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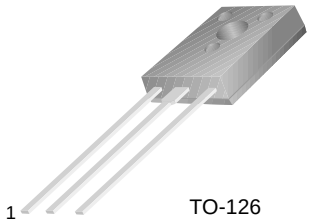
# KSD794/794A

## Audio Frequency Power Amplifier

- Complement to KSB744/KSB744A




TO-126

1. Emitter 2.Collector 3.Base

## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C$=25°C unless otherwise noted

| Symbol | Parameter | | Value | Units |
|---|---|---|---|---|
| $V_{CBO}$ | Collector- Base Voltage | | 70 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | : KSD794 | 45 | V |
| | | : KSD794A | 60 | V |
| $V_{EBO}$ | 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°C) | | 1 | W |
| $P_C$ | Collector Dissipation ($T_C$=25°C) | | 10 | W |
| $T_J$ | Junction Temperature | | 150 | °C |
| $T_{STG}$ | Storage Temperature | | - 55 ~ 150 | °C |

* PW≤10ms, Duty Cycle≤50%

### Electrical Characteristics $T_C$=25°C unless otherwise noted

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

* Pulse Test: PW≤350μs, Duty Cycle≤2% Pulsed

### $h_{FE}$ Classificntion

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

# Typical Characteristics

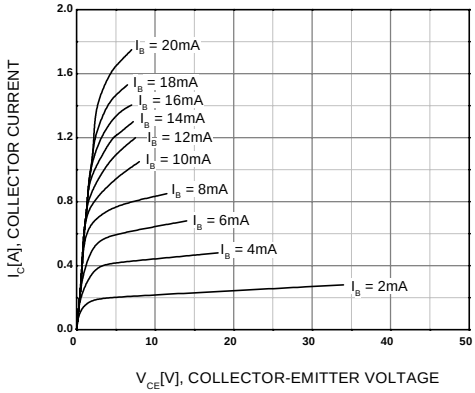



**Figure 1. Static Characteristic**

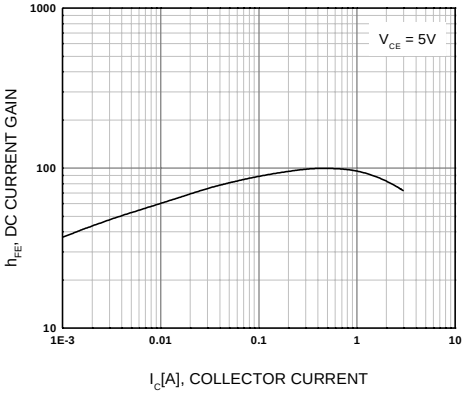



**Figure 2. DC current Gain**

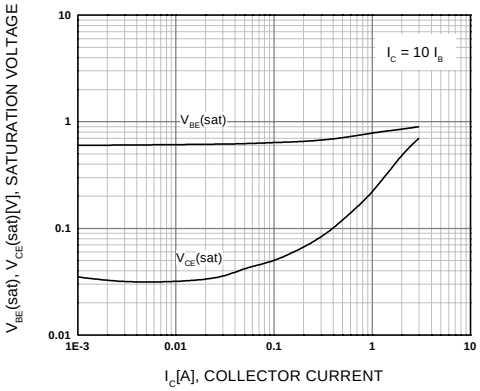



**Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage**

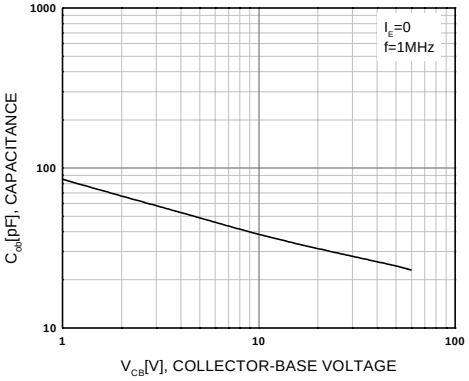



**Figure 4. Collector Output Capacitance**

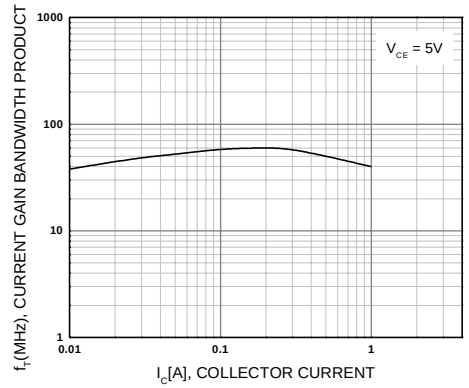



**Figure 5. Current Gain Bandwidth Product**

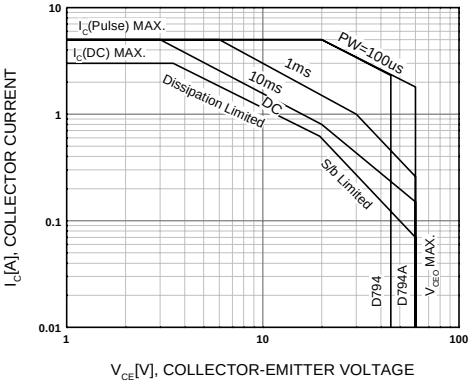



**Figure 6. Safe Operating Area**

## Typical Characteristics (Continued)

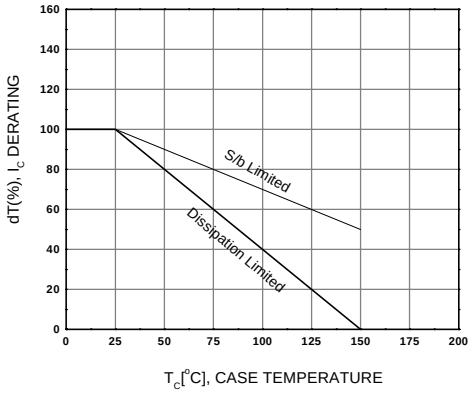



**Figure 7. Derating Curve Of Safe Operating Areas**

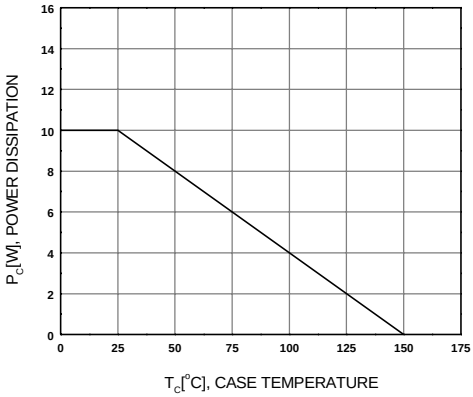
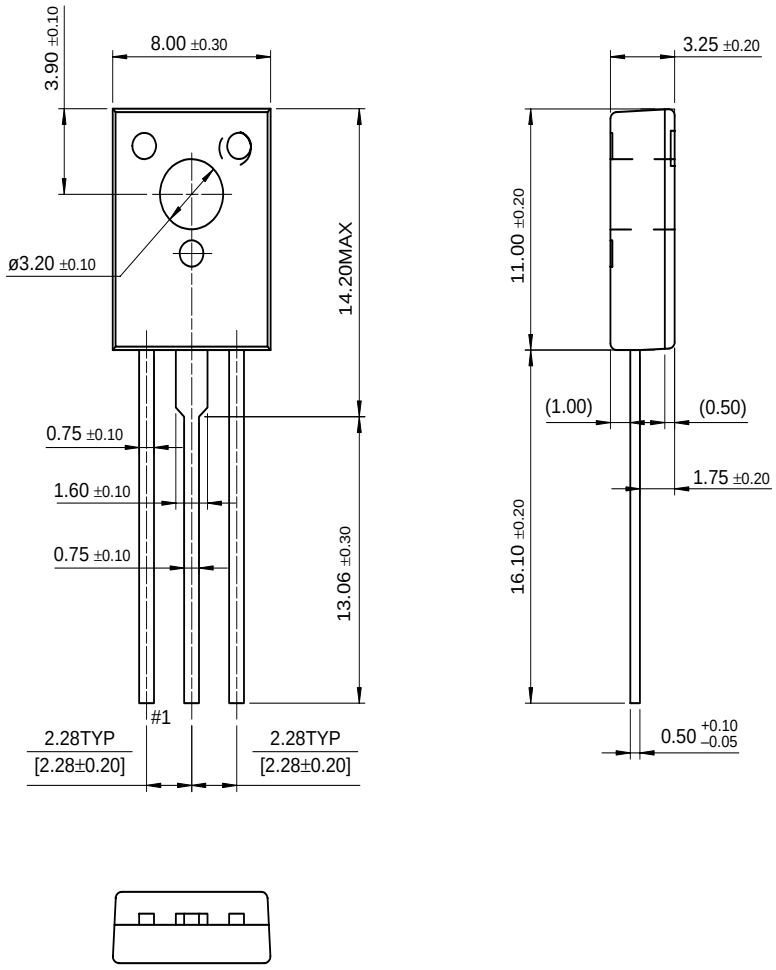



**Figure 8. Power Derating**

## Package Demensions

# TO-126




Dimensions in Millimeters

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