

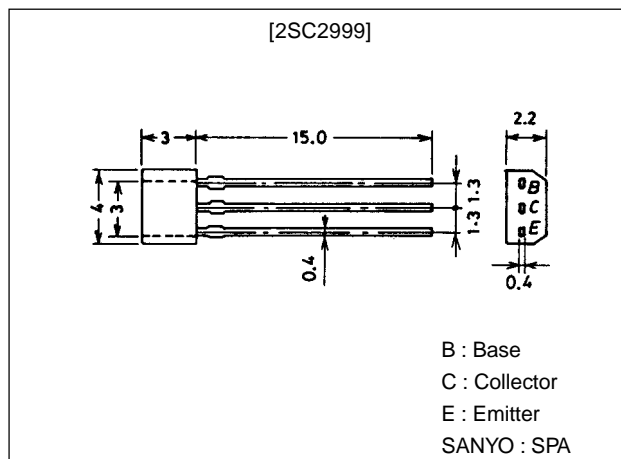
**2SC2999****HF Amplifier Applications****Features**

- FBET series.
- Very small-sized package permitting sets to be small-sized and slim.
- High f_T ($f_T=750\text{MHz}$ typ.) and small C_{re} ($C_{re}=0.6\text{pF}$ typ.).

Package Dimensions

unit:mm

2033

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CBO} | | 25 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | 20 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 3 | V |
| Collector Current | I_C | | 30 | mA |
| Collector Dissipation | P_C | | 150 | mW |
| Junction Temperature | T_J | | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -40 to +125 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------------|-------------|--|---------|-----|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=10\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=3\text{V}, I_C=0$ | | | 0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=6\text{V}, I_C=1\text{mA}$ | 40* | | 200* | |
| Gain-Bandwidth Product | f_T | $V_{CE}=6\text{V}, I_C=4\text{mA}$ | 450 | 750 | | MHz |
| Reverse Transfer Capacitance | C_{re} | $V_{CB}=6\text{V}, f=1\text{MHz}$ | | 0.6 | 0.9 | pF |
| Base-to-Collector Time Constant | $r_{bb}C_C$ | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=31.9\text{MHz}$ | | | 19 | ps |
| Noise Figure | NF | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$ | | 2.2 | | dB |
| Power Gain | PG | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$ | | 28 | | dB |

* : The 2SC2999 are classified as follows according to h_{FE} at 1mA :

| | | | | | | | | |
|----|---|----|----|---|-----|-----|---|-----|
| 40 | C | 80 | 60 | D | 120 | 100 | E | 200 |
|----|---|----|----|---|-----|-----|---|-----|

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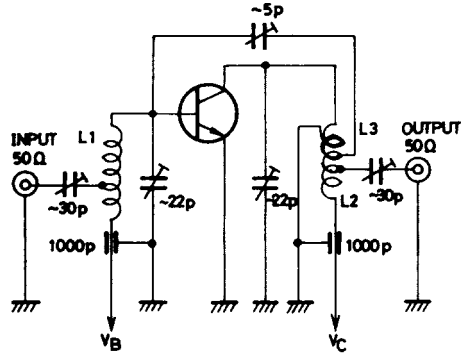
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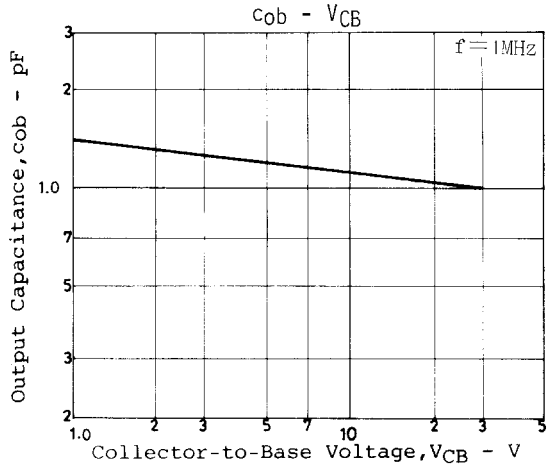
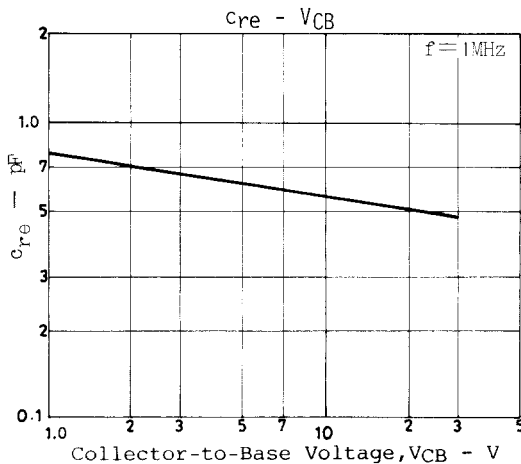
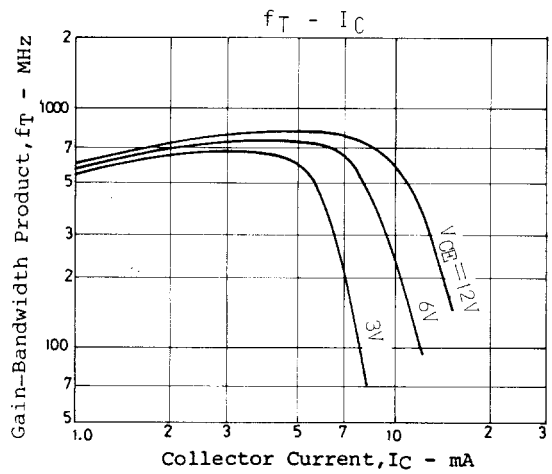
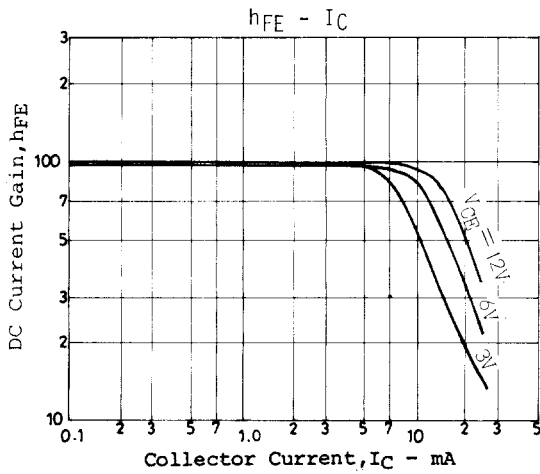
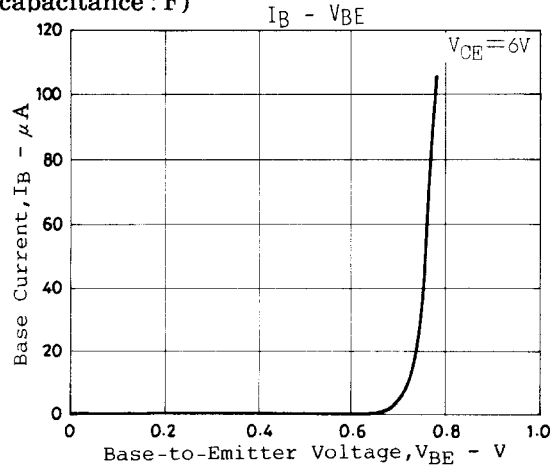
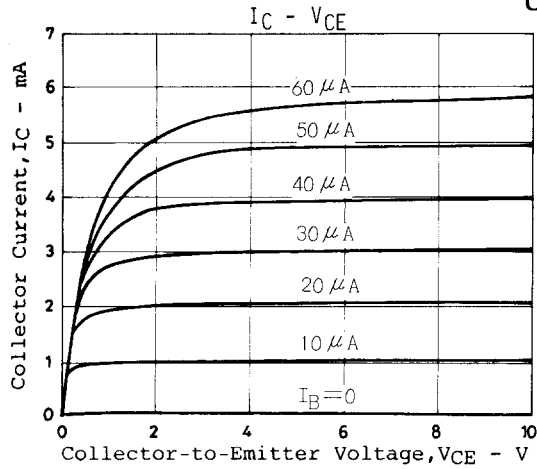
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NF, PG Test Circuit

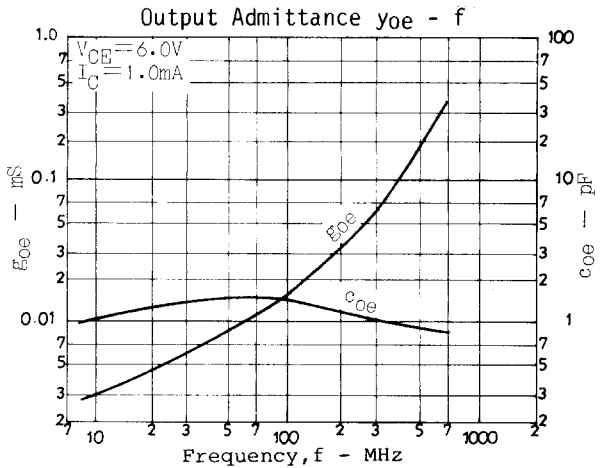
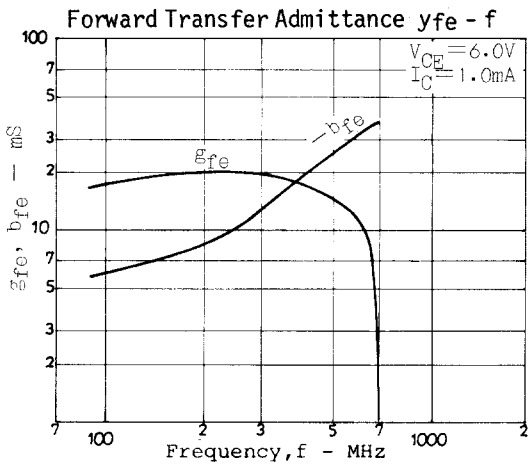
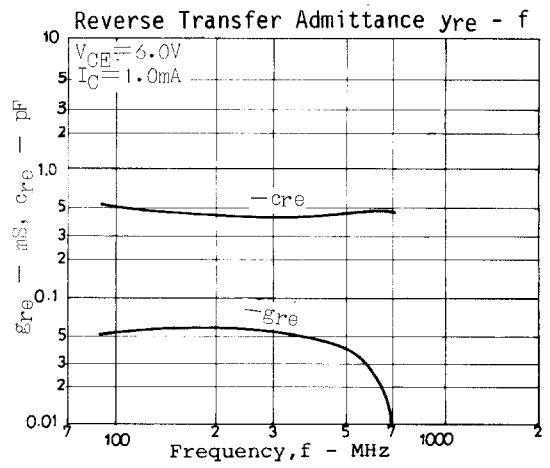
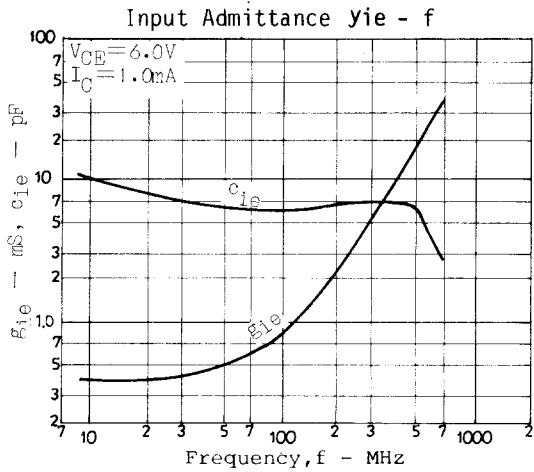
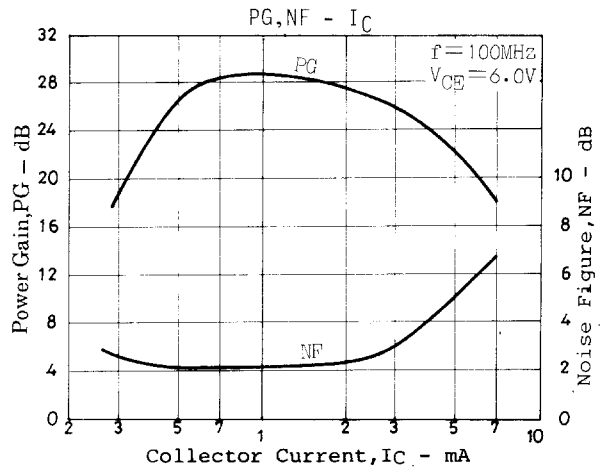
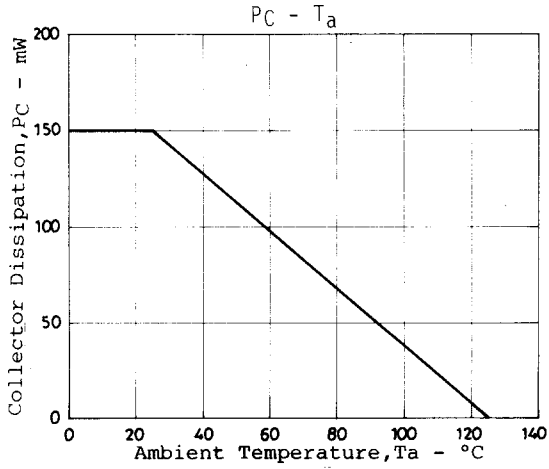
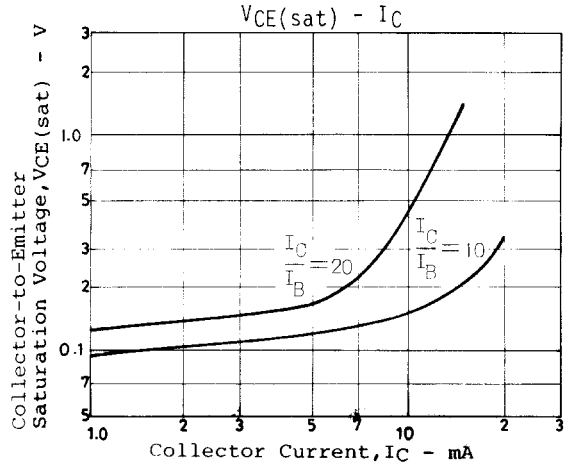
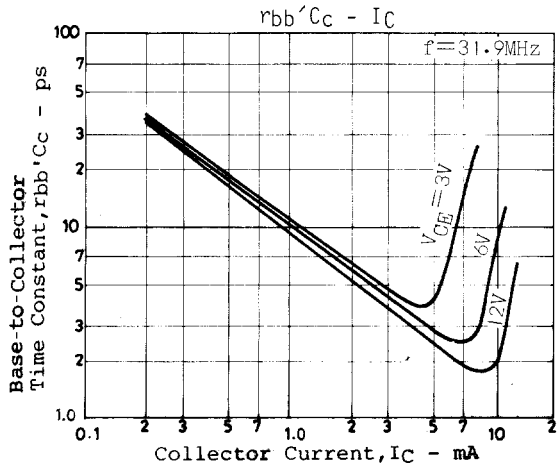


- L1: 1mm ϕ plated wire, 10mm ϕ 5T, pitch 15mm, tapped at 2T from base side.
- L2: 1mm ϕ plated wire, 10mm ϕ 7T, pitch 10mm, tapped at 2T from V_C side.
- L3: 1mm ϕ enameled wire, 10mm ϕ 3T, pitch 10mm.

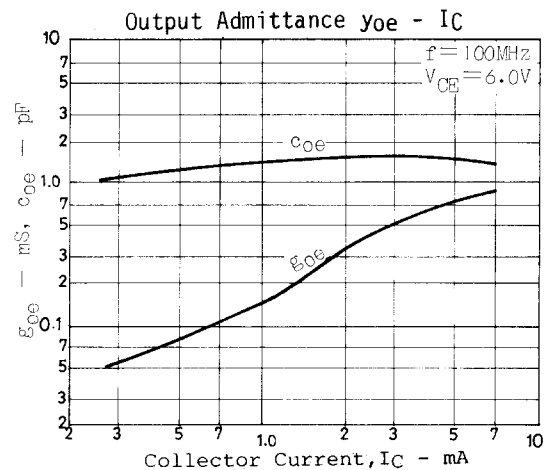
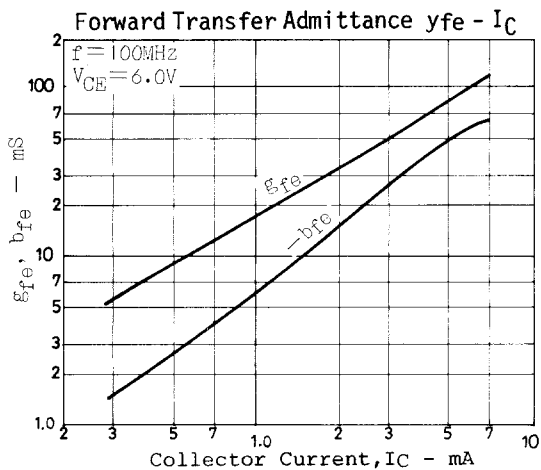
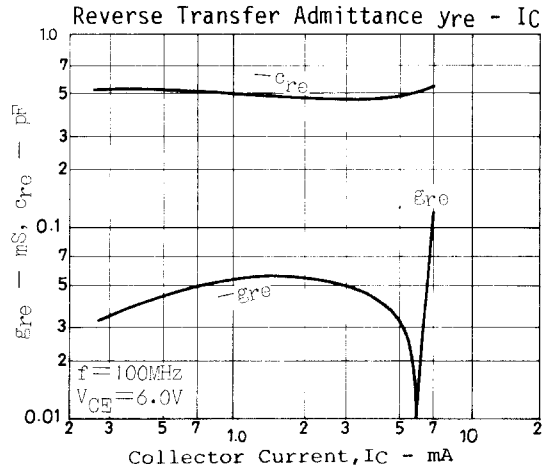
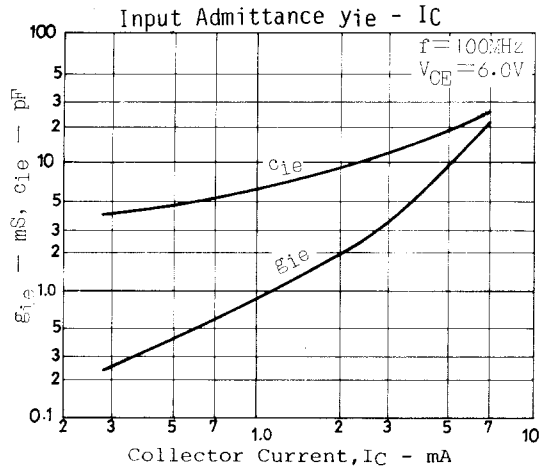
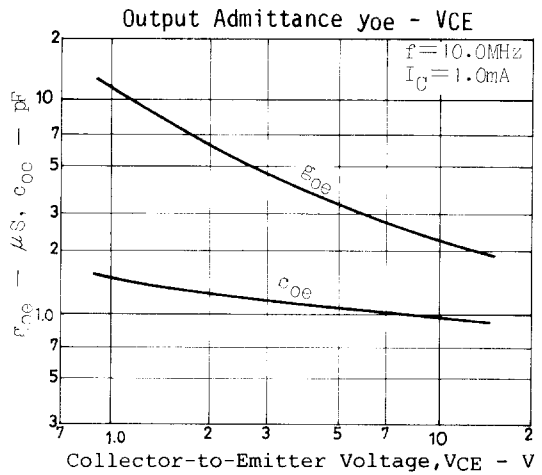
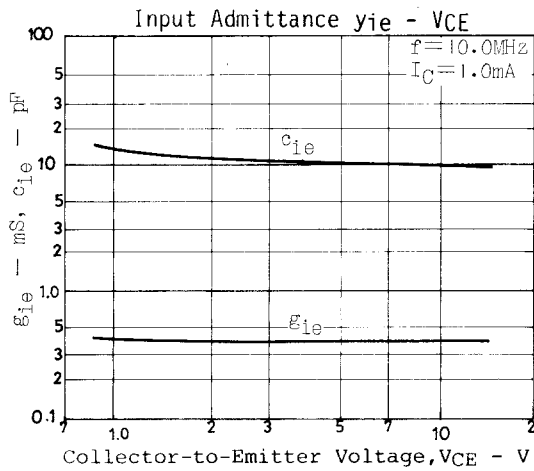
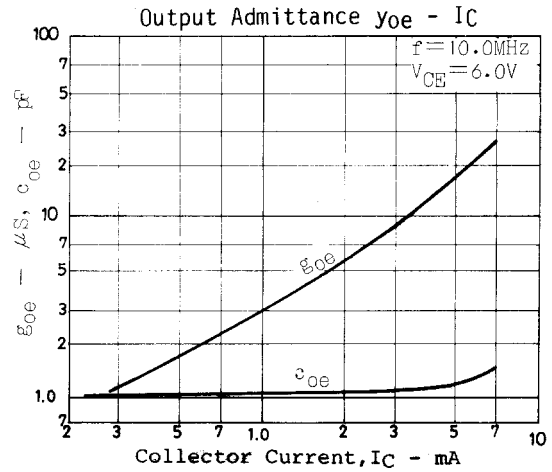
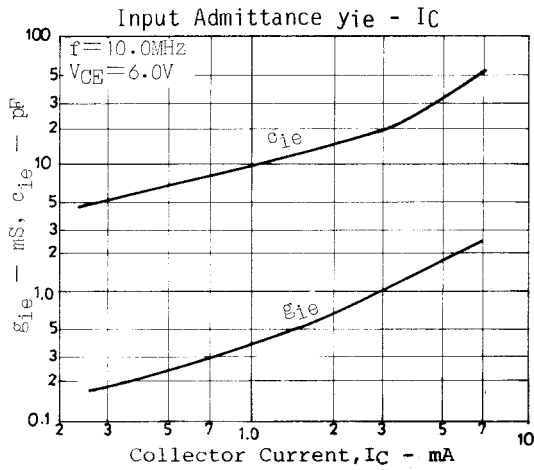
Unit(capacitance : F)

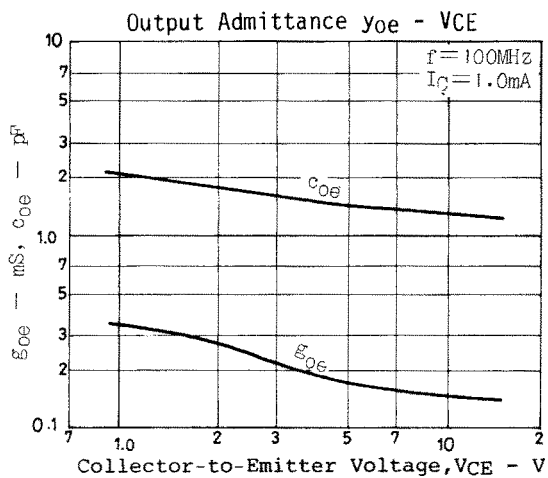
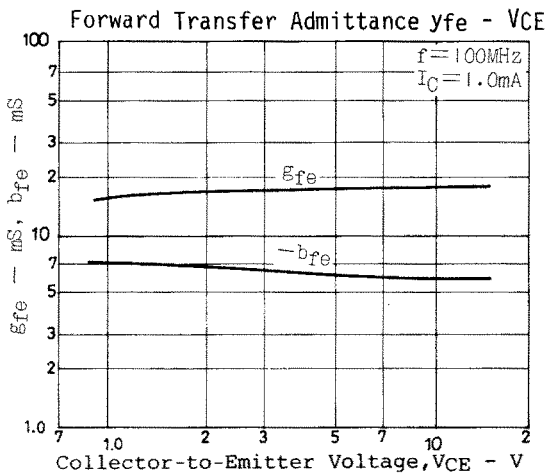
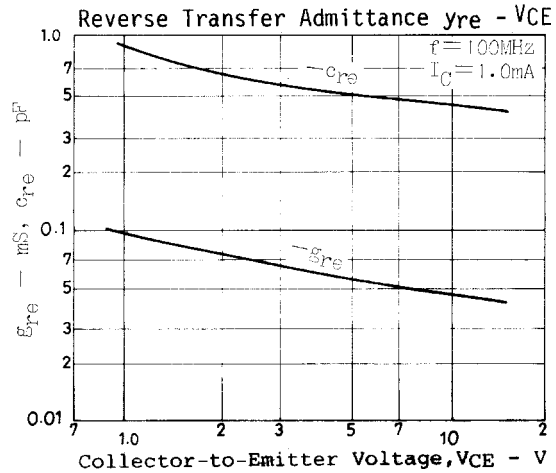
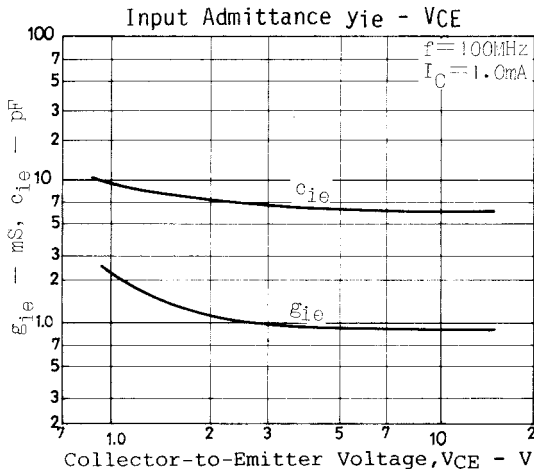


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