

**TOSHIBA**

**2SC3112**

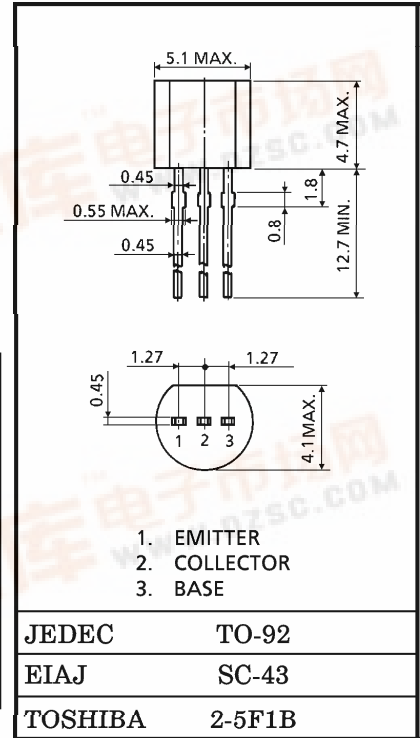
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC3112

FOR AUDIO AMPLIFIER AND SWITCHING APPLICATIONS

Unit in mm

- High DC Current Gain :  $h_{FE} = 600 \sim 3600$
- High Breakdown Voltage :  $V_{CEO} = 50V$
- High Collector Current :  $I_C = 150mA$  (Max.)



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

| CHARACTERISTIC              | SYMBOL    | RATING  | UNIT       |
|-----------------------------|-----------|---------|------------|
| Collector-Base Voltage      | $V_{CBO}$ | 50      | V          |
| Collector-Emitter Voltage   | $V_{CEO}$ | 50      | V          |
| Emitter-Base Voltage        | $V_{EBO}$ | 5       | V          |
| Collector Current           | $I_C$     | 150     | mA         |
| Base Current                | $I_B$     | 30      | mA         |
| Collector Power Dissipation | $P_C$     | 400     | mW         |
| Junction Temperature        | $T_j$     | 125     | $^\circ C$ |
| Storage Temperature Range   | $T_{stg}$ | -55~125 | $^\circ C$ |

Weight : 0.21g

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

| CHARACTERISTIC                       | SYMBOL          | TEST CONDITION   | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|-----------------|--|------|------|------|---------|
| Collector Cut-off Current            | $I_{CBO}$       | $V_{CB} = 50V, I_E = 0$                                | —    | —    | 0.1  | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$       | $V_{EB} = 5V, I_C = 0$                                 | —    | —    | 0.1  | $\mu A$ |
| DC Current Gain                      | $h_{FE}$ (Note) | $V_{CE} = 6V, I_C = 2mA$                               | 600  | —    | 3600 |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$   | $I_C = 100mA, I_B = 10mA$                              | —    | 0.12 | 0.25 | V       |
| Transition Frequency                 | $f_T$           | $V_{CE} = 10V, I_C = 10mA$                             | 100  | 250  | —    | MHz     |
| Collector Output Capacitance         | $C_{ob}$        | $V_{CB} = 10V, I_E = 0, f = 1MHz$                      | —    | 3.5  | —    | pF      |
| Noise Figure                         | NF (1)          | $V_{CE} = 6V, I_C = 0.1mA, f = 100Hz, R_G = 10k\Omega$ | —    | 0.5  | —    | dB      |
|                                      | NF (2)          | $V_{CE} = 6V, I_C = 0.1mA, f = 1kHz, R_G = 10k\Omega$  | —    | 0.3  | —    | dB      |

(Note) :  $h_{FE}$  Classification A : 600~1800, B : 1200~3600

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