

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

MT4S04AU

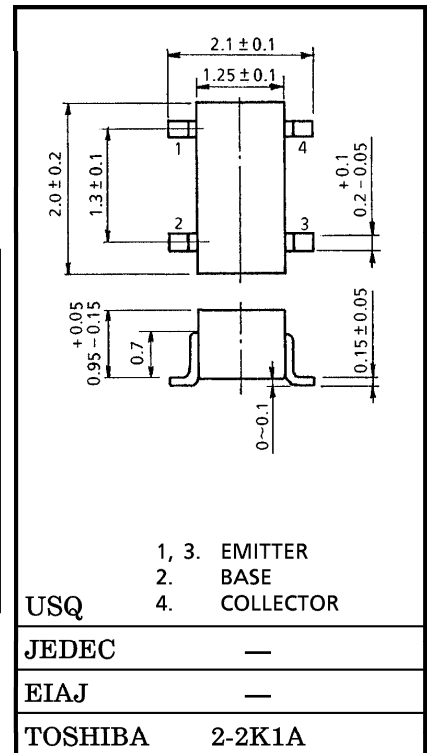
VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise : Figure : NF = 1.2 dB
- High Gain : Gain = 13.5 dB (f = 1 GHz)

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---------|------|
| Collector-Base Voltage | V _{CB0} | 10 | V |
| Collector-Emitter Voltage | V _{CEO} | 5 | V |
| Emitter-Base Voltage | V _{EBO} | 2 | V |
| Base Current | I _C | 40 | mA |
| Collector Current | I _B | 10 | mA |
| Collector Power Dissipation | P _C | 100 | mW |
| Junction Temperature | T _j | 125 | °C |
| Storage Temperature Range | T _{stg} | -55~125 | °C |



USQ

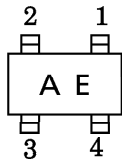
JEDEC

EIAJ

TOSHIBA 2-2K1A

Weight : 0.006 g

MARKING



MICROWAVE CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------|-------------------------------------|--|------|------|------|------|
| Transition Frequency | f _T (1) | V _{CE} = 1 V, I _C = 5 mA | 2 | 4.5 | — | GHz |
| | f _T (2) | V _{CE} = 3 V, I _C = 7 mA | 5 | 7 | — | |
| Insertion Gain | S _{21e} ² (1) | V _{CE} = 1 V, I _C = 5 mA, f = 1 GHz | 8 | 10 | — | dB |
| | S _{21e} ² (2) | V _{CE} = 3 V, I _C = 20 mA, f = 1 GHz | 11.5 | 13.5 | — | |
| Noise Figure | NF (1) | V _{CE} = 1 V, I _C = 5 mA, f = 1 GHz | — | 1.3 | 2.2 | dB |
| | NF (2) | V _{CE} = 3 V, I _C = 7 mA, f = 1 GHz | — | 1.2 | 2 | |

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|------------------------------|-----------|--|------|------|------|---------------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 5\text{ V}, I_E = 0$ | — | — | 0.1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 1\text{ V}, I_C = 0$ | — | — | 1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = 1\text{ V}, I_C = 5\text{ mA}$ | 80 | — | 160 | — |
| Reverse Transfer Capacitance | C_{re} | $V_{CB} = 1\text{ V}, I_E = 0, f = 1\text{ MHz}$ (Note) | — | 0.75 | 1.1 | pF |

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

CAUTION

This device electrostatic sensitivity. Please handle with caution.