

2SC1215

Silicon NPN epitaxial planer type

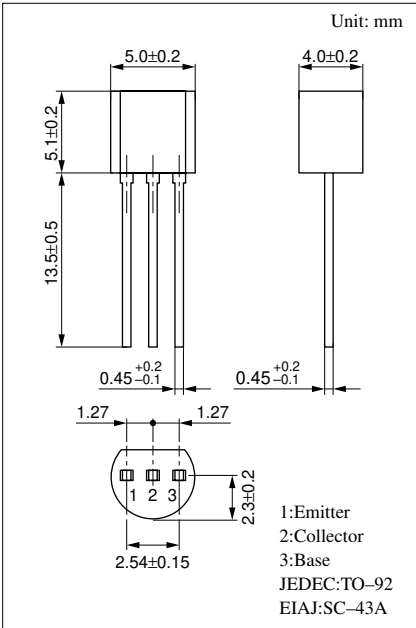
For high-frequency (VHF band) amplification and oscillation

■ Features

- 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	400	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

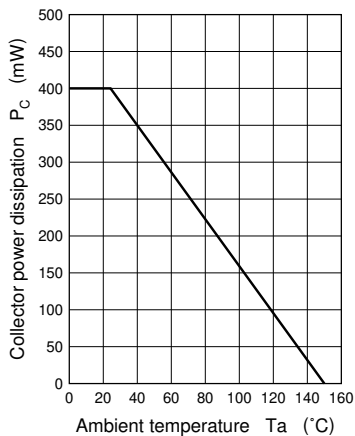
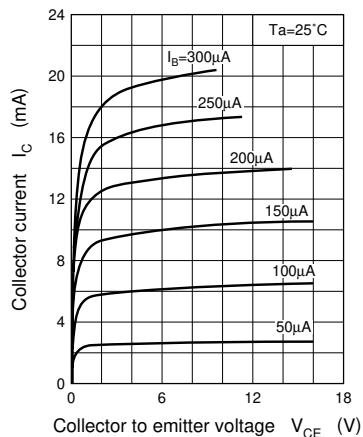
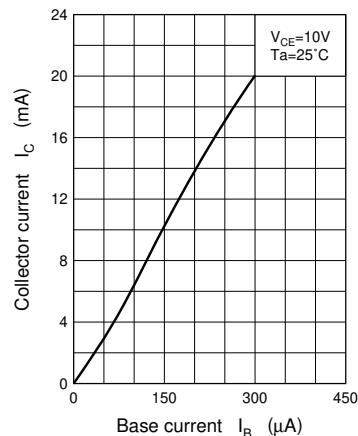
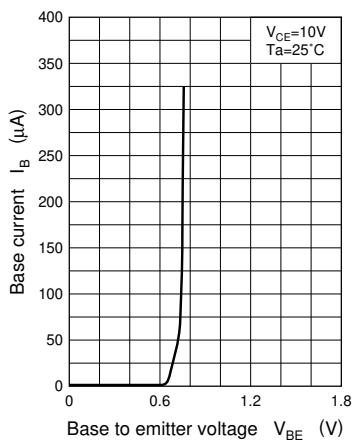
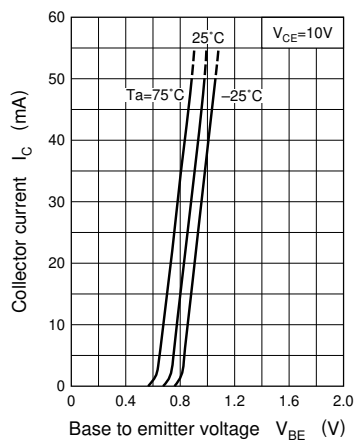
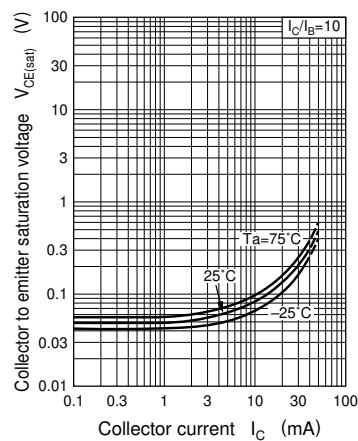
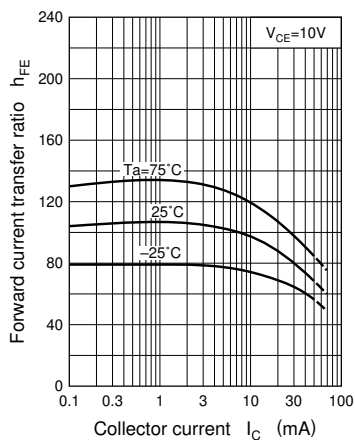
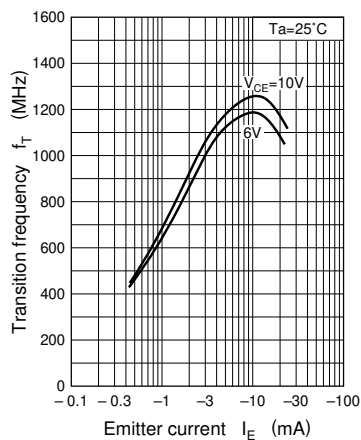
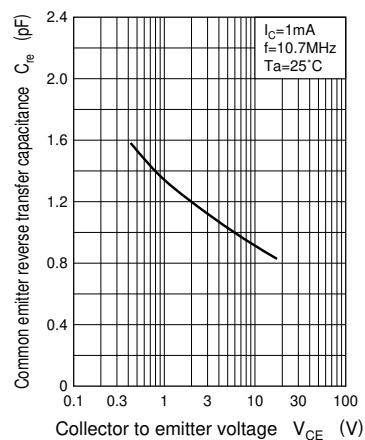


■ Electrical Characteristics (Ta=25°C)

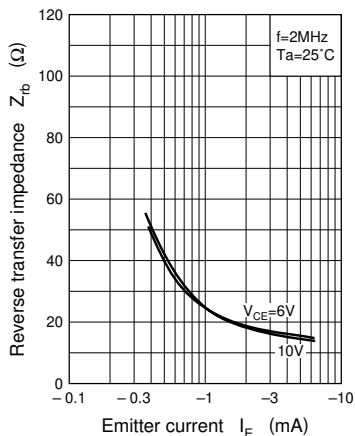
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	$I_C = 100\mu A, I_E = 0$	30			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	3			V
Forward current transfer ratio	h_{FE}	$V_{CB} = 10V, I_E = -2mA$	25			
Base to emitter voltage	V_{BE}	$V_{CB} = 10V, I_E = -2mA$		0.72		V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$		0.1		V
Common emitter reverse transfer capacitance	C_{re}	$V_{CE} = 10V, I_C = 1mA, f = 10.7MHz$		1	1.5	pF
Transition frequency	f_T^*	$V_{CB} = 10V, I_E = -15mA, f = 100MHz$	600	1200	1600	MHz
Power gain	PG	$V_{CB} = 10V, I_E = -1mA, f = 100MHz$		20		dB
Base time constant	$r_{bb'} \cdot C_C$	$V_{CB} = 10V, I_E = -10mA, f = 450kHz$			25	ps

* f_T Rank classification

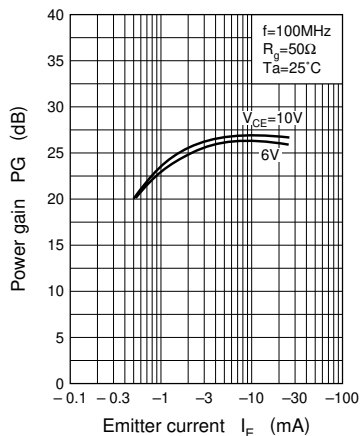
Rank	T	S
$f_T(MHz)$	600 ~ 1300	900 ~ 1600

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

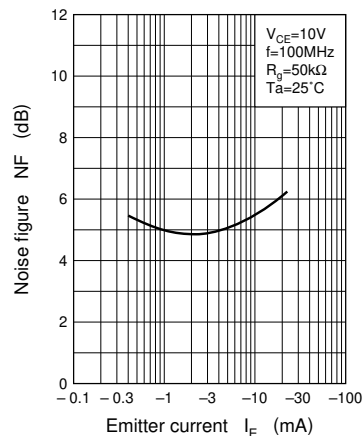
$Z_{rb} - I_E$



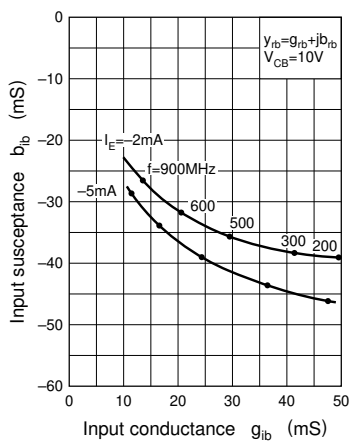
$PG - I_E$



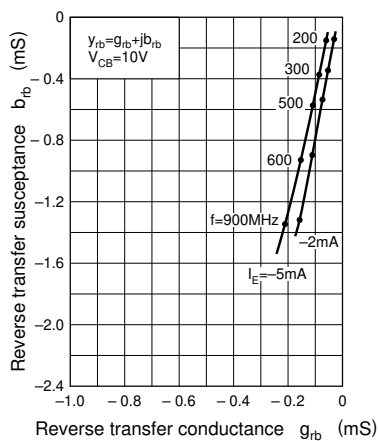
$NF - I_E$



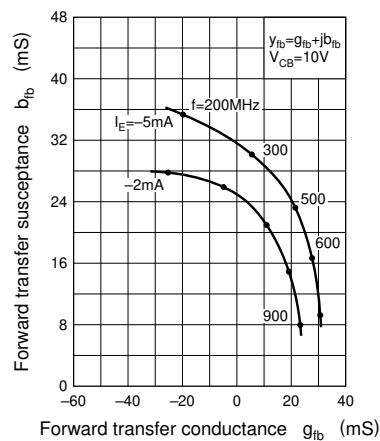
$b_{ib} - g_{ib}$



$b_{rb} - g_{rb}$



$b_{fb} - g_{fb}$



$b_{ob} - g_{ob}$

