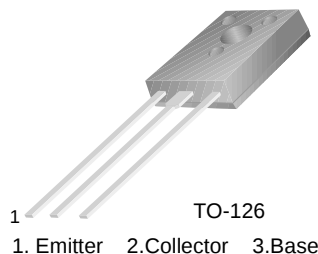


# KSB794/795

KSB794/795

## Audio Frequency Power Amplifier

- Low Speed Switching Industrial Use

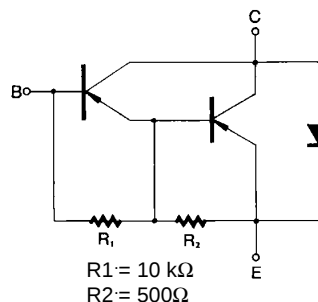


## PNP Epitaxial Silicon Darlington Transistor

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

| Symbol    | Parameter                                        | Value      | Units            |
|-----------|--------------------------------------------------|------------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                           | : KSB794   | - 60 V           |
|           |                                                  | : KSB795   | - 80 V           |
| $V_{CEO}$ | Collector-Emitter Voltage                        | : KSB794   | - 60 V           |
|           |                                                  | : KSB795   | - 80 V           |
| $V_{EBO}$ | Emitter-Base Voltage                             | - 8        | V                |
| $I_C$     | Collector Current (DC)                           | - 1.5      | A                |
| $I_{CP}$  | *Collector Current (Pulse)                       | - 3        | A                |
| $I_B$     | Base Current (DC)                                | - 0.15     | 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 | $^\circ\text{C}$ |

\*  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 10\%$



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

| Symbol                 | Parameter                              | Test Condition                                                                             | Min.         | Max.  | Units         |
|------------------------|----------------------------------------|--------------------------------------------------------------------------------------------|--------------|-------|---------------|
| $I_{CBO}$              | Collector Cut-off Current              | $V_{CB} = -60\text{V}$ , $I_E = 0$                                                         |              | - 10  | $\mu\text{A}$ |
| $I_{CER}$              | Collector Cut-off Current              | $V_{CE} = -60\text{V}$ , $R_{BE} = 51\Omega$ @ $T_C = 125^\circ\text{C}$                   |              | - 1   | mA            |
| $I_{CEX1}$             | Collector Cut-off Current              | $V_{CE} = -60\text{V}$ , $V_{BE}(\text{off}) = 1.5\text{V}$                                |              | - 10  | $\mu\text{A}$ |
| $I_{CEX2}$             | Collector Cut-off Current              | $V_{CE} = -60\text{V}$ , $V_{BE}(\text{off}) = 1.5\text{V}$ @ $T_C = 125^\circ\text{C}$    |              | -1    | mA            |
| $I_{EBO}$              | Emitter Cut-off Current                | $V_{EB} = -5\text{V}$ , $I_C = 0$                                                          |              | - 1   | mA            |
| $h_{FE1}$<br>$h_{FE2}$ | * DC Current Gain                      | $V_{CE} = -2\text{V}$ , $I_C = -0.5\text{A}$<br>$V_{CE} = -2\text{V}$ , $I_C = -1\text{A}$ | 1000<br>2000 | 30000 |               |
| $V_{CE(\text{sat})}$   | * Collector-Emitter Saturation Voltage | $I_C = -1\text{A}$ , $I_B = -1\text{mA}$                                                   |              | -1.5  | V             |
| $V_{BE(\text{sat})}$   | * Base-Emitter Saturation Voltage      | $I_C = -1\text{A}$ , $I_B = -1\text{mA}$                                                   |              | - 2   | V             |

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

### $h_{FE}$ Classification

| Classification | R           | O            | Y            |
|----------------|-------------|--------------|--------------|
| $h_{FE2}$      | 2000 ~ 5000 | 4000 ~ 10000 | 8000 ~ 30000 |

# Typical Characteristics

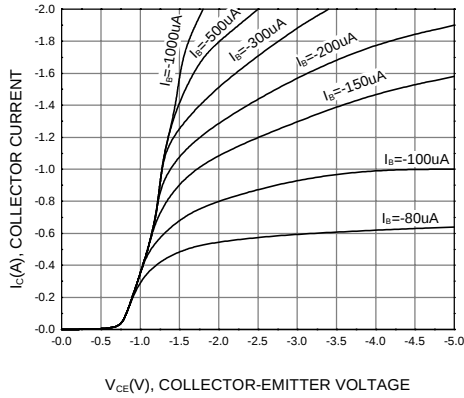


Figure 1. Static Characteristic

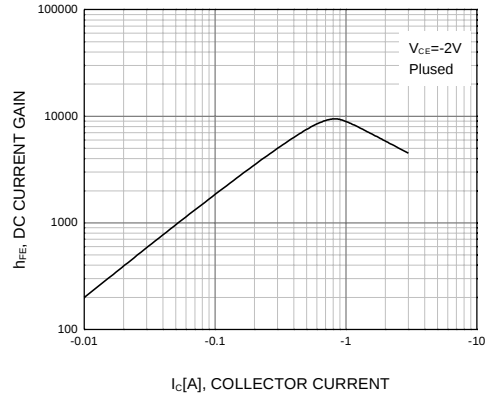


Figure 2. DC current Gain

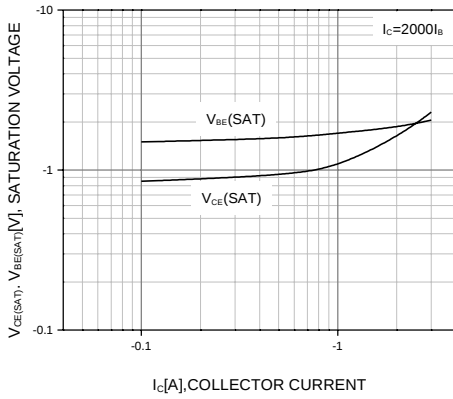


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

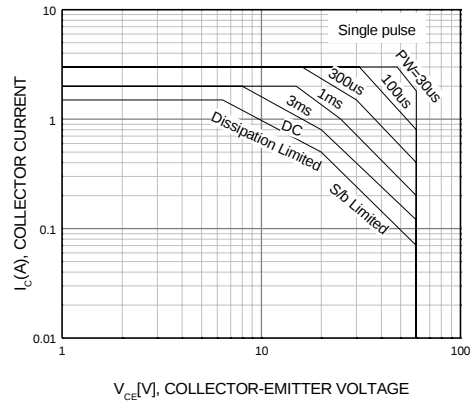


Figure 4. Safe Operating Area

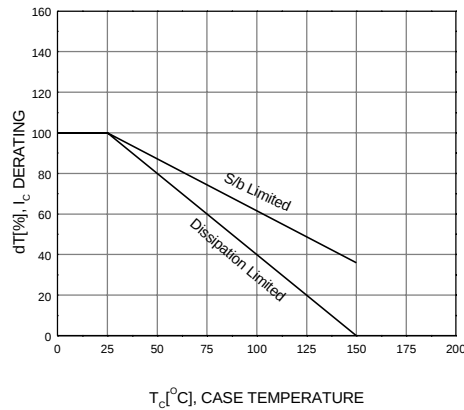


Figure 5. Derating Curve of Safe Operating Area

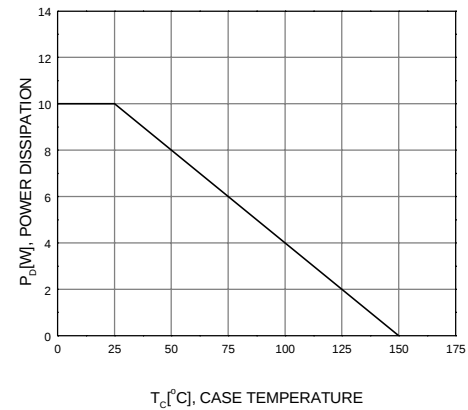
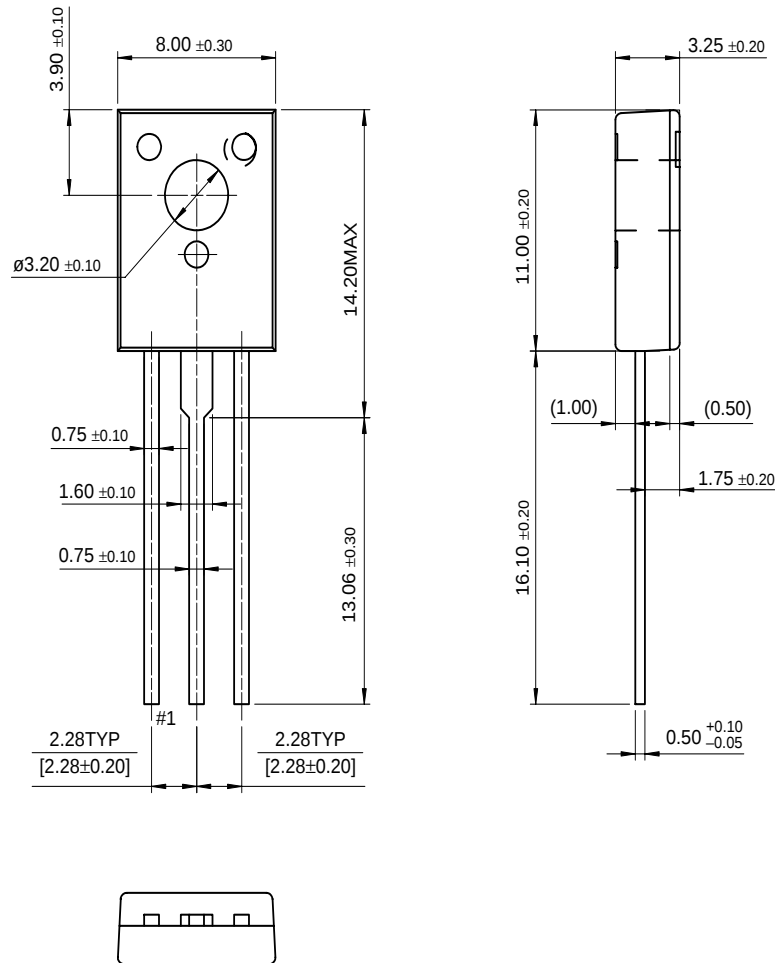


Figure 6. Power Derating

# Package Dimensions

## TO-126



Dimensions in Millimeters

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| CROSSVOLT™           | GlobalOptoisolator™ | Power247™           | SuperSOT™-6     |
| DenseTrench™         | GTO™                | PowerTrench®        | SuperSOT™-8     |
| DOME™                | HiSeC™              | QFET™               | SyncFET™        |
| EcoSPARK™            | ISOPLANAR™          | QS™                 | TruTranslation™ |
| E <sup>2</sup> CMOS™ | LittleFET™          | QT Optoelectronics™ | TinyLogic™      |
| EnSigna™             | MicroFET™           | Quiet Series™       | UHC™            |
| FACT™                | MICROWIRE™          | SLIENT SWITCHER®    | UltraFET®       |
| FACT Quiet Series™   | OPTOLOGIC™          | SMART START™        | VCX™            |

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