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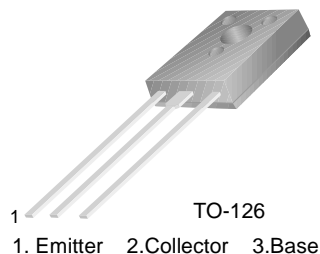
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## KSD794/794A

### Audio Frequency Power Amplifier

- Complement to KSB744/KSB744A



### NPN Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter  | Value      | Units                 |
|-----------|--|------------|-----------------------|
| $V_{CB0}$ | Collector- Base Voltage                          | 70         | V                     |
| $V_{CE0}$ | Collector-Emitter Voltage                        | 45<br>60   | V<br>V                |
|           |  |            | : KSD794<br>: KSD794A |
| $V_{EBO}$ | Emitter- Base Voltage                            | 5          | V                     |
| $I_C$     | Collector Current (DC)                           | 3          | A                     |
| $I_{CP}$  | *Collector Current (Pulse)                       | 5          | A                     |
| $I_B$     | Base Current (DC)                                | 0.6        | A                     |
| $P_C$     | Collector Dissipation ( $T_a=25^\circ\text{C}$ ) | 1          | W                     |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | 10         | W                     |
| $T_J$     | Junction Temperature                             | 150        | $^\circ\text{C}$      |
| $T_{STG}$ | Storage Temperature                              | - 55 ~ 150 | $^\circ\text{C}$      |

\*  $PW \leq 10\text{ms}$ , Duty Cycle  $\leq 50\%$

#### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol                 | Parameter                              | Test Condition   | Min.     | Typ.      | Max. | Units         |
|------------------------|--|--|----------|-----------|------|---------------|
| $I_{CBO}$              | Collector Cut-off Current              | $V_{CB} = 45\text{V}$ , $I_E = 0$  |          |           | 1    | $\mu\text{A}$ |
| $I_{EBO}$              | Emitter Cut-off Current                | $V_{EB} = 3\text{V}$ , $I_C = 0$   |          |           | 1    | $\mu\text{A}$ |
| $h_{FE1}$<br>$h_{FE2}$ | * DC Current Gain                      | $V_{CE} = 5\text{V}$ , $I_C = 20\text{mA}$<br>$V_{CE} = 5\text{V}$ , $I_C = 0.5\text{A}$ | 30<br>60 | 70<br>100 | 320  |               |
| $V_{CE(\text{Sat})}$   | * Collector-Emitter Saturation Voltage | $I_C = 1.5\text{A}$ , $I_B = 0.15\text{A}$   |          | 0.3       | 2    | V             |
| $V_{BE(\text{Sat})}$   | * Base-Emitter Saturation Voltage      | $I_C = 1.5\text{A}$ , $I_B = 0.15\text{A}$   |          | 0.8       | 2    | V             |
| $f_T$                  | Current Gain Bandwidth Product         | $V_{CE} = 5\text{V}$ , $I_E = 0.1\text{A}$   |          | 60        |      | MHz           |
| $C_{ob}$               | Output Capacitance                     | $V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$                                    |          | 40        |      | pF            |

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

#### $h_{FE}$ Classification

| Classification | R        | O         | Y         |
|----------------|----------|-----------|-----------|
| $h_{FE2}$      | 60 ~ 120 | 100 ~ 200 | 160 ~ 320 |

# Typical Characteristics

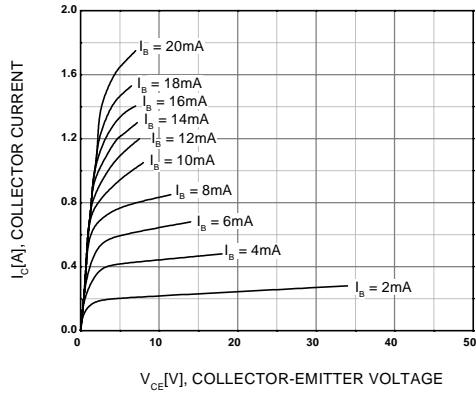


Figure 1. Static Characteristic

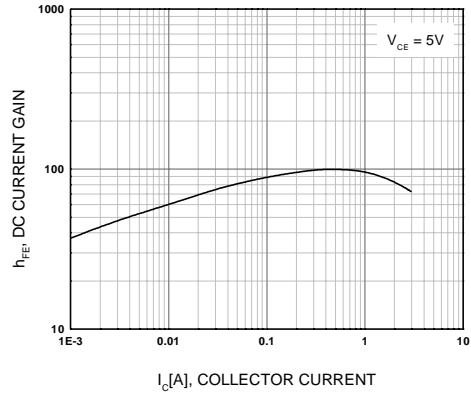


Figure 2. DC current Gain

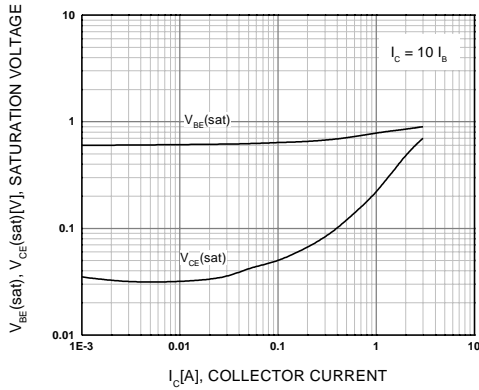


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

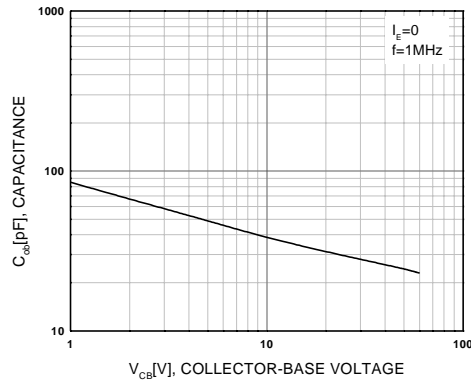


Figure 4. Collector Output Capacitance

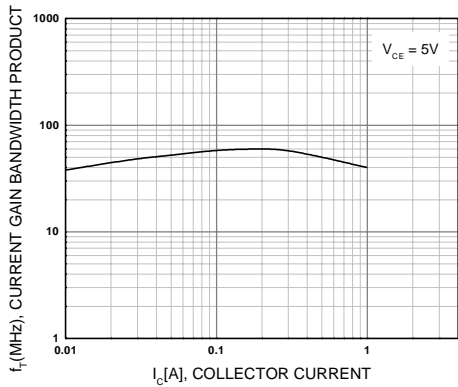


Figure 5. Current Gain Bandwidth Product

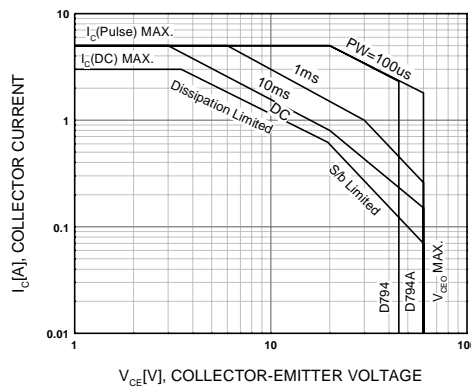


Figure 6. Safe Operating Area

### Typical Characteristics (Continued)

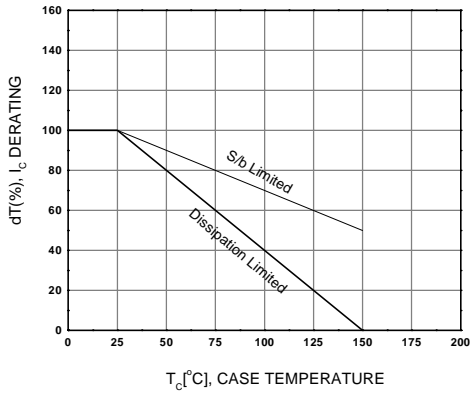


Figure 7. Derating Curve Of Safe Operating Areas

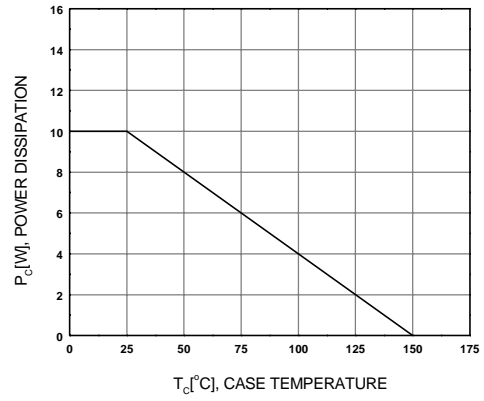
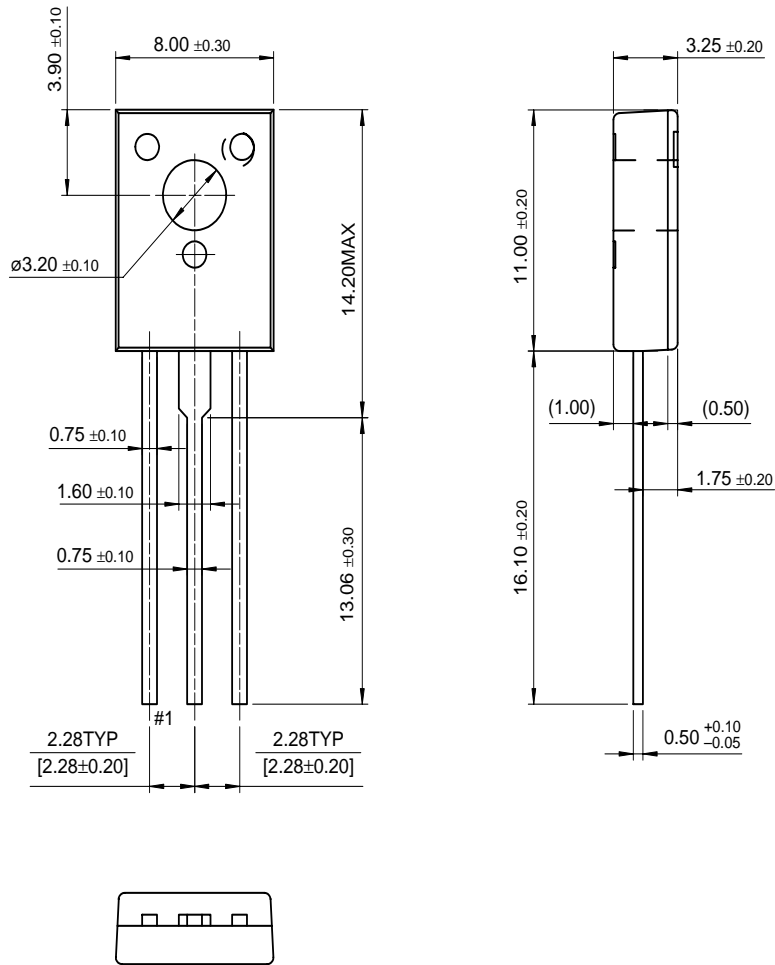


Figure 8. Power Derating

# Package Dimensions

KSD794/794A

## TO-126



Dimensions in Millimeters

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