

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

**2SC3125**

TV FINAL PICTURE IF AMPLIFIER APPLICATIONS

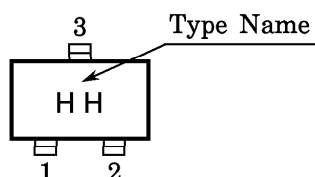
Unit in mm

- Good Lineality of  $f_T$

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

| CHARACTERISTIC              | SYMBOL    | RATING         | UNIT             |
|-----------------------------|-----------|----------------|------------------|
| Collector-Base Voltage      | $V_{CBO}$ | 30             | V                |
| Collector-Emitter Voltage   | $V_{CEO}$ | 25             | V                |
| Emitter-Base Voltage        | $V_{EBO}$ | 4              | V                |
| Collector Current           | $I_C$     | 50             | mA               |
| Base Current                | $I_B$     | 25             | mA               |
| Collector Power Dissipation | $P_C$     | 150            | mW               |
| Junction Temperature        | $T_j$     | 125            | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | $-55 \sim 125$ | $^\circ\text{C}$ |

Marking



|                                                |        |
|------------------------------------------------|--------|
| <p>1. BASE<br/>2. EMITTER<br/>3. COLLECTOR</p> |        |
| JEDEC                                          | —      |
| EIAJ                                           | SC-59  |
| TOSHIBA                                        | 2-3F1A |

Weight : 0.012g

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

| CHARACTERISTIC                      | SYMBOL              | TEST CONDITION                                            | MIN. | TYP. | MAX. | UNIT          |
|-------------------------------------|---------------------|-----------------------------------------------------------|------|------|------|---------------|
| Collector Cut-off Current           | $I_{CBO}$           | $V_{CB} = 30\text{V}, I_E = 0$                            | —    | —    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current             | $I_{EBO}$           | $V_{EB} = 3\text{V}, I_C = 0$                             | —    | —    | 0.1  | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$       | $I_C = 10\text{mA}, I_B = 0$                              | 25   | —    | —    | V             |
| DC Current Gain                     | $h_{FE}$            | $V_{CE} = 10\text{V}, I_C = 10\text{mA}$                  | 20   | 70   | 200  | —             |
| Saturation Voltage                  | Collector-Emitter   | $I_C = 15\text{mA}, I_B = 1.5\text{mA}$                   | —    | —    | 0.2  | V             |
|                                     | Base-Emitter        |                                                           | —    | —    | 1.5  |               |
| Collector Output Capacitance        | $C_{ob}$            | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$           | —    | 1.1  | 1.6  | pF            |
| Collector-Base Time Constant        | $C_c \cdot r_{bb'}$ | $V_{CB} = 10\text{V}, I_C = 1\text{mA}, f = 30\text{MHz}$ | —    | —    | 25   | ps            |
| Transition Frequency                | $f_T$               | $V_{CE} = 10\text{V}, I_C = 10\text{mA}$                  | 250  | 600  | —    | MHz           |

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