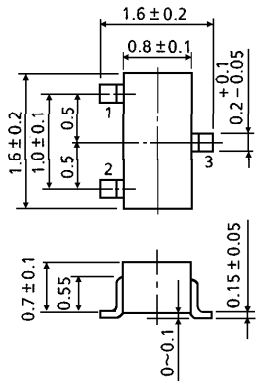
**TENTATIVE** TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# MT3S03AS

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise : Figure : NF = 1.4 dB
- High Gain : Gain = 8 dB (f = 2 GHz)




1. BASE
2. EMITTER
3. COLLECTOR

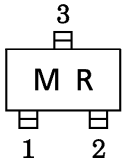
| | |
|---|---|
| SSM | |
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 2-2H1A |

Weight : 0.0024 g

MAXIMUM RATINGS (Ta = 25°C)

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

MARKING




000707EAA1

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- The information contained herein is subject to change without notice.

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 | 5 | 7 | — | GHz |
| | $f_T$ (2) | $V_{CE}$ = 3 V, $I_C$ = 10 mA | 7 | 10 | — | |
| Insertion Gain | $\|S_{21e}\|^2$ (1) | $V_{CE}$ = 1 V, $I_C$ = 5 mA, f = 2 GHz | — | 5.5 | — | dB |
| | $\|S_{21e}\|^2$ (2) | $V_{CE}$ = 3 V, $I_C$ = 20 mA, f = 2 GHz | 6 | 8 | — | |
| Noise Figure | NF (1) | $V_{CE}$ = 1 V, $I_C$ = 5 mA, f = 2 GHz | — | 1.7 | 3 | dB |
| | NF (2) | $V_{CE}$ = 3 V, $I_C$ = 7 mA, f = 2 GHz | — | 1.4 | 2.2 | |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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