



# 2SC3000

## HF Amplifier Applications

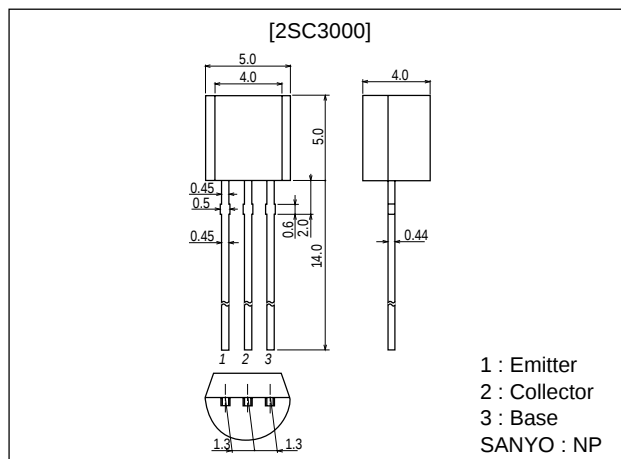
## Features

- FBET series.
- High  $f_T$  and small  $C_{re}$ .

## Package Dimensions

unit:mm

2003B



## Specifications

### Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter                    | Symbol    | Conditions | 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 Dissipation        | $P_C$     |            | 250         | mW   |
| Junction Temperature         | $T_J$     |            | 125         | °C   |
| Storage Temperature          | $T_{stg}$ |            | –55 to +125 | °C   |

### Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                       | Symbol    | Conditions                      | Ratings |     |      | Unit    |
|---------------------------------|-----------|---------------------------------|---------|-----|------|---------|
|                                 |           |                                 | min     | typ | max  |         |
| Collector Cutoff Current        | $I_{CBO}$ | $V_{CB}=10V, I_E=0$             |         |     | 0.1  | $\mu A$ |
| Emitter Cutoff Current          | $I_{EBO}$ | $V_{EB}=4V, I_C=0$              |         |     | 0.1  | $\mu A$ |
| DC Current Gain                 | $h_{FE}$  | $V_{CE}=6V, I_C=1mA$            | 60*     |     | 320* |         |
| Gain-Bandwidth Product          | $f_T$     | $V_{CE}=6V, I_C=1mA$            | 200     | 320 |      | MHz     |
| Reverse Transfer Capacitance    | $C_{re}$  | $V_{CB}=6V, f=1MHz$             | 0.7     | 1.1 | 1.4  | pF      |
| Base-to-Collector Time Constant | $rbb'C_C$ | $V_{CE}=6V, I_C=1mA, f=31.9MHz$ |         | 15  | 22   | ps      |
| Noise Figure                    | NF        | $V_{CE}=6V, I_C=1mA, f=100MHz$  |         | 3.0 |      | dB      |
| Power Gain                      | PG        | $V_{CE}=6V, I_C=1mA, f=100MHz$  |         | 25  |      | dB      |

\* : The 2SC2300 are classified by 1mA  $h_{FE}$  as follows :

| Rank     | D         | E          | F          |
|----------|-----------|------------|------------|
| $h_{FE}$ | 60 to 120 | 100 to 200 | 160 to 320 |

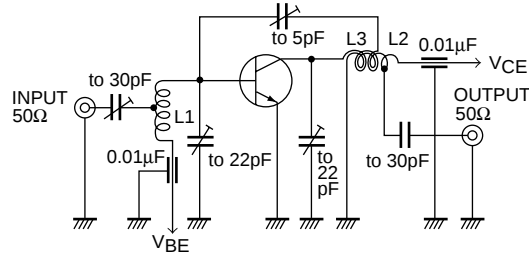
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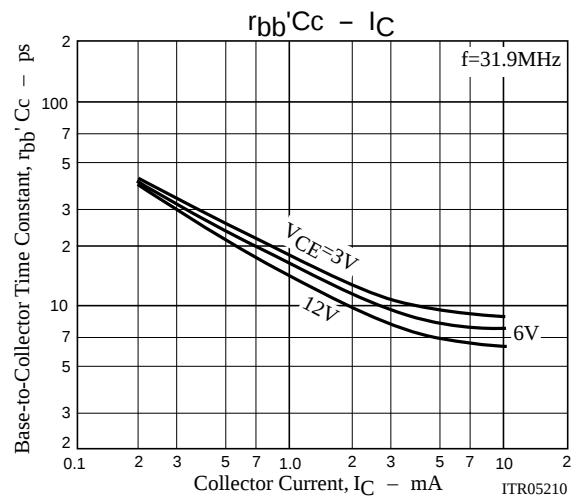
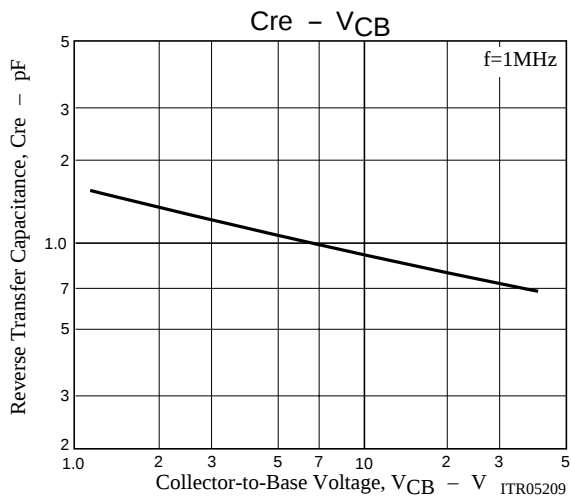
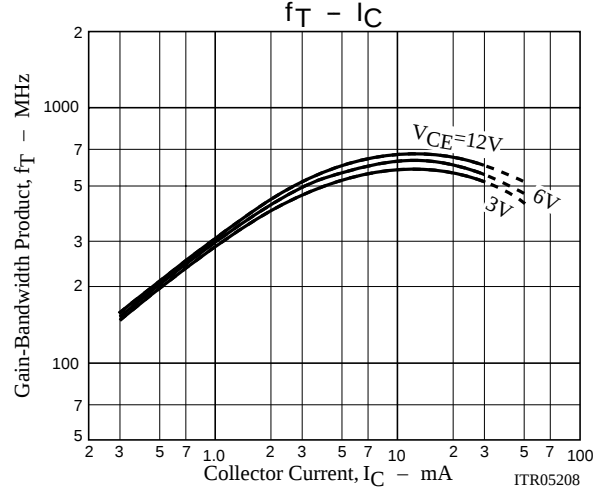
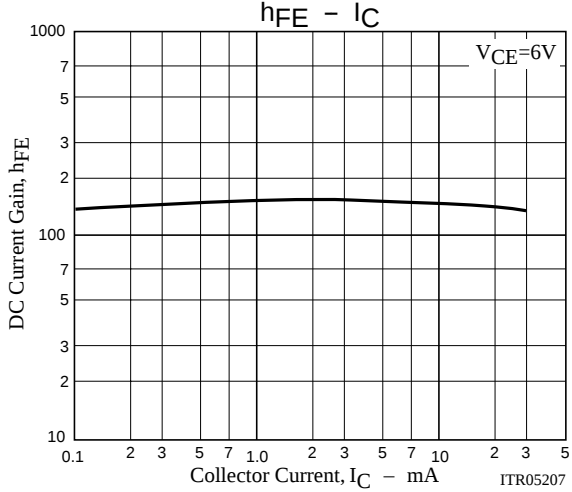
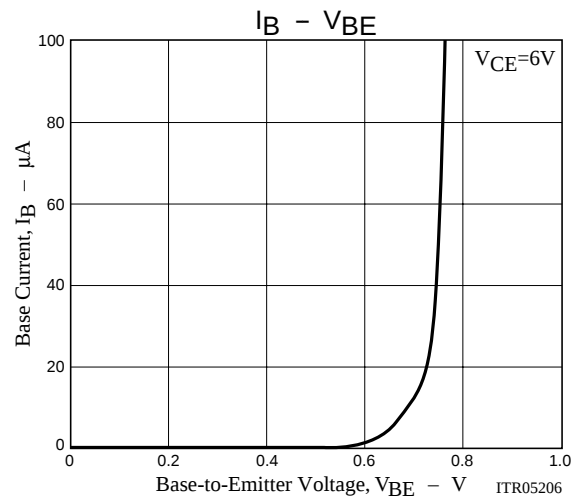
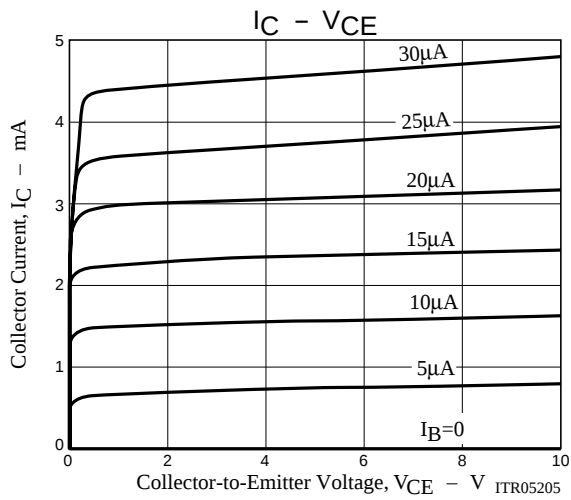
### NF, PG Test Circuit

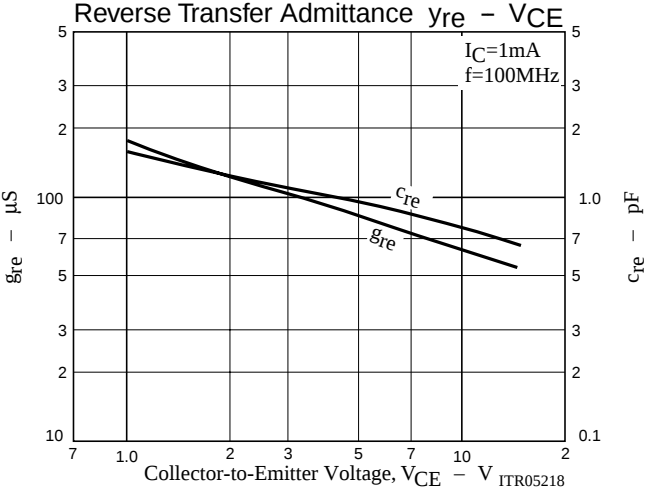
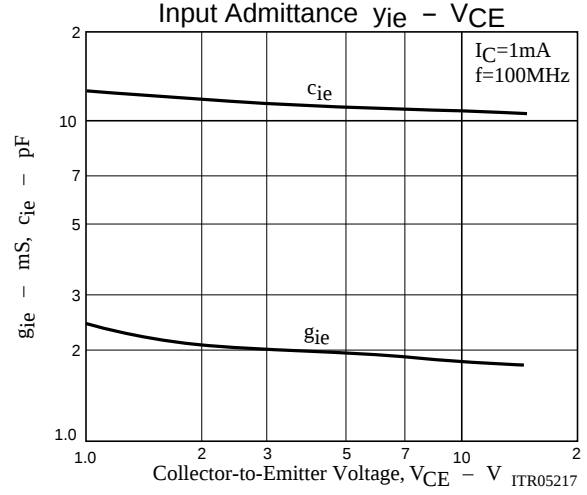
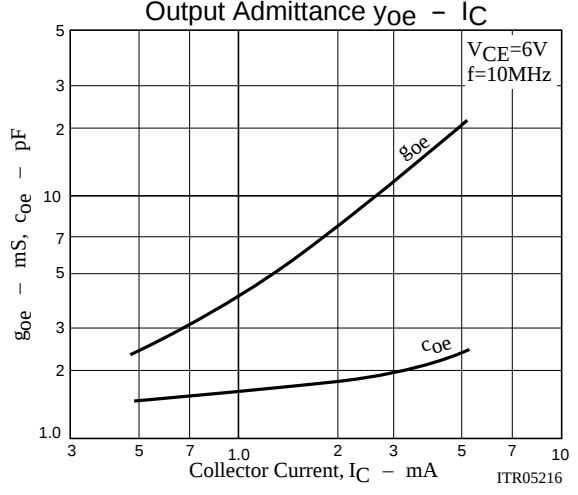
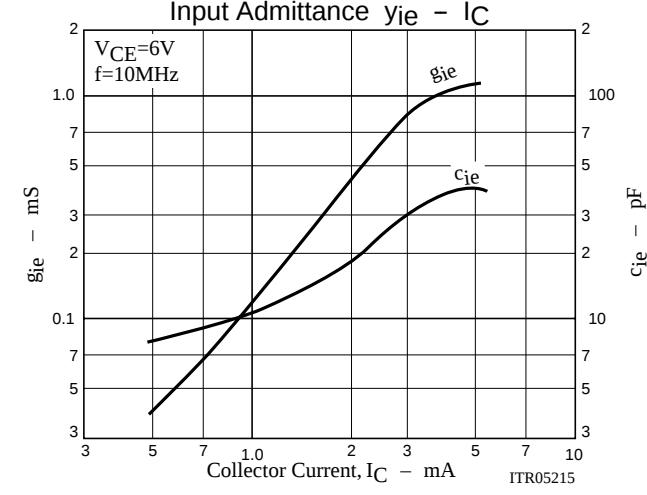
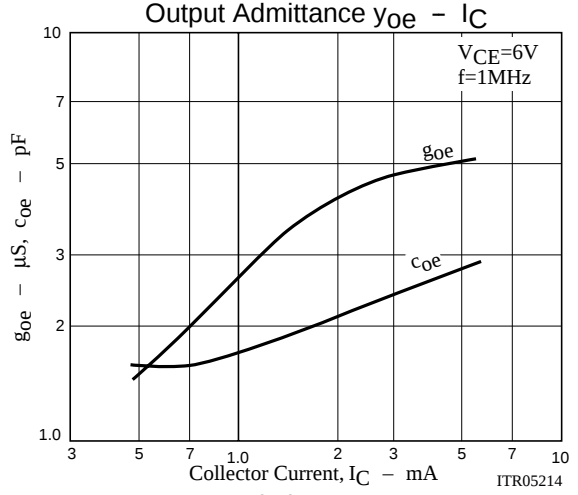
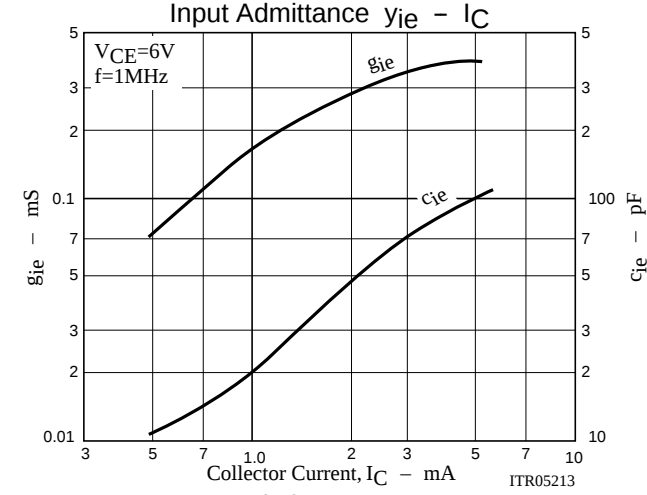
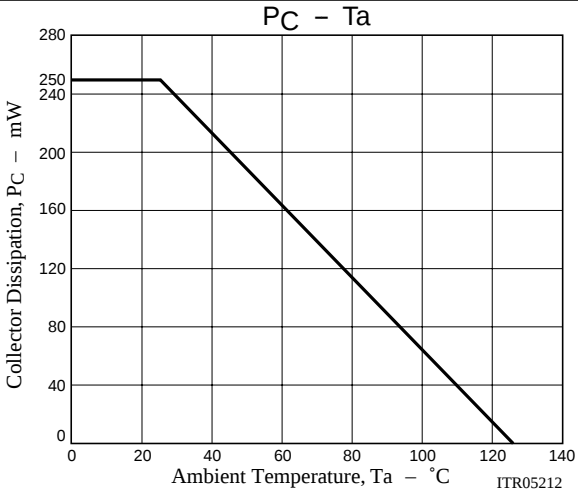
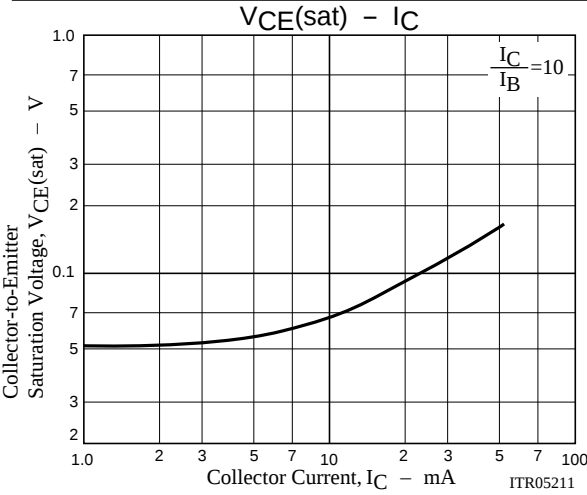


L1 : 1mmø plated wire, 10mmø 5T, tapped at 2T from  $V_{BE}$ .

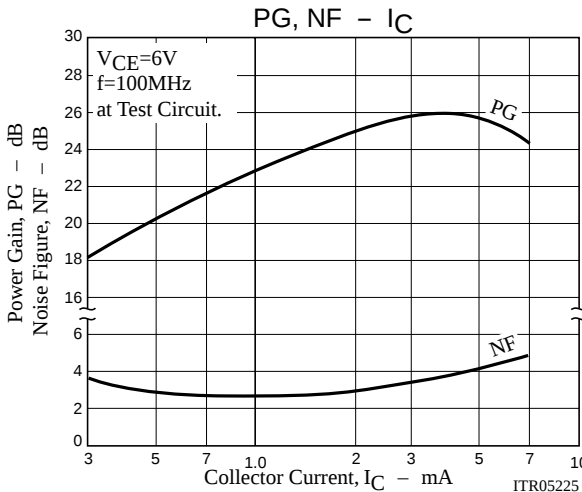
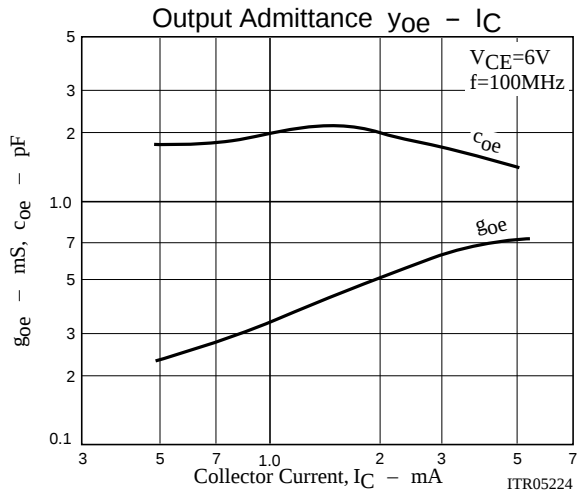
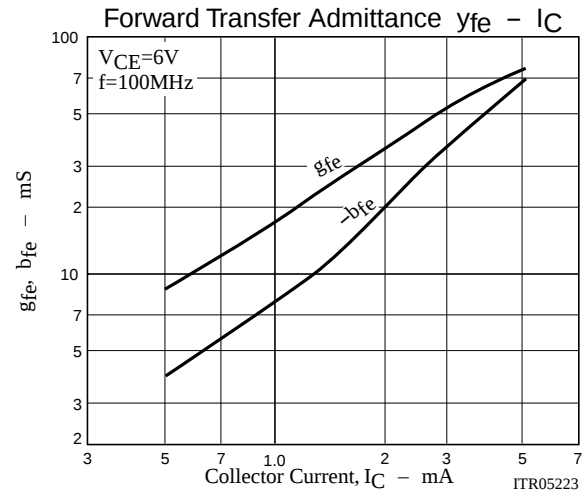
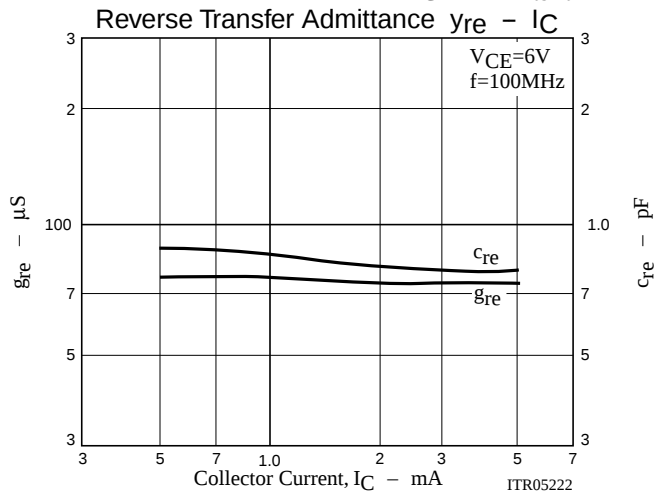
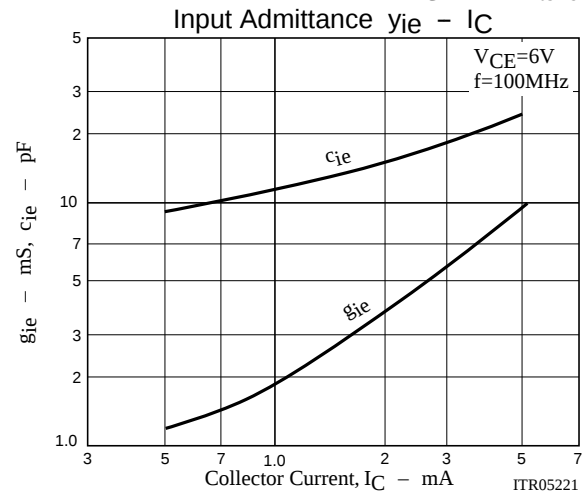
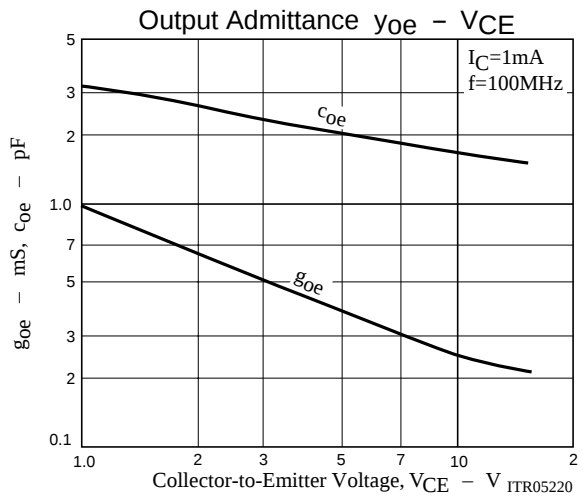
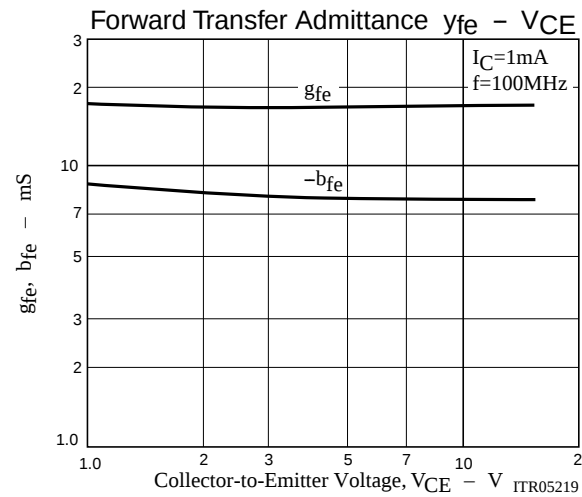
L2 : 1mmø plated wire, 10mmø 7T, tapped at 1T from  $V_{CE}$ .

L3 : 1mmø enameled wire, 10mmø 3T.





# 2SC3000



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