

TOSHIBA TRANSISTOR SILOCON NPN EPITAXIAL TYPE (PCT PROCESS)

**2SC2458<sup>Ⓐ</sup>**

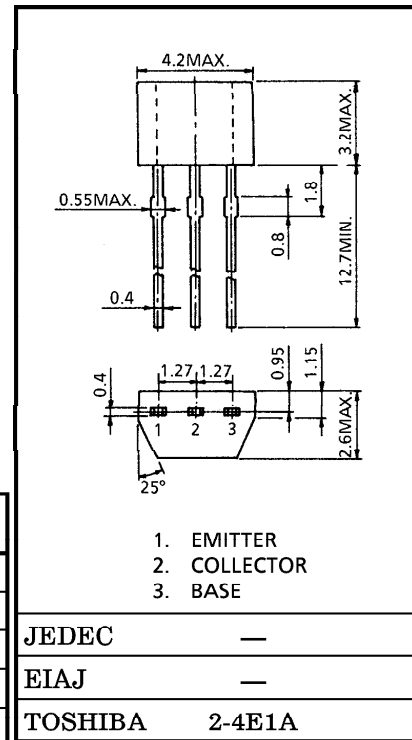
AUDIO AMPLIFIER APPLICATIONS

LOW NOISE AUDIO AMPLIFIER APPLICATIONS

- High Current Capability :  $I_C = 150\text{mA}$  (Max.)
- High DC Current Gain :  $h_{FE} = 70 \sim 700$
- Excellent  $h_{FE}$  Linearity  
:  $h_{FE}(I_C = 0.1\text{mA}) / h_{FE}(I_C = 2\text{mA}) = 0.95$  (Typ.)
- Low Noise :  $NF(2) = 0.2\text{dB}$  (Typ.),  $3\text{dB}$  (Max.)
- Complementary to 2SA1048<sup>Ⓐ</sup>.
- Small Package.

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

| 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                | $I_B$     | 50             | mA               |
| Collector Power Dissipation | $P_C$     | 200            | mW               |
| Junction Temperature        | $T_j$     | 125            | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | $-55 \sim 125$ | $^\circ\text{C}$ |



Weight : 0.13g

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

| CHARACTERISTIC                       | SYMBOL          | TEST CONDITION                                                                              | MIN. | TYP. | MAX. | UNIT          |
|--------------------------------------|-----------------|---------------------------------------------------------------------------------------------|------|------|------|---------------|
| Collector Cut-off Current            | $I_{CBO}$       | $V_{CB} = 50\text{V}$ , $I_E = 0$                                                           | —    | —    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$       | $V_{EB} = 5\text{V}$ , $I_C = 0$                                                            | —    | —    | 0.1  | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}$ (Note) | $V_{CE} = 6\text{V}$ , $I_C = 2\text{mA}$                                                   | 70   | —    | 700  |               |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$   | $I_C = 100\text{mA}$ , $I_B = 10\text{mA}$                                                  | —    | 0.1  | 0.25 | V             |
| Transition Frequency                 | $f_T$           | $V_{CE} = 10\text{V}$ , $I_C = 1\text{mA}$                                                  | 80   | —    | —    | MHz           |
| Collector Output Capacitance         | $C_{ob}$        | $V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$                                       | —    | 2.0  | 3.5  | pF            |
| Noise Figure                         | NF (1)          | $V_{CE} = 6\text{V}$ , $I_C = 0.1\text{mA}$ , $f = 100\text{Hz}$ , $R_G = 10\text{k}\Omega$ | —    | 0.5  | 6    | dB            |
|                                      | NF (2)          | $V_{CE} = 6\text{V}$ , $I_C = 0.1\text{mA}$ , $f = 1\text{kHz}$ , $R_G = 10\text{k}\Omega$  | —    | 0.2  | 3    |               |

Note :  $h_{FE}$  Classification    O : 70~140,    Y : 120~240,    GR : 200~400,    BL : 350~700

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