

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

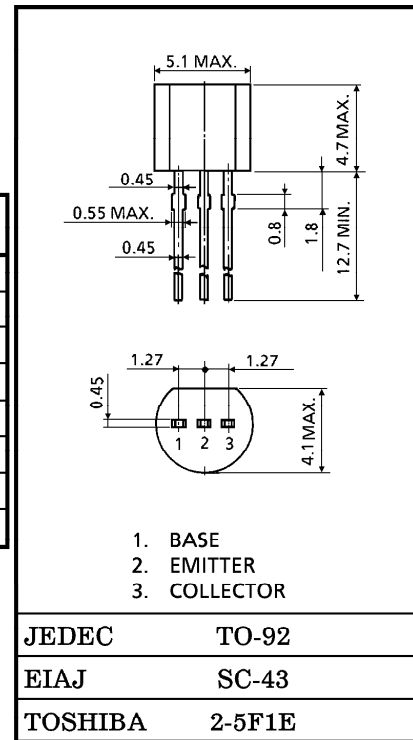
2SC2498

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATION

Unit in mm

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---------|------|
| Collector-Base Voltage | V _{CB0} | 30 | V |
| Collector-Emitter Voltage | V _{CEO} | 20 | V |
| Emitter-Base Voltage | V _{EB0} | 3 | V |
| Collector Current | I _C | 50 | mA |
| Base Current | I _B | 25 | mA |
| Collector Power Dissipation | P _C | 300 | mW |
| Junction Temperature | T _j | 125 | °C |
| Storage Temperature Range | T _{stg} | -55~125 | °C |



MICROWAVE CHARACTERISTICS (Ta = 25°C)

Weight : 0.21g

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------|-------------------------------------|--|------|------|------|------|
| Transition Frequency | f _T | V _{CE} = 10V, I _C = 10mA | — | 3.5 | — | GHz |
| Insertion Gain | S _{21e} ² (1) | V _{CE} = 10V, I _C = 10mA, f = 500MHz | — | 14.5 | — | dB |
| | S _{21e} ² (2) | V _{CE} = 10V, I _C = 10mA, f = 1GHz | — | 9 | — | |
| Noise Figure | NF (1) | V _{CE} = 10V, I _C = 5mA, f = 500MHz | — | 2.5 | — | dB |
| | NF (2) | V _{CE} = 10V, I _C = 5mA, f = 1GHz | — | 4 | — | |

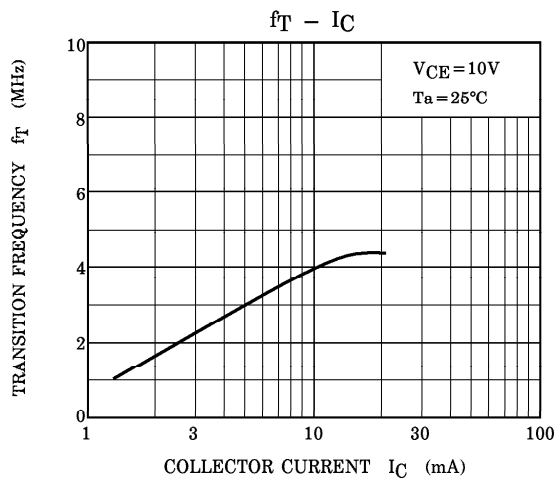
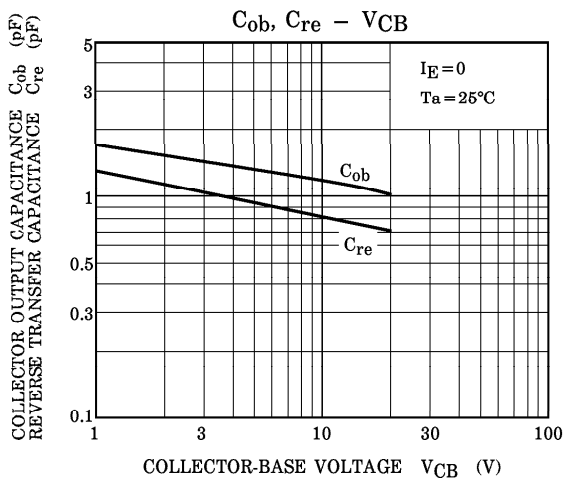
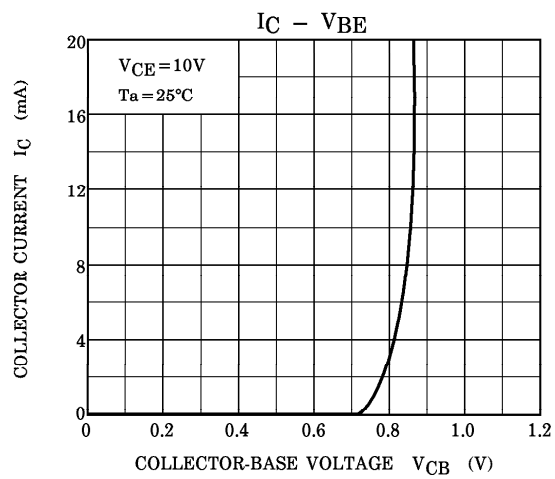
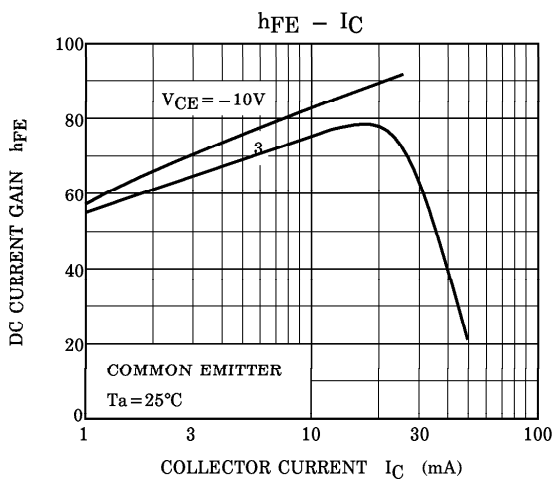
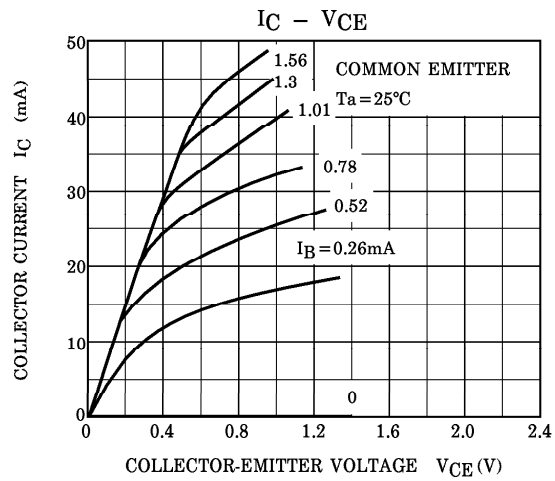
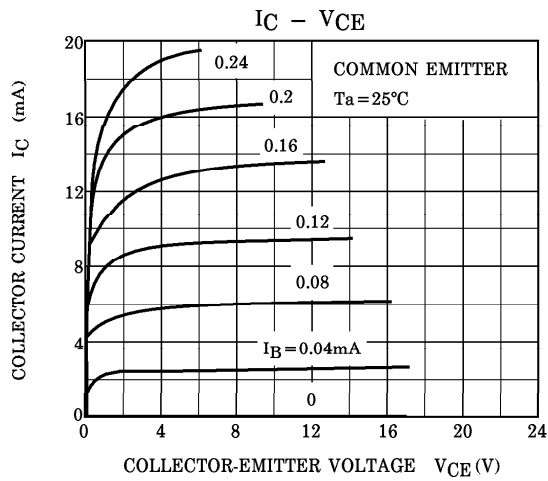
MICROWAVE CHARACTERISTICS (Ta = 25°C)

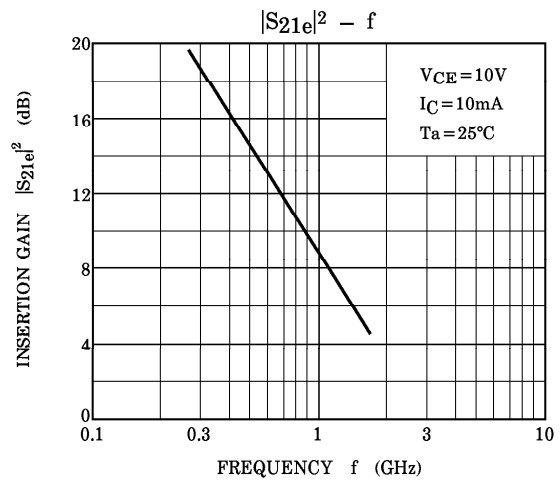
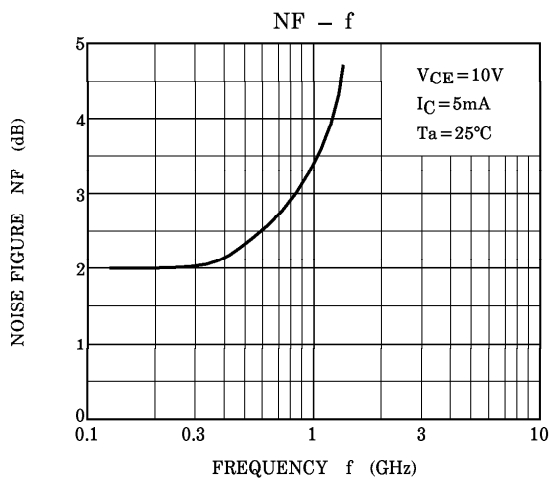
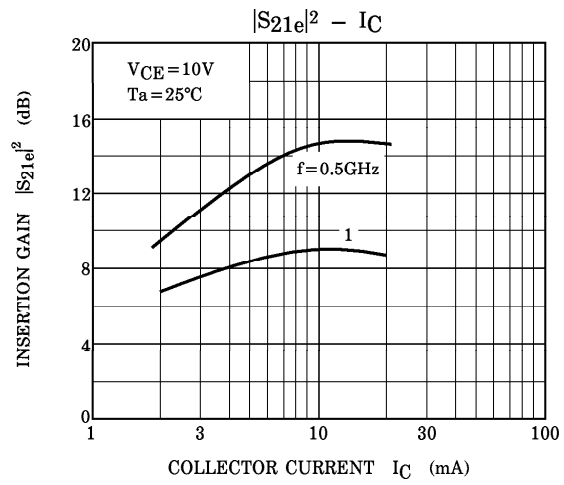
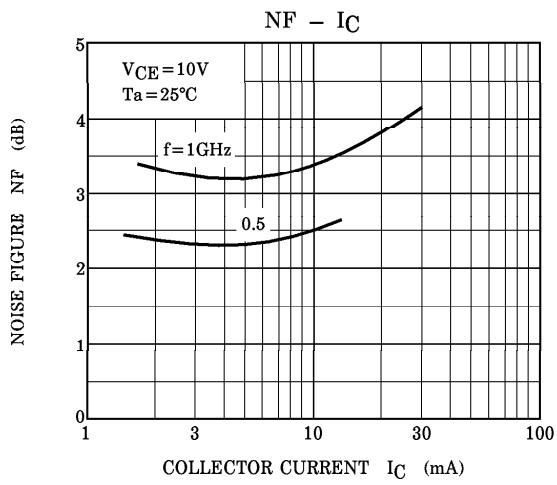
| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|------------------------------|------------------|---|------|------|------|------|
| Collector Cut-off Current | I _{CBO} | V _{CB} = 10V, I _E = 0 | — | — | 1 | μA |
| Emitter Cut-off Current | I _{EBO} | V _{EB} = 1V, I _C = 0 | — | — | 1 | μA |
| DC Current Gain | h _{FE} | V _{CE} = 10V, I _C = 10mA | 30 | 80 | 300 | — |
| Collector Output Capacitance | C _{ob} | V _{CB} = 10V, I _E = 0, f = 1MHz (Note) | — | 1.15 | — | pF |
| Reverse Transfer Capacitance | C _{re} | | — | 0.75 | — | |

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

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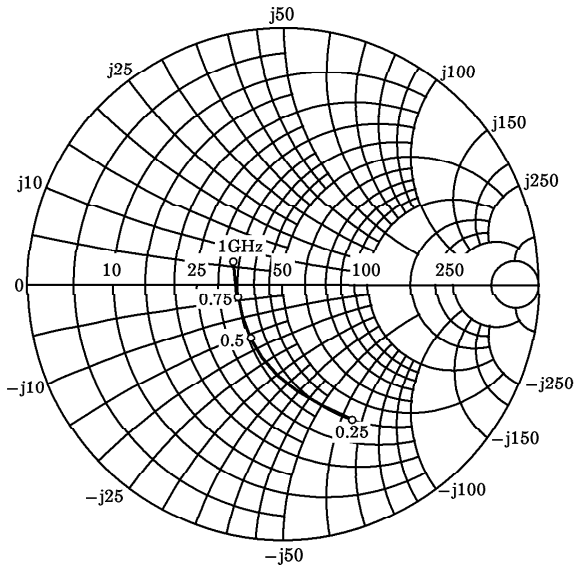
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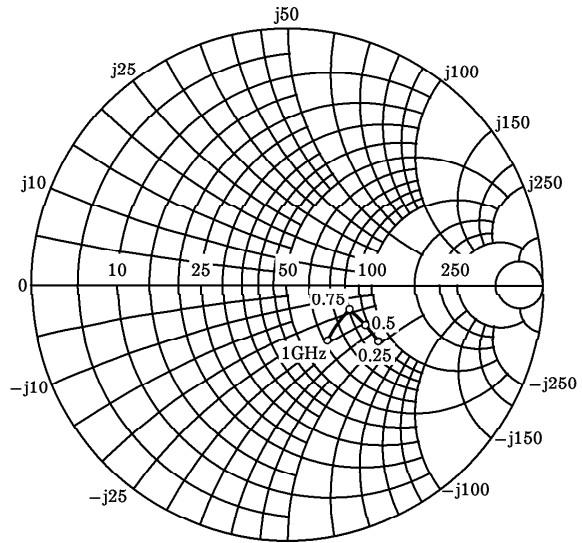


COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC2498.

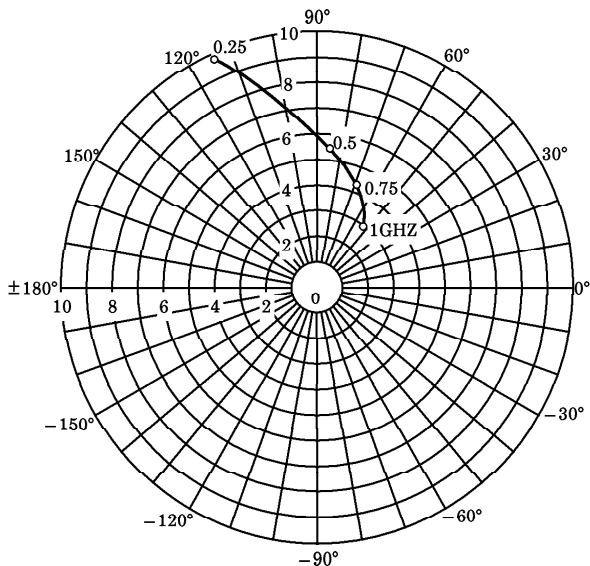
$V_{CE} = 10V, I_C = 10mA$



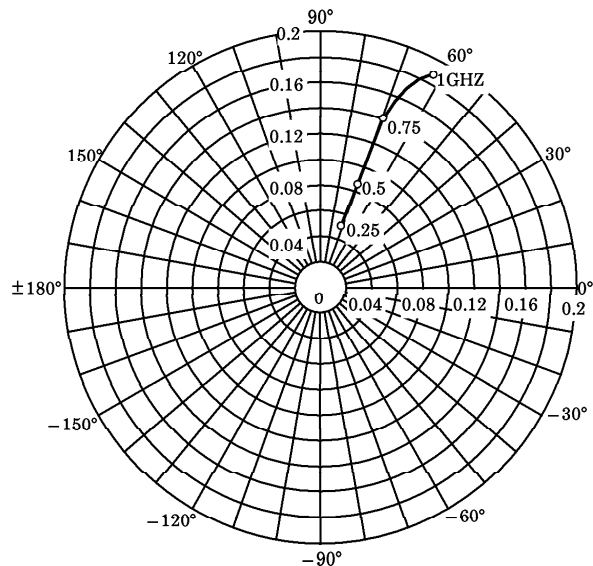
S_{11e} (UNIT : Ω)



S_{22e} (UNIT : Ω)



S_{21e}



S_{12e}