

2SC1215

Silicon NPN epitaxial planer type

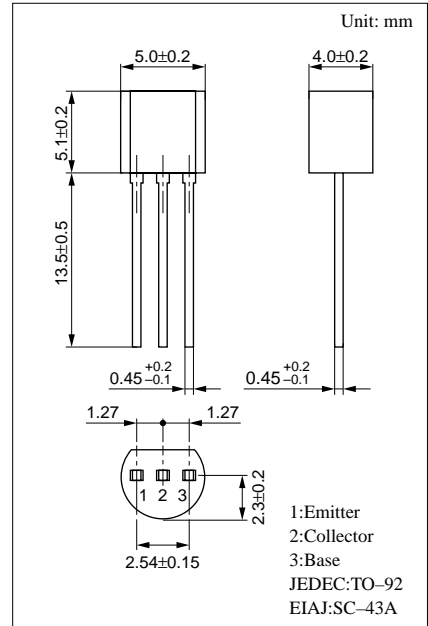
For high-frequency (VHF band) amplification and oscillation

■ 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 |



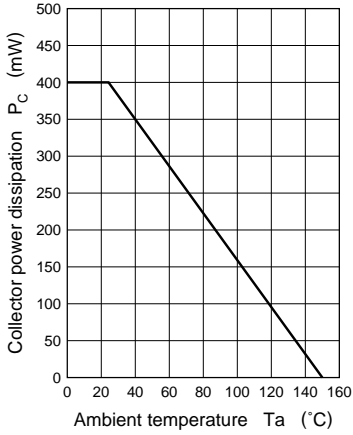
■ Electrical Characteristics (Ta=25°C)

| 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 |

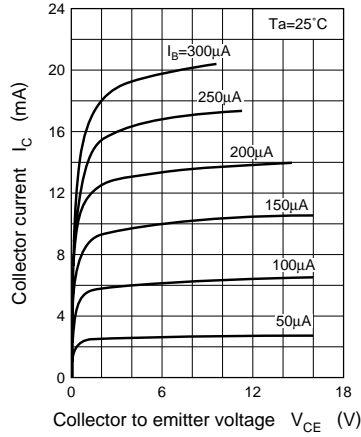
* f_T Rank classification

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

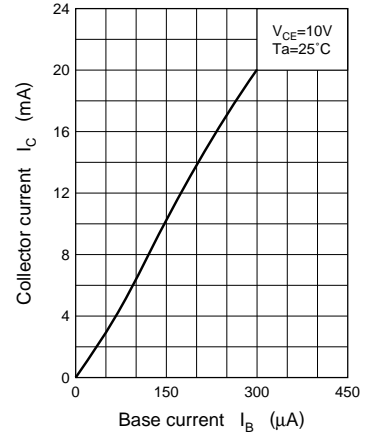
$P_C - T_a$



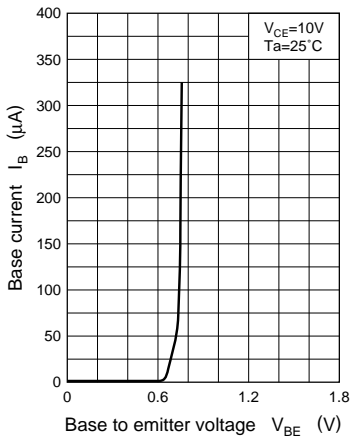
$I_C - V_{CE}$



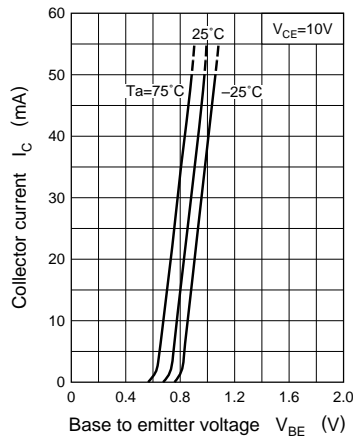
$I_C - I_B$



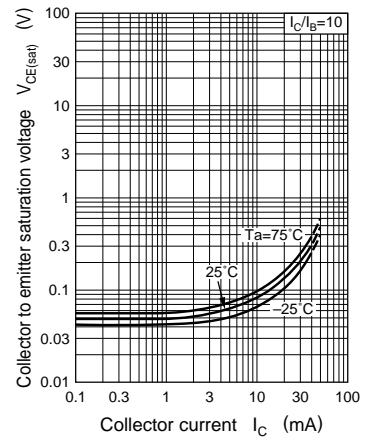
$I_B - V_{BE}$



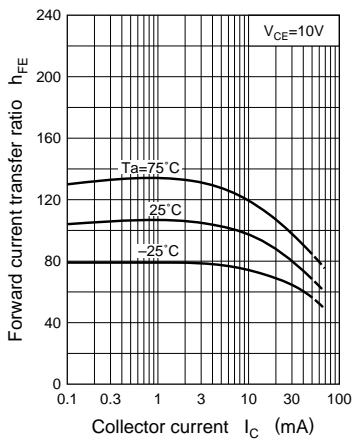
$I_C - V_{BE}$



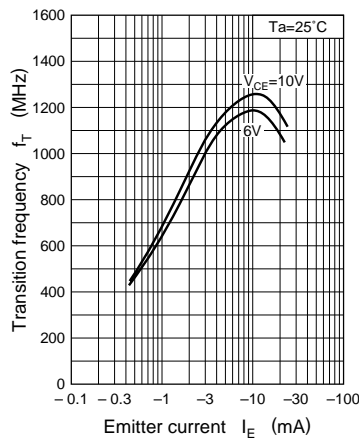
$V_{CE(sat)} - I_C$



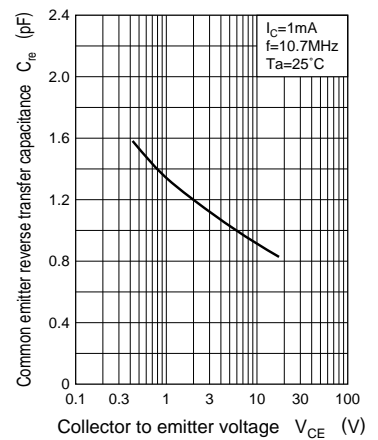
$h_{FE} - I_C$



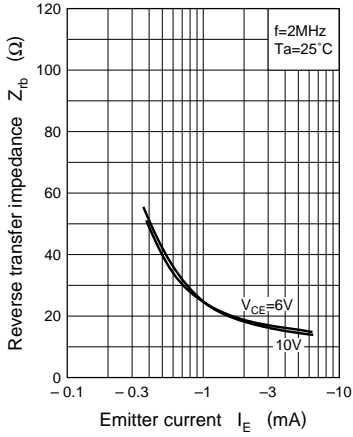
$f_T - I_E$



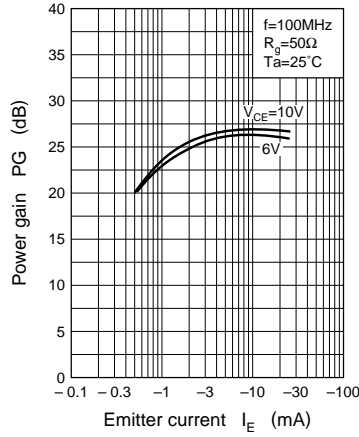
$C_{re} - V_{CE}$



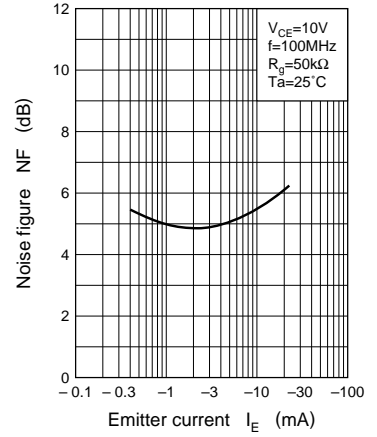
$Z_{rb} - I_E$



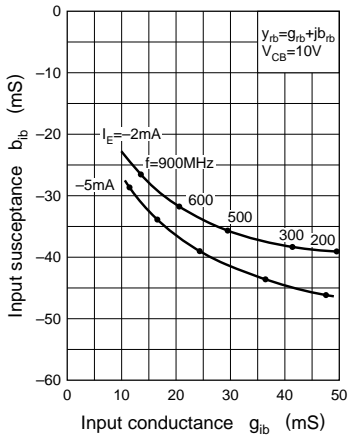
$PG - I_E$



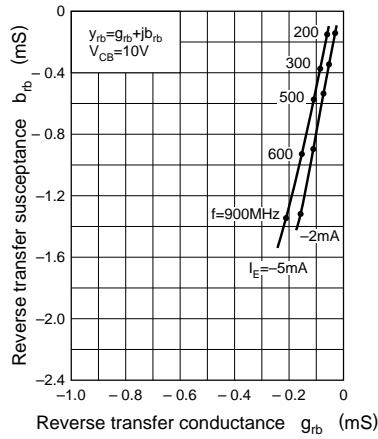
$NF - I_E$



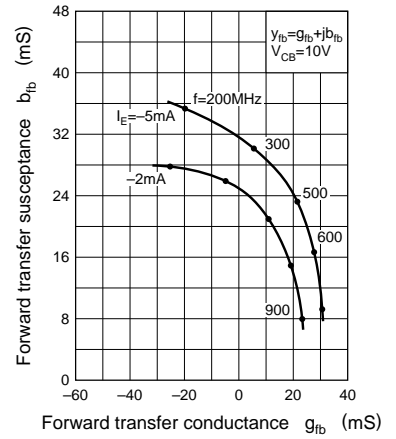
$b_{ib} - g_{ib}$



$b_{rb} - g_{rb}$



$b_{fb} - g_{fb}$



$b_{ob} - g_{ob}$

