

TOSHIBA Transistor Silicon PNP Epitaxial Planar Type

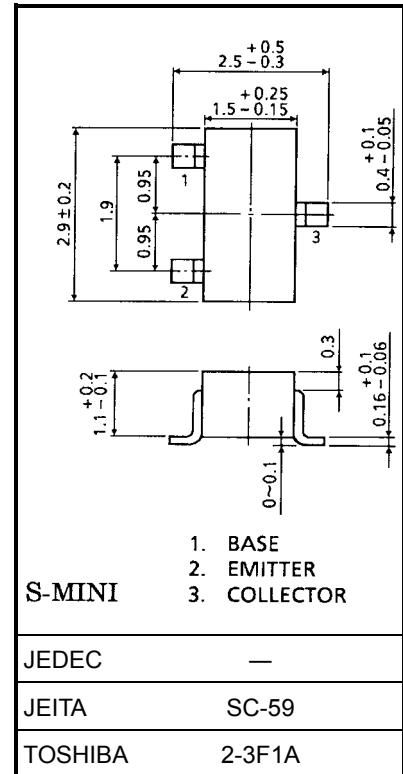
2SA1245

High Frequency Amplifier and Switching Applications
VHF~UHF Band Low Noise Amplifier Applications

Unit: mm

Maximum Ratings (Ta = 25°C)

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|---------|------|
| Collector-base voltage | V_{CB0} | -15 | V |
| Collector-emitter voltage | V_{CEO} | -8 | V |
| Emitter-base voltage | V_{EBO} | -2 | V |
| Collector current | I_C | -30 | mA |
| Base current | I_B | -15 | mA |
| Collector power dissipation | P_C | 150 | mW |
| Junction temperature | T_j | 125 | °C |
| Storage temperature range | T_{stg} | -55~125 | °C |



Weight: 0.012 g (typ.)

Microwave Characteristics (Ta = 25°C)

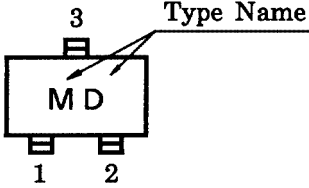
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|----------------------|-------------------|--|-----|------|-----|------|
| Transition frequency | f_T | $V_{CE} = -5 V, I_C = -10 mA$ | — | 4 | — | GHz |
| Insertion gain | $ S_{21e} ^2 (1)$ | $V_{CE} = -5 V, I_C = -10 mA, f = 500 MHz$ | — | 14 | — | dB |
| | $ S_{21e} ^2 (2)$ | $V_{CE} = -5 V, I_C = -10 mA, f = 1 GHz$ | — | 9.5 | — | |
| Noise figure | NF (1) | $V_{CE} = -5 V, I_C = -3 mA, f = 500 MHz$ | — | 2.5 | — | dB |
| | NF (2) | $V_{CE} = -5 V, I_C = -3 mA, f = 1 GHz$ | — | 3.0 | — | |

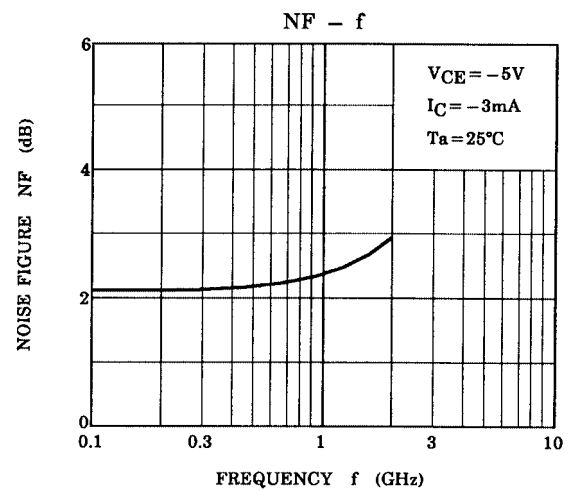
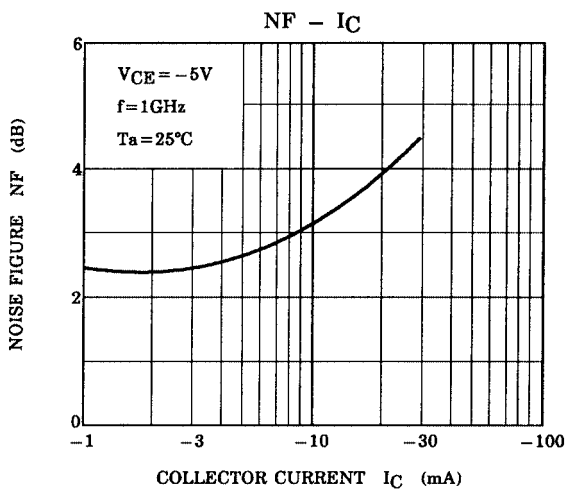
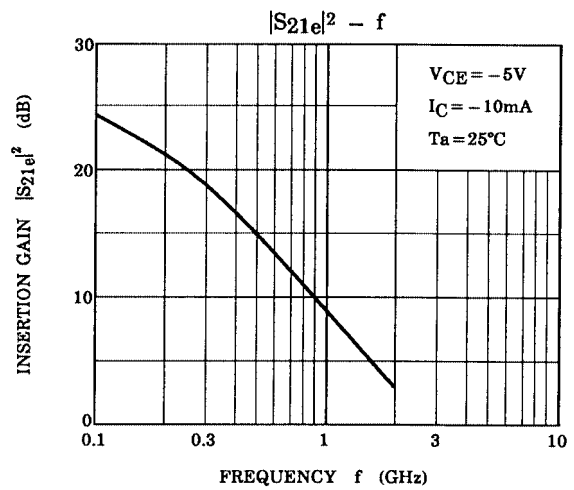
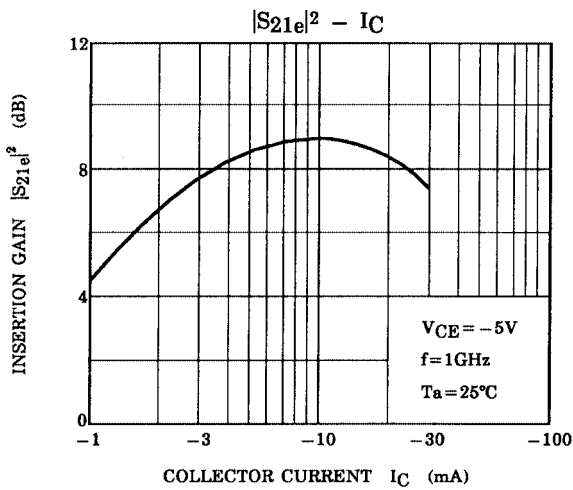
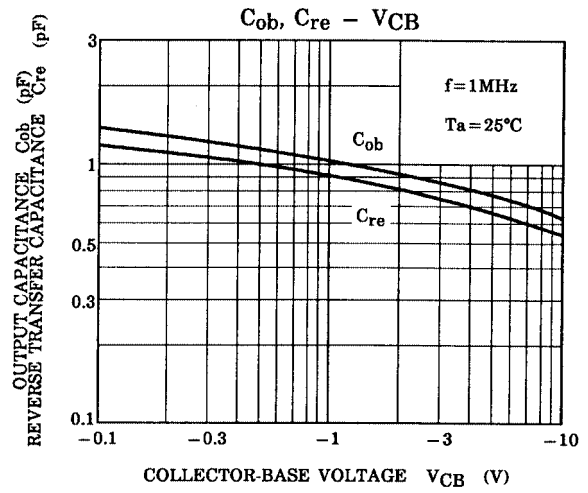
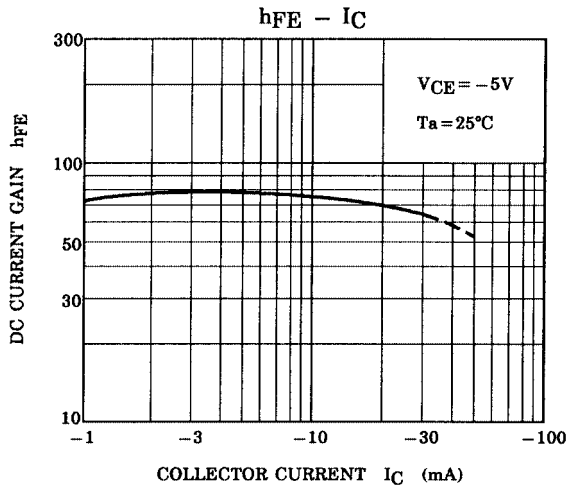
Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|------------------------------|-----------|--|-----|------|------|---------|
| Collector cut-off current | I_{CBO} | $V_{CB} = -5 V, I_E = 0$ | — | — | -0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -1 V, I_C = 0$ | — | — | -0.1 | μA |
| DC current gain | h_{FE} | $V_{CE} = -5 V, I_C = -10 mA$ | 20 | — | — | |
| Output capacitance | C_{ob} | $V_{CB} = -5 V, I_E = 0, f = 1 MHz$ (Note) | — | 0.75 | — | pF |
| Reverse transfer capacitance | C_{re} | | — | 0.60 | — | pF |

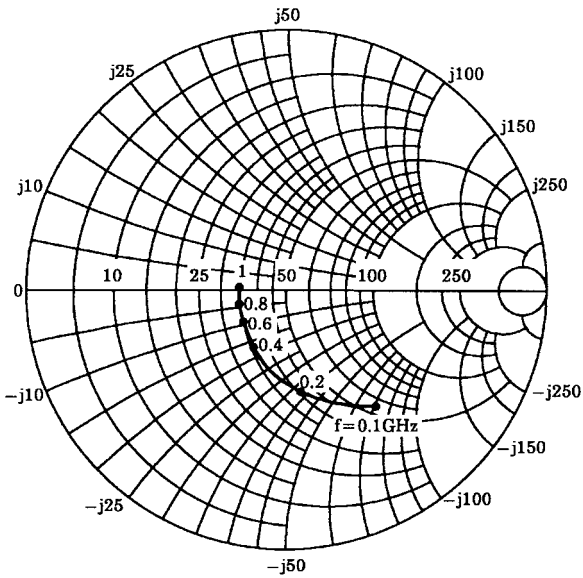
Note: C_{re} is measured by 3 terminal method with capacitance bridge.

Marking

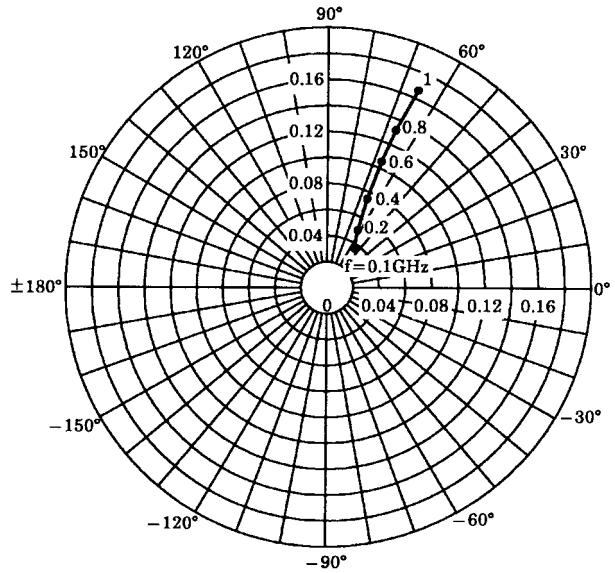




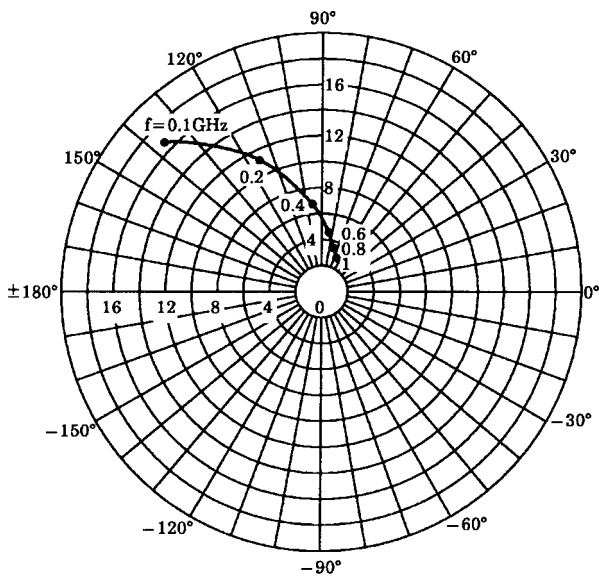
S_{11e}
 V_{CE} = -5V
 I_C = -10mA
 T_a = 25°C
 (UNIT : Ω)



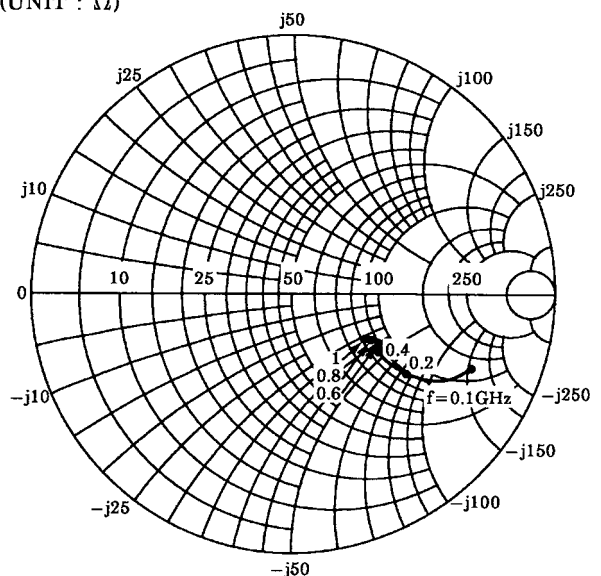
S_{12e}
 V_{CE} = -5V
 I_C = -10mA
 T_a = 25°C



S_{21e}
 V_{CE} = -5V
 I_C = -10mA
 T_a = 25°C



S_{22e}
 V_{CE} = -5V
 I_C = -10mA
 T_a = 25°C
 (UNIT : Ω)



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