

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC3121

TV TUNER, UHF OSCILLATOR APPLICATIONS (COMMON BASE)

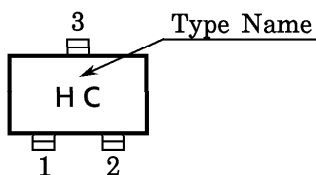
TV TUNER, UHF CONVERTER APPLICATIONS (COMMON BASE)

- High Transition Frequency :  $f_T=1500\text{MHz}$  (Typ.)
- Excellent Linearity

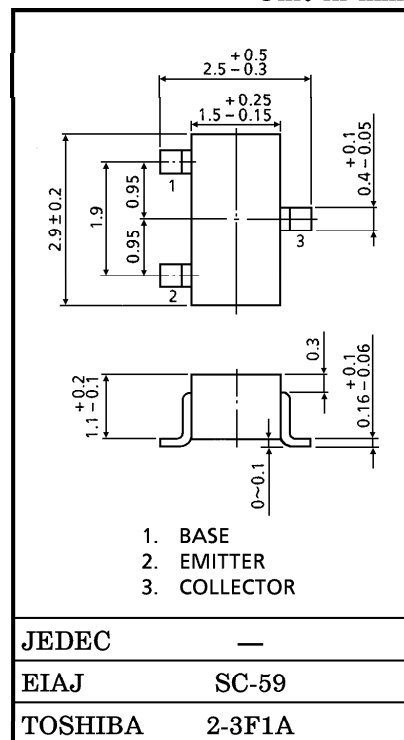
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

| CHARACTERISTIC              | SYMBOL    | RATING  | UNIT             |
|-----------------------------|-----------|---------|------------------|
| Collector-Base Voltage      | $V_{CB0}$ | 30      | V                |
| Collector-Emitter Voltage   | $V_{CEO}$ | 15      | V                |
| Emitter-Base Voltage        | $V_{EBO}$ | 3       | V                |
| Collector Current           | $I_C$     | 25      | mA               |
| Base Current                | $I_B$     | 50      | mA               |
| Collector Power Dissipation | $P_C$     | 150     | mW               |
| Junction Temperature        | $T_j$     | 125     | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | -55~125 | $^\circ\text{C}$ |

Marking



Unit in mm



Weight : 0.012g

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

| CHARACTERISTIC                      | SYMBOL        | TEST CONDITION                                      | MIN. | TYP. | MAX. | UNIT          |
|-------------------------------------|---------------|---|------|------|------|---------------|
| Collector Cut-off Current           | $I_{CBO}$     | $V_{CB}=15\text{V}, I_E=0$                          | —    | —    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current             | $I_{EBO}$     | $V_{EB}=3\text{V}, I_C=0$                           | —    | —    | 1.0  | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                             | 15   | —    | —    | V             |
| DC Current Gain                     | $h_{FE}$      | $V_{CE}=3\text{V}, I_C=8\text{mA}$                  | 60   | 150  | 320  |               |
| Transition Frequency                | $f_T$         | $V_{CE}=10\text{V}, I_C=8\text{mA}$                 | 1100 | 1500 | —    | MHz           |
| Collector Output Capacitance        | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0\text{mA}, f=1\text{MHz}$  | —    | 0.9  | 1.3  | pF            |
| Collector-Base Time Constant        | $C_{c,rbb'}$  | $V_{CB}=10\text{V}, I_C=8\text{mA}, f=30\text{MHz}$ | —    | 7    | 12   | ps            |

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