

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD2012

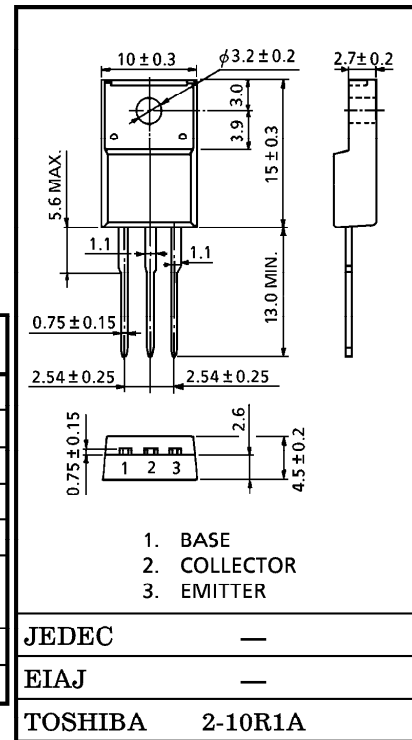
AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS

Unit in mm

- High DC Current Gain : $h_{FE(1)}=100$ (Min.)
- Low Saturation Voltage
: $V_{CE(sat)}=1.0V$ (Max.)
- High Power Dissipation : $P_C=25W$ ($T_c=25^\circ C$)

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

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|--------------------------------|--------------------|-----------|---------|------------|
| Collector-Base Voltage | | V_{CB0} | 60 | V |
| Collector-Emitter Voltage | | V_{CEO} | 60 | V |
| Emitter-Base Voltage | | V_{EBO} | 7 | V |
| Collector Current | | I_C | 3 | A |
| Base Current | | I_B | 0.5 | A |
| Collector Power Dissipation | $T_a = 25^\circ C$ | P_C | 2.0 | W |
| | $T_c = 25^\circ C$ | | 25 | |
| Junction Temperature | | T_j | 150 | $^\circ C$ |
| Storage Temperature Range | | T_{stg} | -55~150 | $^\circ C$ |



Weight : 1.7g (Typ.)

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

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------|-----------------------------------|------|------|------|---------|
| Collector Cut-off Current | I_{CB0} | $V_{CB} = 60V, I_E = 0$ | — | — | 100 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 7V, I_C = 0$ | — | — | 100 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR) CEO}$ | $I_C = 50mA, I_E = 0$ | 60 | — | — | V |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE} = 5V, I_C = 0.5A$ | 100 | — | 320 | |
| | $h_{FE(2)}$ | $V_{CE} = 5V, I_C = 2A$ | 20 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 2A, I_B = 0.2A$ | — | 0.4 | 1.0 | V |
| Base-Emitter Voltage | V_{BE} | $V_{CE} = 5V, I_C = 0.5A$ | — | 0.75 | 1.0 | V |
| Transition Frequency | f_T | $V_{CE} = 5V, I_C = 0.5A$ | — | 3 | — | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | — | 35 | — | pF |

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