f_T - I_E$

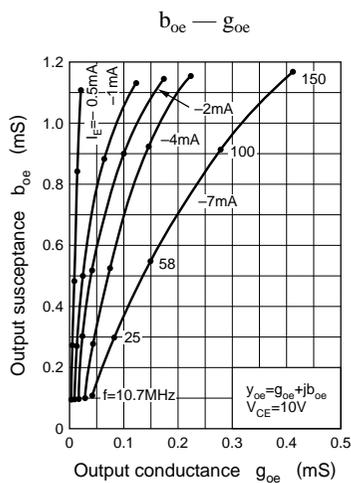
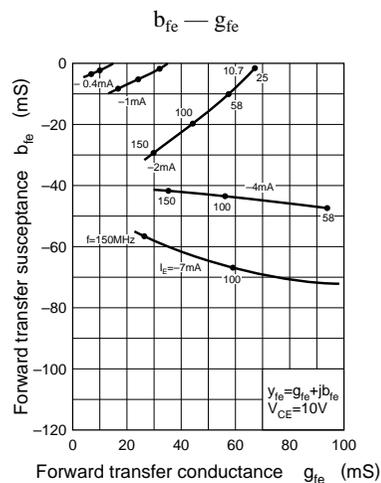
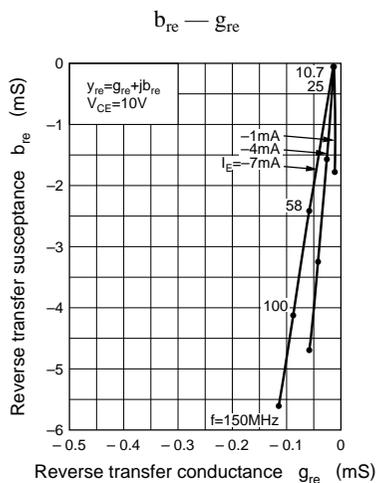
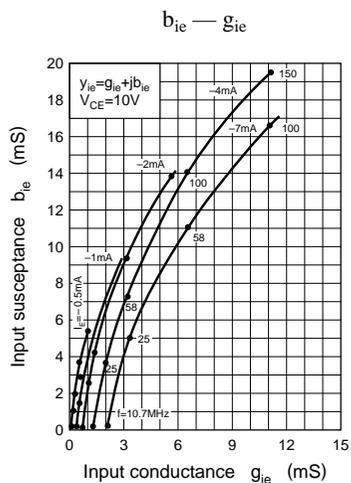
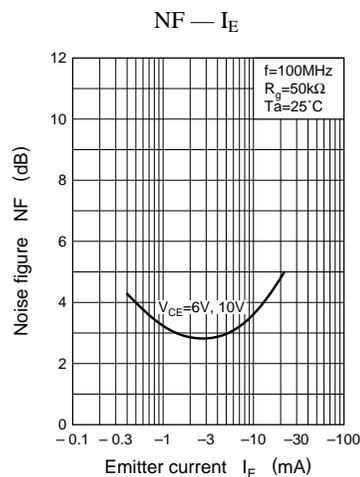
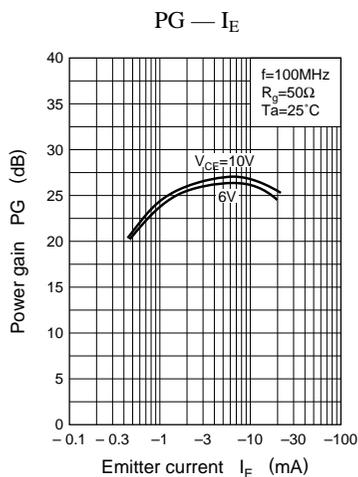
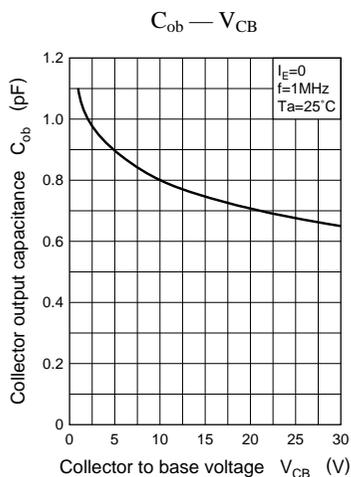


$Z_{rb} - I_E$



$C_{re} - V_{CE}$





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