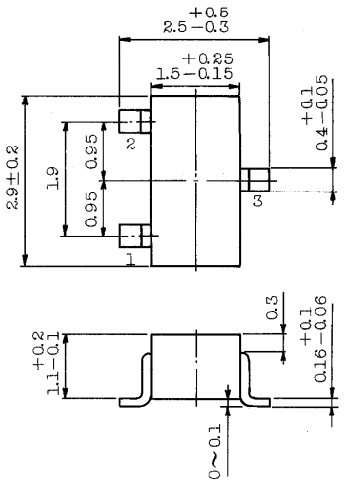
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL PLANAR TYPE

# 2SA1245

○ HIGH FREQUENCY AMPLIFIER AND SWITCHING APPLICATIONS.

○ VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS.

Unit in mm




1. EMITTER
2. BASE
3. COLLECTOR

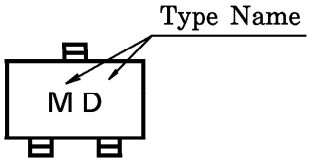
| | |
|---|---|
| JEDEC | — |
| EIAJ | SC-59 |
| TOSHIBA | 2-3F1A |

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | −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 |

Marking




MICROWAVE CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Transition Frequency | $f_T$ | $V_{CE}$ = −5V, $I_C$ = −10mA | — | 4 | — | GHz |
| Insertion Gain | $\|S_{21e}\|^2$ (1) | $V_{CE}$ = −5V, $I_C$ = −10mA, f = 500MHz | — | 14 | — | dB |
| | $\|S_{21e}\|^2$ (2) | $V_{CE}$ = −5V, $I_C$ = −10mA, f = 1GHz | — | 9.5 | — | dB |
| Noise Figure | NF (1) | $V_{CE}$ = −5V, $I_C$ = −3mA, f = 500MHz | — | 2.5 | — | dB |
| | NF (2) | $V_{CE}$ = −5V, $I_C$ = −3mA, f = 1GHz | — | 3.0 | — | dB |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$ = −5V, $I_E$ = 0 | — | — | −0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$ = −1V, $I_C$ = 0 | — | — | −0.1 | μA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$ = −5V, $I_C$ = −10mA | 20 | — | — | — |
| Output Capacitance | $C_{ob}$ | $V_{CB}$ = −5V, $I_E$ = 0, f = 1MHz (Note) | — | 0.75 | — | pF |
| Reserve Transfer Capacitance | $C_{re}$ | | — | 0.60 | — | pF |

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

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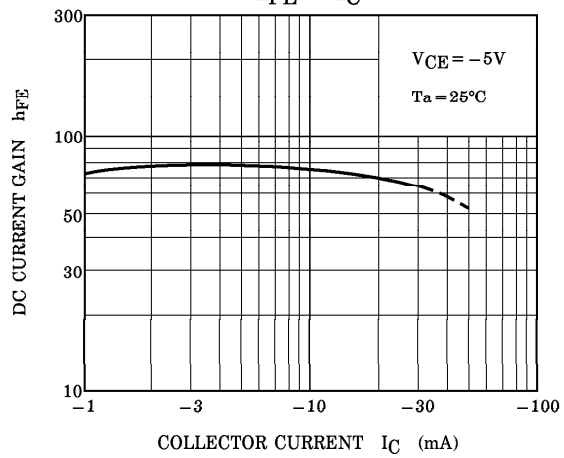
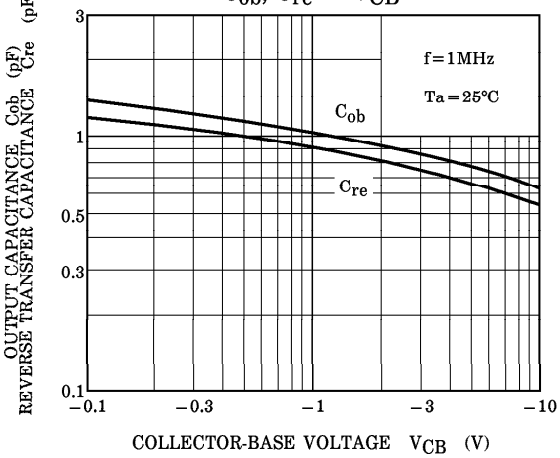
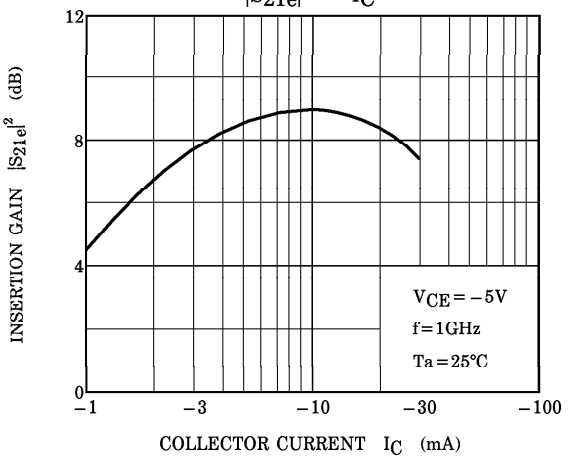
$h_{FE}$ – $I_C$



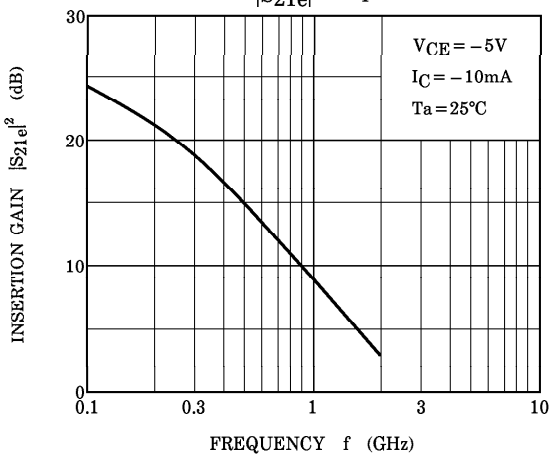

$C_{ob}$, $C_{re}$ – $V_{CB}$



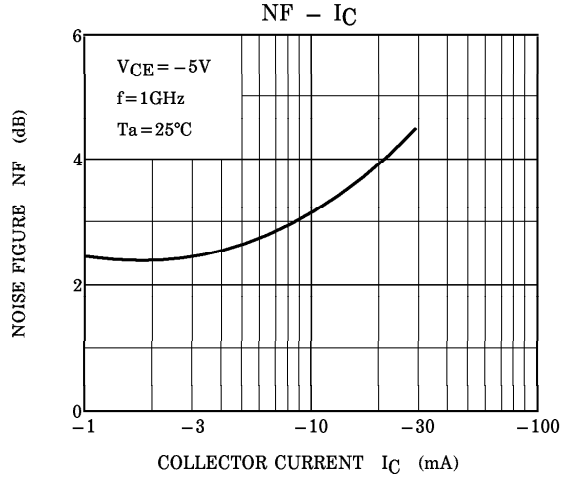

$|S_{21e}|^2$ – $I_C$



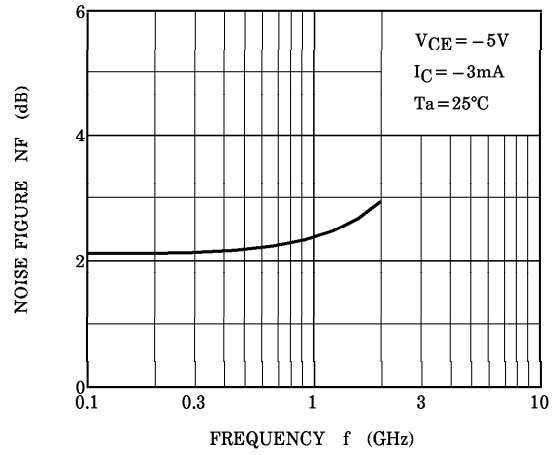

$|S_{21e}|^2$ – f




NF – $I_C$

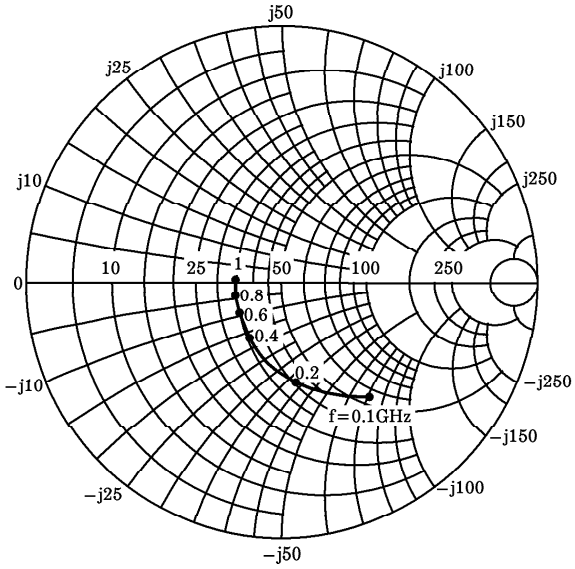



NF – f

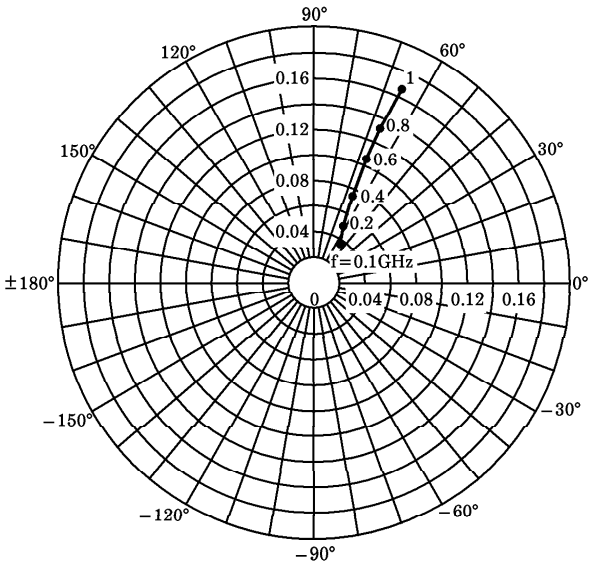



961001EAA2'

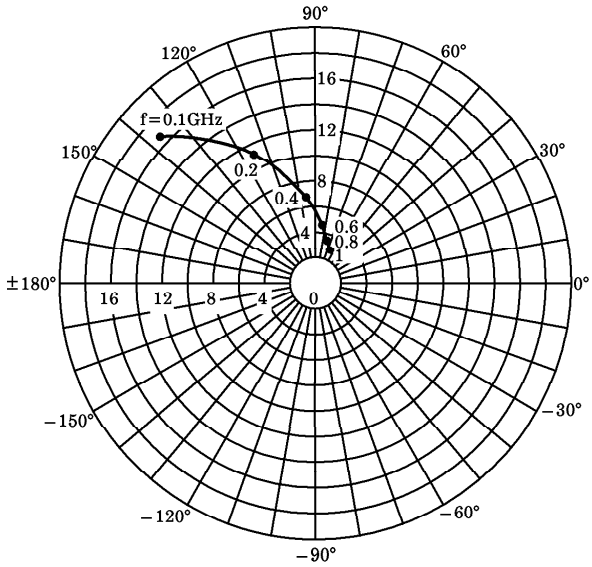
$S_{11e}$
$V_{CE} = -5V$
$I_C = -10mA$
$Ta = 25°C$
(UNIT : Ω)




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




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




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