

2SC1047

Silicon NPN epitaxial planer type

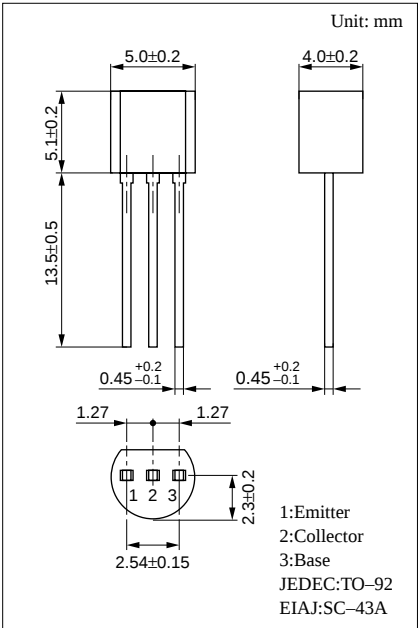
For high-frequency amplification

Features

- Optimum for RF amplification of FM/AM radios.
- 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	20	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

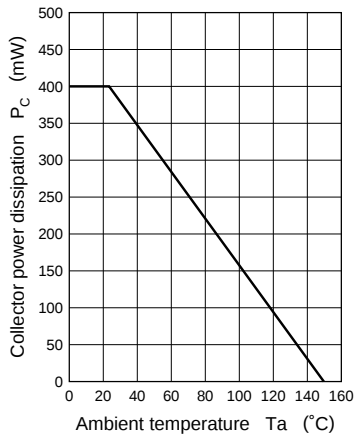
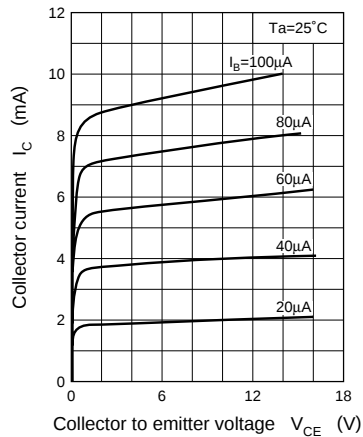
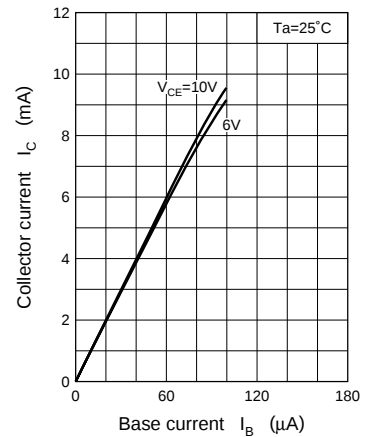
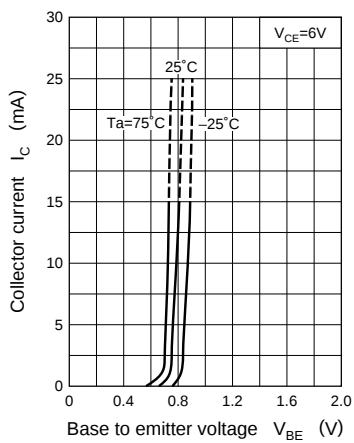
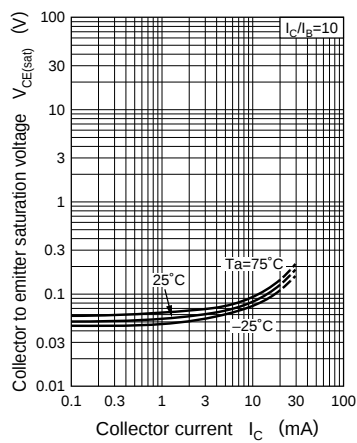
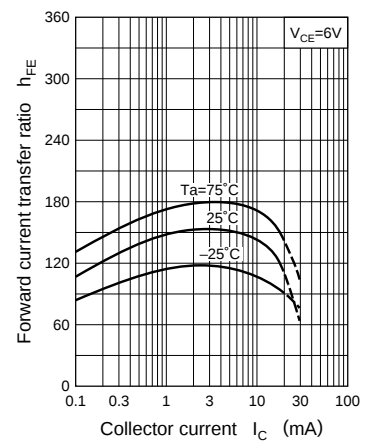
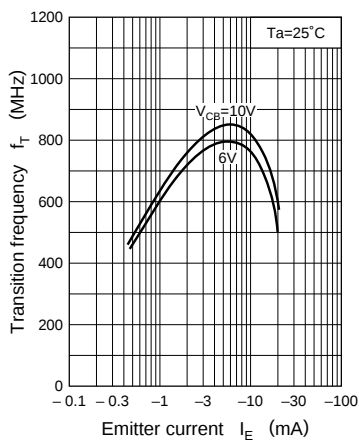
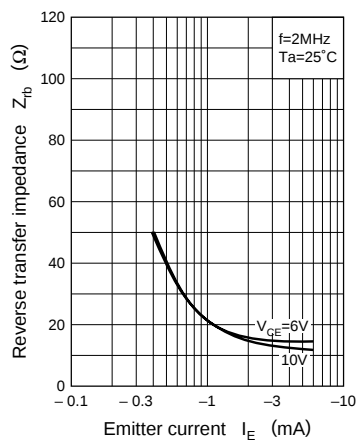
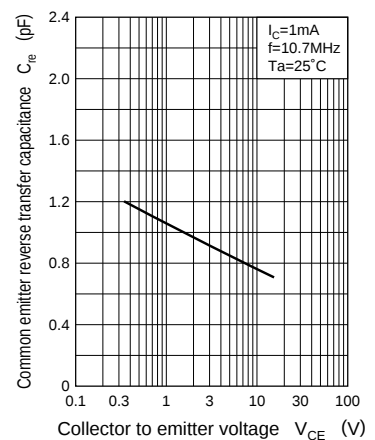


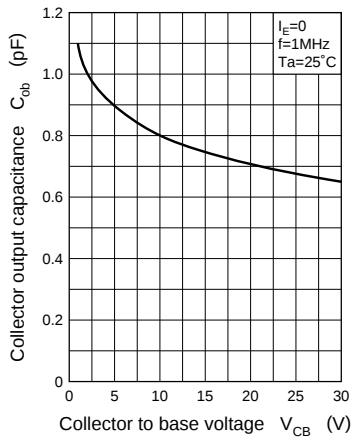
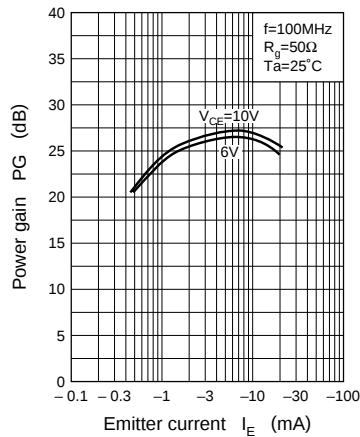
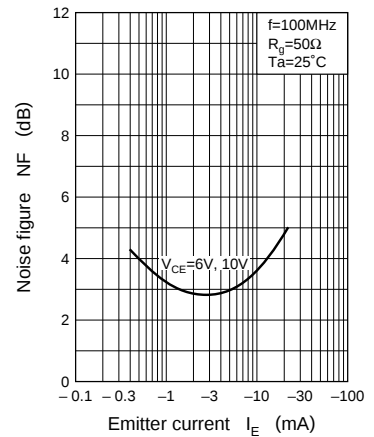
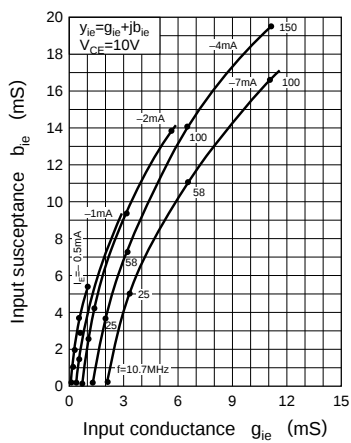
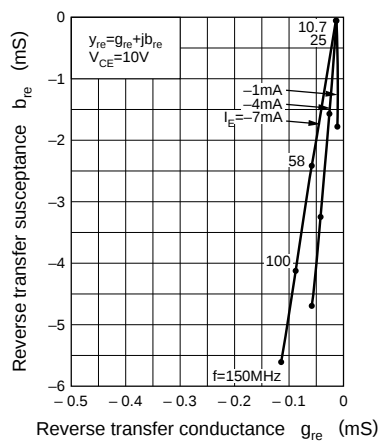
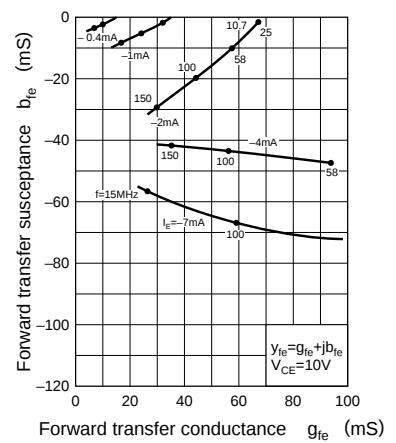
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	$I_C = 10\mu A, I_E = 0$	30			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	3			V
Forward current transfer ratio	h_{FE}^*	$V_{CB} = 6V, I_E = -1mA$	40		260	
Base to emitter voltage	V_{BE}	$V_{CB} = 6V, I_E = -1mA$		0.72		V
Common emitter reverse transfer capacitance	C_{re}	$V_{CE} = 6V, I_C = 1mA, f = 10.7MHz$		0.8	1	pF
Transition frequency	f_T	$V_{CB} = 6V, I_E = -1mA, f = 200MHz$	450	650		MHz
Power gain	PG	$V_{CB} = 6V, I_E = -1mA, f = 100MHz$	20			dB
Noise figure	NF	$V_{CB} = 6V, I_E = -1mA, f = 100MHz$		3.3	5	dB

* h_{FE} Rank classification

Rank	B	C	D
h_{FE}	40 ~ 110	65 ~ 160	100 ~ 260

$P_C - T_a$  $I_C - V_{CE}$  $I_C - I_B$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $Z_{rb} - I_E$  $C_{re} - V_{CE}$ 

$C_{ob} - V_{CB}$  $PG - I_E$  $NF - I_E$  $b_{ie} - g_{ie}$  $b_{re} - g_{re}$  $b_{fe} - g_{fe}$  $b_{oe} - g_{oe}$ 