

# 2SC829

## Silicon NPN epitaxial planer type

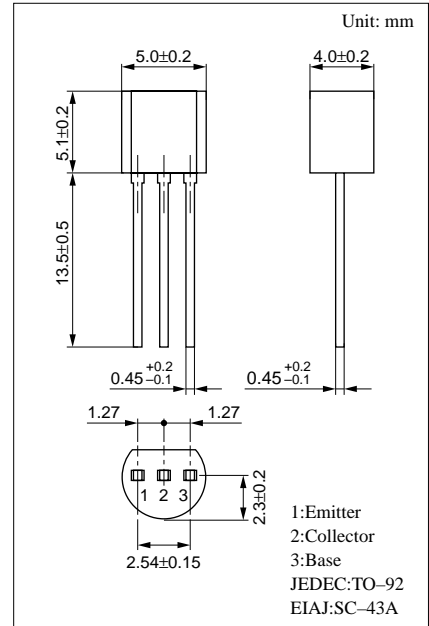
For high-frequency amplification

### Features

- Optimum for RF amplification, oscillation, mixing, and IF stage of FM/AM radios.

### 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      | $V_{EBO}$ | 5          | V    |
| Collector current            | $I_C$     | 30         | mA   |
| Collector power dissipation  | $P_C$     | 400        | mW   |
| Junction temperature         | $T_j$     | 150        | °C   |
| Storage temperature          | $T_{stg}$ | -55 ~ +150 | °C   |



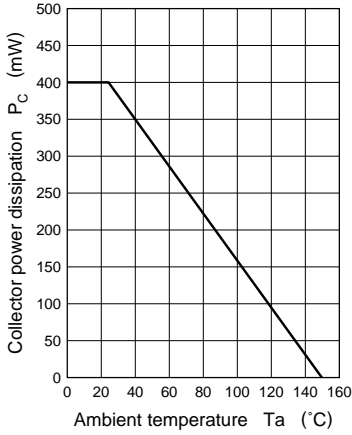
### Electrical Characteristics (Ta=25°C)

| Parameter                                   | Symbol     | Conditions                             | min | typ | max | Unit     |
|---|------------|--|-----|-----|-----|----------|
| Collector to base voltage                   | $V_{CBO}$  | $I_C = 10\mu A, I_E = 0$               | 30  |     |     | V        |
| Collector to emitter voltage                | $V_{CEO}$  | $I_C = 2mA, I_B = 0$                   | 20  |     |     | V        |
| Emitter to base voltage                     | $V_{EBO}$  | $I_E = 10\mu A, I_C = 0$               | 5   |     |     | V        |
| Forward current transfer ratio              | $h_{FE}^*$ | $V_{CE} = 10V, I_C = 1mA$              | 70  |     | 250 |          |
| Transition frequency                        | $f_T$      | $V_{CB} = 10V, I_C = 1mA, f = 200MHz$  | 150 | 230 |     | MHz      |
| Common emitter reverse transfer capacitance | $C_{re}$   | $V_{CE} = 10V, I_C = 1mA, f = 10.7MHz$ |     | 1.3 | 1.6 | pF       |
| Reverse transfer impedance                  | $Z_{rb}$   | $V_{CB} = 10V, I_E = -1mA, f = 2MHz$   |     |     | 60  | $\Omega$ |

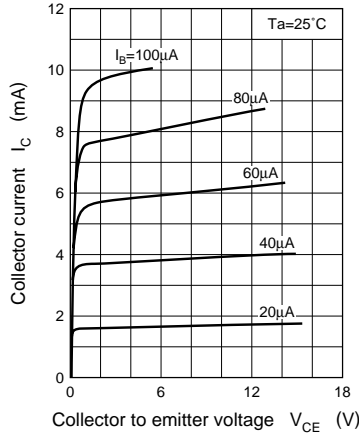
\* $h_{FE}$  Rank classification

| Rank     | B        | C         |
|----------|----------|-----------|
| $h_{FE}$ | 70 ~ 160 | 110 ~ 250 |

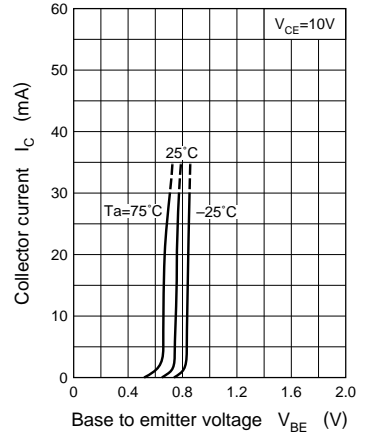
$P_C - T_a$



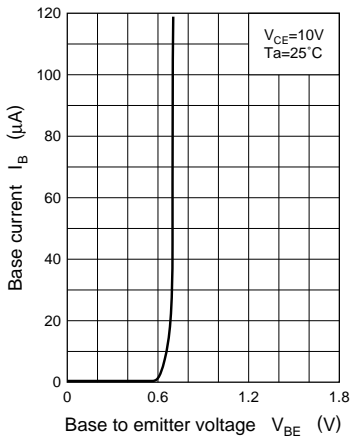
$I_C - V_{CE}$



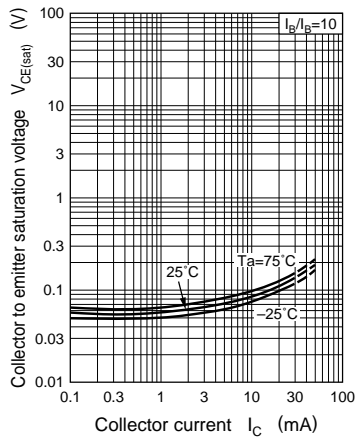
$I_C - V_{BE}$



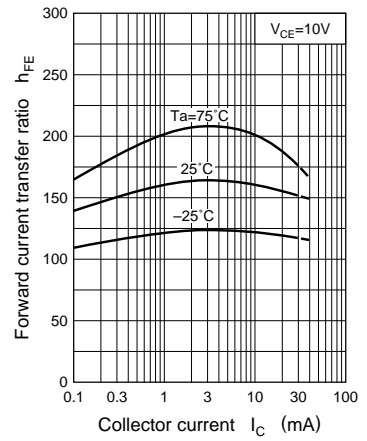
$I_B - V_{BE}$



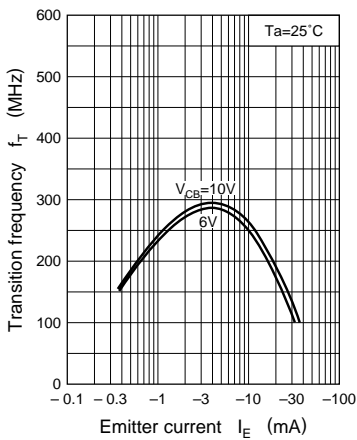
$V_{CE(sat)} - I_C$



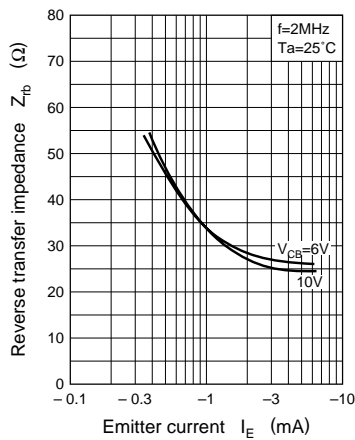
$h_{FE} - I_C$



$f_T - I_E$



$Z_{rb} - I_E$



$C_{re} - V_{CE}$

