

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2644

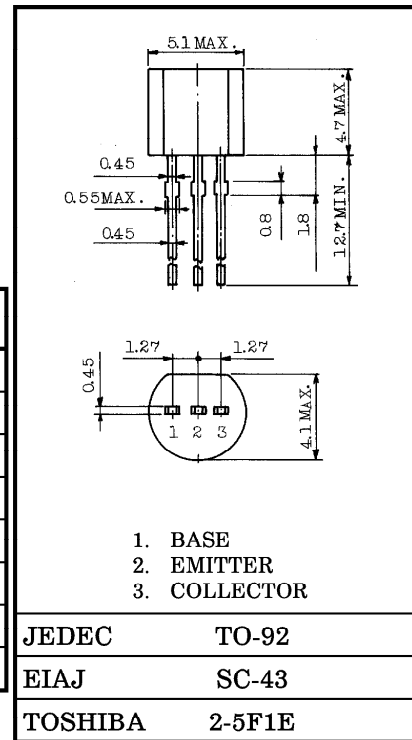
VHF~UHF BAND WIDEBAND AMPLIFIER APPLICATIONS.

Unit in mm

- High Gain
- Low IMD
- $f_T = 4\text{GHz}$ (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|-----------|---------|------|
| Collector-Base Voltage | V_{CB0} | 25 | V |
| Collector-Emitter Voltage | V_{CEO} | 12 | V |
| Emitter-Base Voltage | V_{EB0} | 3.0 | V |
| Collector Current | I_C | 120 | mA |
| Emitter Current | I_B | 40 | mA |
| Collector Power Dissipation | P_C | 0.5 | W |
| Junction Temperature | T_j | 125 | °C |
| Storage Temperature Range | T_{stg} | -55~125 | °C |



Weight : 0.21g

MICROWAVE CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------|------------------|--|------|------|------|------|
| Transition Frequency | f_T | $V_{CE} = 10V, I_C = 30mA$ | — | 4.0 | — | GHz |
| Insertion Gain | $ S_{21e} ^2(1)$ | $V_{CE} = 10V, I_C = 30mA, f = 0.5GHz$ | — | 14.0 | — | dB |
| | $ S_{21e} ^2(2)$ | $V_{CE} = 10V, I_C = 30mA, f = 1GHz$ | — | 8.5 | — | dB |
| Noise Figure | NF(1) | $V_{CE} = 10V, I_C = 10mA, f = 0.5GHz$ | — | 2.3 | — | dB |
| | NF(2) | $V_{CE} = 10V, I_C = 10mA, f = 1GHz$ | — | 3.0 | — | dB |

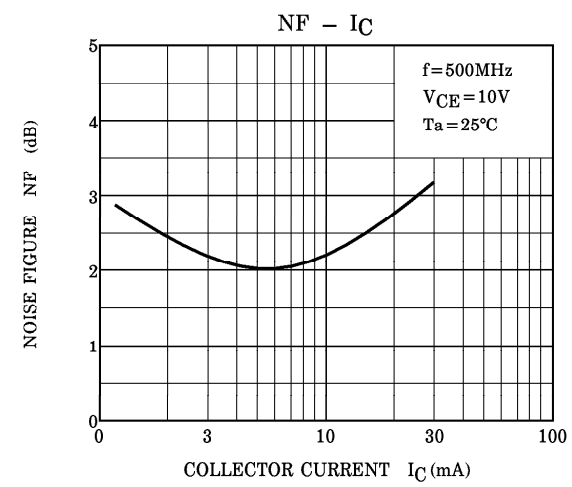
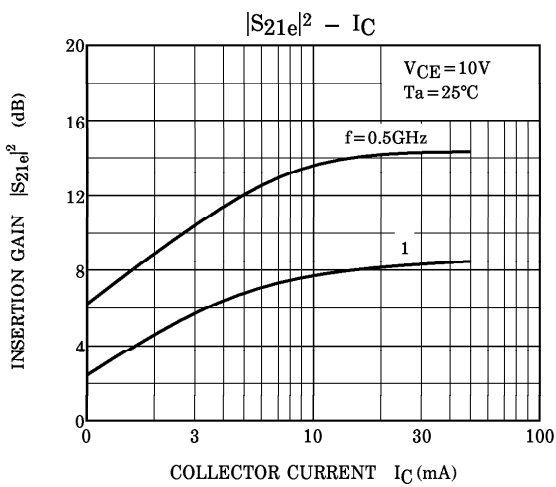
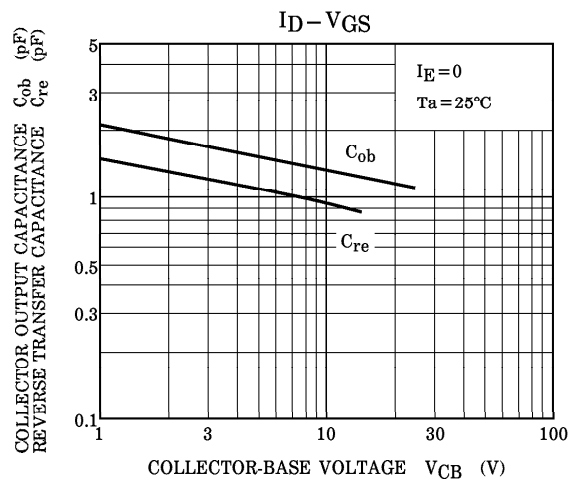
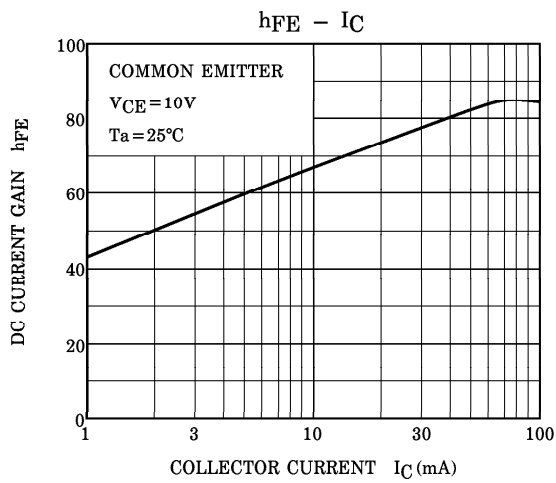
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITON | MIN. | TYP. | MAX. | UNIT |
|------------------------------|-----------|--|------|------|------|---------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 10V, I_E = 0$ | — | — | 1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 1.0V, I_C = 0$ | — | — | 10 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = 5V, I_C = 50mA$ | 20 | 50 | — | — |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0, f = 1MHz$ (Note) | — | 1.6 | — | pF |
| Reverse Transfer Capacitance | C_{re} | | — | 1.1 | — | pF |

Note : C_{re} is measured by 3 terminal method with Capacitance Bridge.

961001EAA2

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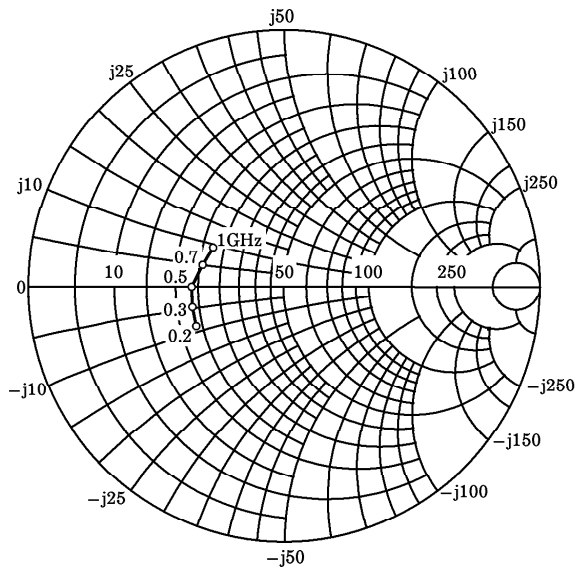
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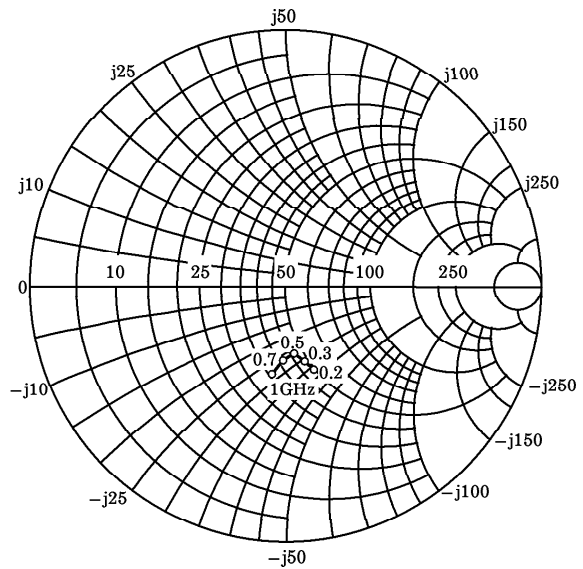
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COMMON EMITTER SMALL S-PARAMETERS OF 2SC2644

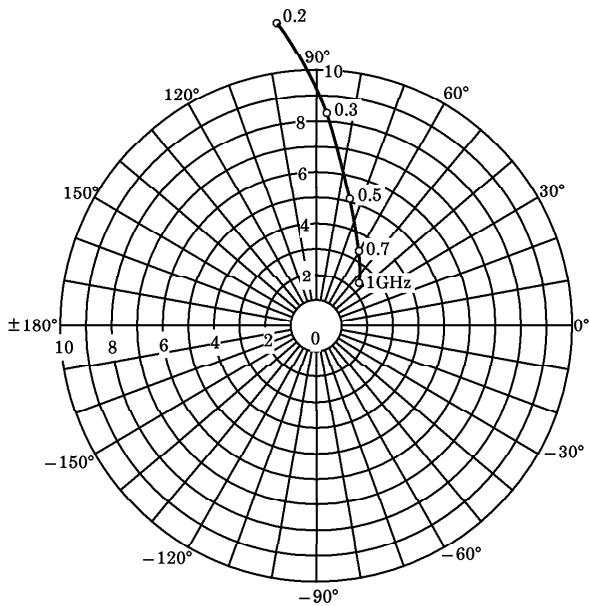
$V_{CE} = 10V, I_C = 30mA$



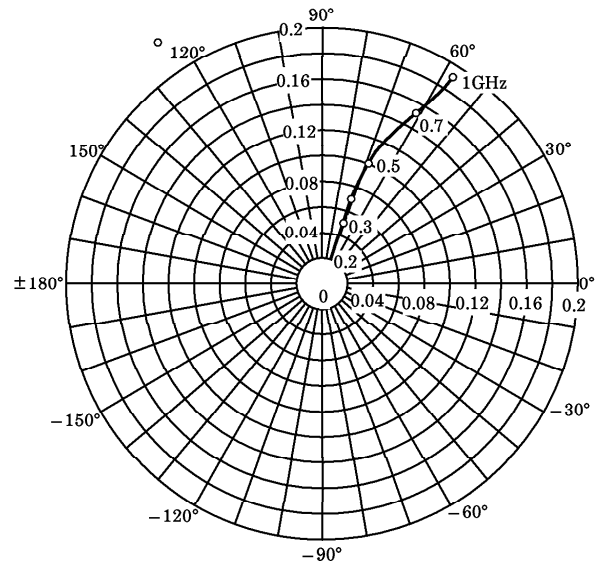
S_{11e} (UNIT : Ω)



S_{22e} (UNIT : Ω)



S_{21e}



S_{12e}