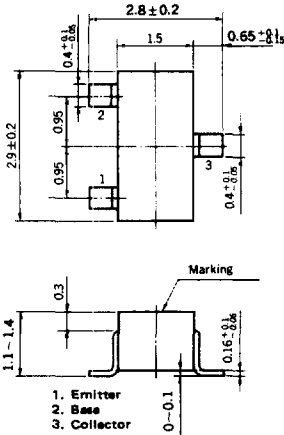


# SILICON TRANSISTOR

## 2SD596

### AUDIO FREQUENCY POWER AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR MINI MOLD

#### PACKAGE DIMENSIONS in millimeters



#### DESCRIPTION

The 2SD596 is designed for use in small type equipments especially recommended for hybrid integrated circuit and other applications.

#### FEATURES

- Micro package.
- High DC current gain.  $h_{FE} : 200$  TYP. ( $V_{CE} = 1.0$  V,  $I_C = 100$  mA)
- Complimentary to NEC 2SB624 PNP Transistor.

#### ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Current ( $T_a = 25^\circ\text{C}$ )

|                              |           |     |    |
|------------------------------|-----------|-----|----|
| Collector to Base Voltage    | $V_{CBO}$ | 30  | V  |
| Collector to Emitter Voltage | $V_{CEO}$ | 25  | V  |
| Emitter to Base Voltage      | $V_{EBO}$ | 5.0 | V  |
| Collector Current (DC)       | $I_C$     | 700 | mA |

Maximum Power Dissipation

|  |       |     |    |
|--|-------|-----|----|
| Total Power Dissipation<br>at $25^\circ\text{C}$ Ambient Temperature | $P_T$ | 200 | mW |
|--|-------|-----|----|

Maximum Temperatures

|                                |           |             |                  |
|--------------------------------|-----------|-------------|------------------|
| Storage Temperature Range      | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature | $T_j$     | 150         | $^\circ\text{C}$ |

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

| CHARACTERISTIC               | SYMBOL        | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                            |
|------------------------------|---------------|------|------|------|------|--|
| Collector Cutoff Current     | $I_{CBO}$     |      |      | 100  | nA   | $V_{CB} = 30$ V, $I_E = 0$                 |
| Emitter Cutoff Current       | $I_{EBO}$     |      |      | 100  | nA   | $V_{EB} = 5.0$ V, $I_C = 0$                |
| DC Current Gain              | $h_{FE1}$     | 110  | 200  | 400  |      | $V_{CE} = 1.0$ V, $I_C = 100$ mA *         |
| DC Current Gain              | $h_{FE2}$     | 50   |      |      |      | $V_{CE} = 1.0$ V, $I_C = 700$ mA *         |
| Base to Emitter Voltage      | $V_{BE}$      | 600  | 640  | 700  | mV   | $V_{CE} = 6.0$ V, $I_C = 10$ mA *          |
| Collector Saturation Voltage | $V_{CE(sat)}$ |      | 0.22 | 0.6  | V    | $I_C = 700$ mA, $I_B = 70$ mA *            |
| Output Capacitance           | $C_{ob}$      |      | 12   |      | pF   | $V_{CB} = 6.0$ V, $I_E = 0$ , $f = 10$ MHz |
| Gain Bandwidth Product       | $f_T$         |      | 170  |      | MHz  | $V_{CE} = 6.0$ V, $I_E = -10$ mA           |

\* Pulsed:  $PW \leq 350$   $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

#### $h_{FE1}$ Classification

| Marking  | DV1        | DV2        | DV3        | DV4        | DV5        |
|----------|------------|------------|------------|------------|------------|
| $h_{FE}$ | 110 to 180 | 135 to 220 | 170 to 270 | 200 to 320 | 250 to 400 |

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

