

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC5464

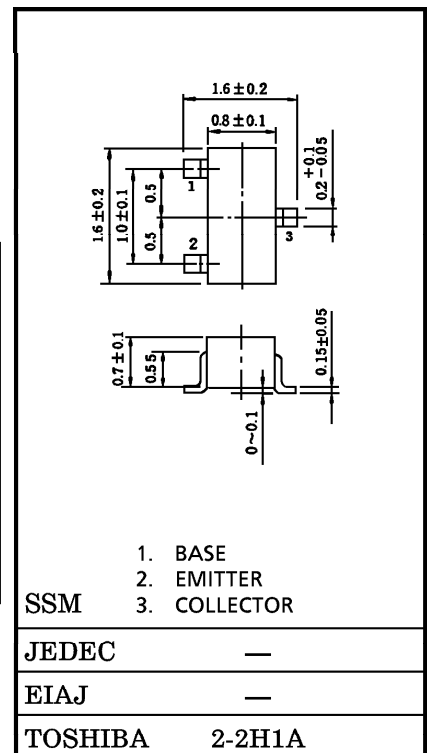
VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

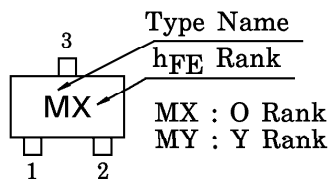
- Low Noise Figure, High Gain.
- $NF = 1.1\text{dB}$, $|S_{21e}|^2 = 12\text{dB}$ ($f = 1\text{GHz}$)

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | 20 | V |
| Collector-Emitter Voltage | V_{CEO} | 12 | V |
| Emitter-Base Voltage | V_{EBO} | 3 | V |
| Collector Current | I_C | 60 | mA |
| Base Current | I_B | 30 | mA |
| Collector Power Dissipation | P_C | 100 | mW |
| Junction Temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55~125 | $^\circ\text{C}$ |



MARKING



MICROWAVE CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------|-------------------|--|------|------|------|------|
| Transition Frequency | f_T | $V_{CE} = 8\text{V}$, $I_C = 15\text{mA}$ | 5 | 7 | — | GHz |
| Insertion Gain | $ S_{21e} ^2 (1)$ | $V_{CE} = 8\text{V}$, $I_C = 15\text{mA}$, $f = 500\text{MHz}$ | — | 17.5 | — | dB |
| | $ S_{21e} ^2 (2)$ | $V_{CE} = 8\text{V}$, $I_C = 15\text{mA}$, $f = 1\text{GHz}$ | 8 | 12 | — | |
| Noise Figure | NF (1) | $V_{CE} = 8\text{V}$, $I_C = 5\text{mA}$, $f = 500\text{MHz}$ | — | 1 | — | dB |
| | NF (2) | $V_{CE} = 8\text{V}$, $I_C = 5\text{mA}$, $f = 1\text{GHz}$ | — | 1.1 | 2 | |

ELECTRICAL 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} (Note 1) | $V_{CE} = 8V, I_C = 15mA$ | 80 | — | 240 | — |
| Output Capacitance | C_{ob} | $V_{CB} = 8V, I_E = 0, f = 1MHz$ (Note 2) | — | 0.8 | — | pF |
| Reverse Transfer Capacitance | C_{re} | | — | 0.55 | — | pF |

(Note 1) : h_{FE} Classification O : 80~160, Y : 160~240

(Note 2) : C_{re} is measured by 3 terminal method with capacitance bridge.

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