

**KSB772****PNP EPITAXIAL SILICON TRANSISTOR**

T-33-17

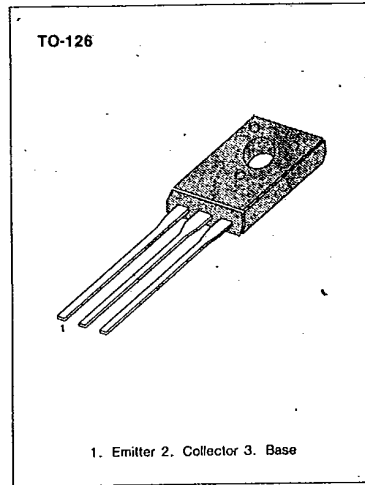
**AUDIO FREQUENCY POWER AMPLIFIER  
LOW SPEED SWITCHING**

- Complement to KSD882

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	-40	V
Collector-Emitter Voltage	$V_{CE0}$	-30	V
Emitter-Base Voltage	$V_{EB0}$	-5	V
Collector Current (DC)	$I_C$	-3	A
*Collector Current (Pulse)	$I_C$	-7	A
Base Current (DC)	$I_B$	-0.6	A
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	10	W
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	1	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

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

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -30\text{V}, I_E = 0$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -3\text{V}, I_C = 0$			-1	$\mu\text{A}$
*DC Current Gain	$h_{FE1}$	$V_{CE} = -2\text{V}, I_C = -20\text{mA}$	30	220		
	$h_{FE2}$	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	60	160	400	
*Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$		-0.3	-0.5	V
*Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$		-1.0	-2.0	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = -5\text{V}, I_E = 0.1\text{A}$		80		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0$ $f = 1\text{MHz}$		55		pF

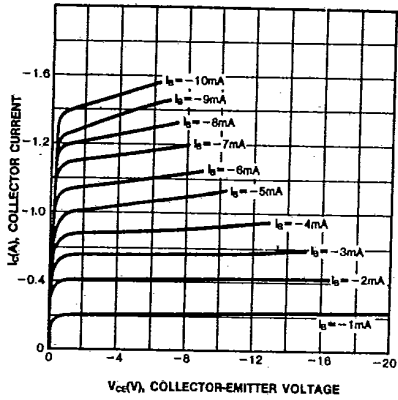
- Pulse Test:  $PW \leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$

 **$h_{FE}(2)$  CLASSIFICATION**

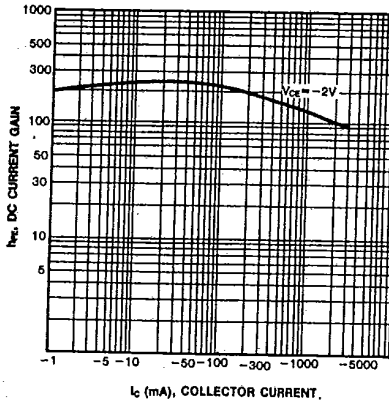
Classification	R	O	Y	G
$h_{FE}(2)$	60-120	100-200	160-320	200-400



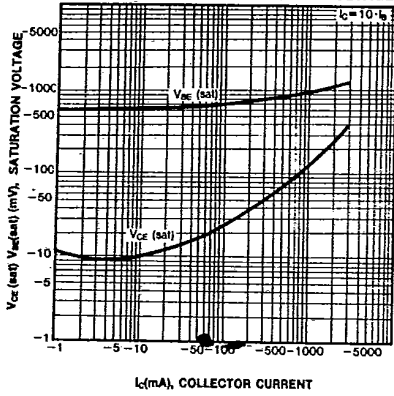
STATIC CHARACTERISTIC



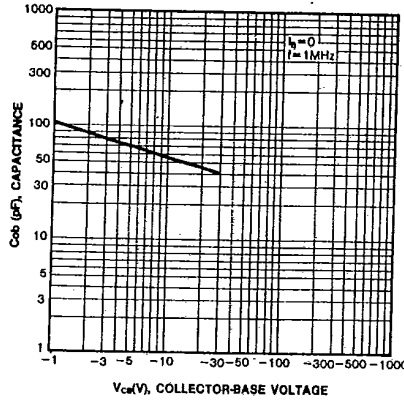
DC CURRENT GAIN



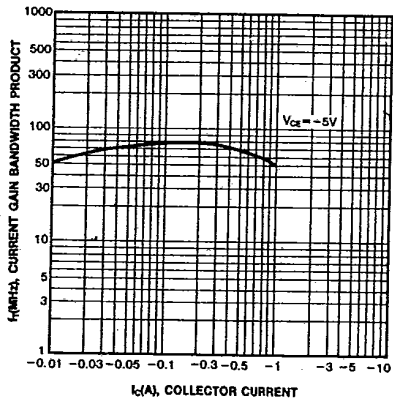
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



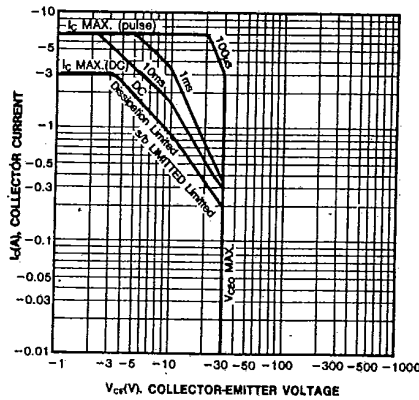
COLLECTOR OUTPUT CAPACITANCE



CURRENT GAIN-BANDWIDTH PRODUCT



SAFE OPERATING AREA

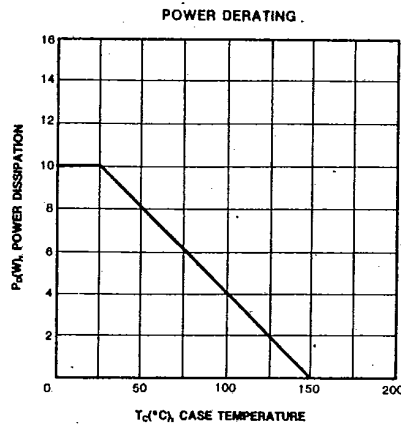
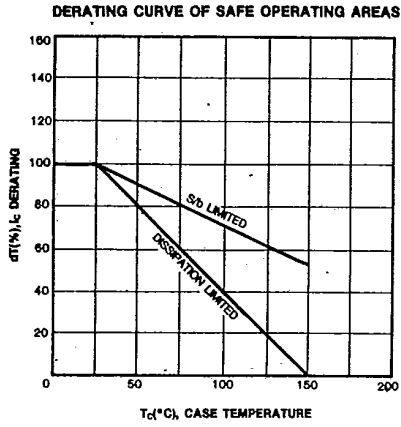


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**PNP EPITAXIAL SILICON TRANSISTOR**

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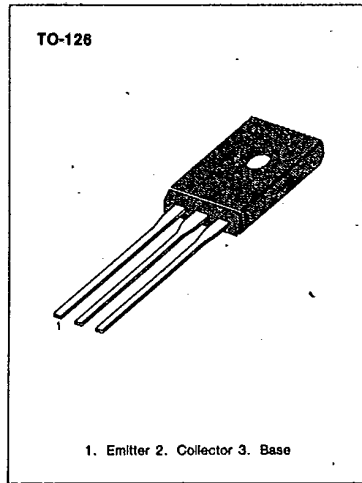


**KSB794**

**PNP EPITAXIAL SILICON  
DARLINGTON TRANSISTOR**

T-33-31

**AUDIO FREQUENCY POWER AMPLIFIER  
LOW SPEED SWITCHING  
INDUSTRIAL USE**



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EB0</sub>	-8	V
Collector Current (DC)	I <sub>C</sub>	±1.5	A
*Collector Current (Pulse)	I <sub>C</sub>	±3	A
Base Current (DC)	I <sub>B</sub>	-0.15	A
Collector Dissipation (T <sub>a</sub> =25°C)	P <sub>C</sub>	1	W
Collector Dissipation (T <sub>c</sub> =25°C)	P <sub>C</sub>	10	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

\* PW≤300μs, Duty Cycle ≤10%

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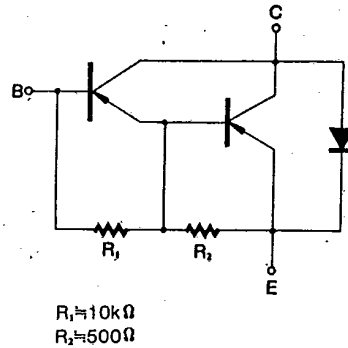
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =-60V, I <sub>E</sub> =0		-10	μA
Collector Cutoff Current	I <sub>CE0</sub>	V <sub>CE</sub> =-60V, R <sub>BE</sub> =51Ω, T <sub>a</sub> =125°C		-1	mA
Collector Cutoff Current	I <sub>CEx1</sub>	V <sub>CE</sub> =-60V, V <sub>BE</sub> (off)=1.5V		-10	μA
Collector Cutoff Current	I <sub>CEx2</sub>	V <sub>CE</sub> =-60V, V <sub>BE</sub> (off)=1.5V T <sub>a</sub> =125°C		-1	mA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0		-1	mA
*DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A	1000		
	h <sub>FE2</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-1A	2000	30000	
*Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-1mA		-1.5	V
*Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-1mA		-2	V

\*Pulse Test: PW≤350μs, Duty Cycle≤2% pulsed.

**h<sub>FE</sub>(2) CLASSIFICATION**

Classification	R	O	Y
h <sub>FE</sub> (2)	2000-5000	4000-10000	8000-30000

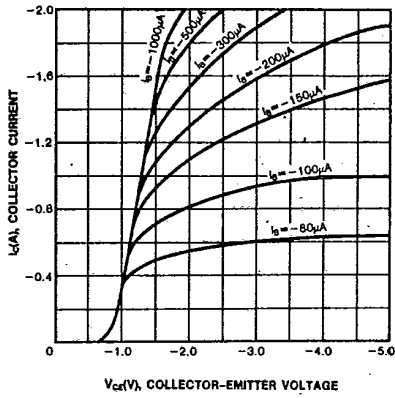


**PNP EPITAXIAL SILICON  
DARLINGTON TRANSISTOR**

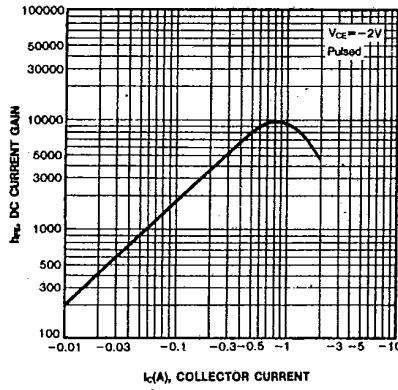
**KSB794**

T-33-31

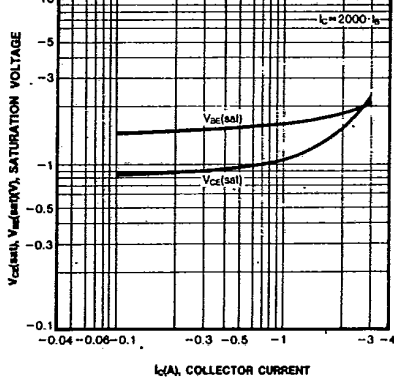
**STATIC CHARACTERISTIC**



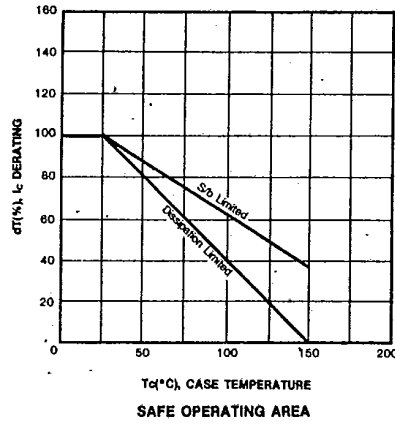
**DC CURRENT GAIN**



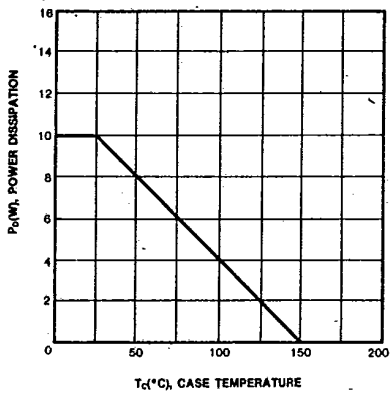
**BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE**



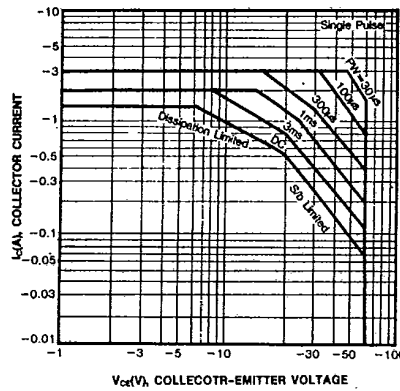
**DERATING CURVE OF SAFE OPERATING AREAS**



**POWER DERATING**



**SAFE OPERATING AREA**

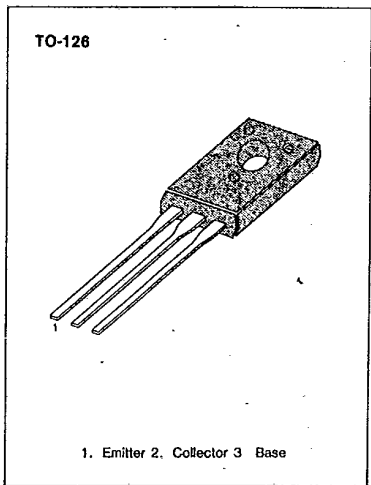


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**KSB795**

T-33-31

**AUDIO FREQUENCY POWER AMPLIFIER  
LOW SPEED SWITCHING  
INDUSTRIAL USE**



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-80	V
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Emitter-Base Voltage	V <sub>EBO</sub>	-8	V
Collector Current (DC)	I <sub>C</sub>	±1.5	A
* Collector Current (Pulse)	I <sub>C</sub>	±3	A
Base Current (DC)	I <sub>B</sub>	-0.15	A
Collector Dissipation (T <sub>a</sub> = 25°C)	P <sub>C</sub>	1	W
Collector Dissipation (T <sub>c</sub> = 25°C)	P <sub>C</sub>	10	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

\* PW ≤ 300μs, Duty Cycle ≤ 10%

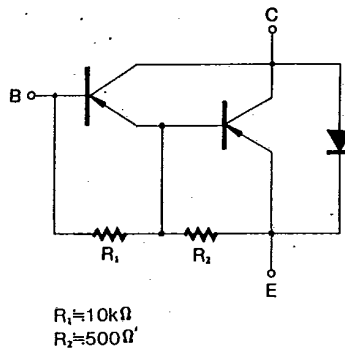
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Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = -80V, I <sub>E</sub> = 0		-10	μA
Collector Cutoff Current	I <sub>CER</sub>	V <sub>CE</sub> = -80V, R <sub>BE</sub> = 51Ω, T <sub>a</sub> = 125°C		-1	mA
Collector Cutoff Current	I <sub>CEX1</sub>	V <sub>CE</sub> = -80V, V <sub>BE</sub> (off) = 1.5V		-10	μA
Collector Cutoff Current	I <sub>CEX2</sub>	V <sub>CE</sub> = -80V, V <sub>BE</sub> (off) = 1.5V T <sub>a</sub> = 125°C		-1	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0		-1	mA
* DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -0.5A	1000		
	h <sub>FE2</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -1A	2000	30000	
* Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = -1A, I <sub>B</sub> = -1mA		-1.5	V
* Base-Emitter Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> = -1A, I <sub>B</sub> = -1mA		-2	V

\* Pulse Test: PW ≤ 350μs, Duty Cycle ≤ 2% pulsed.

**h<sub>FE</sub>(2) CLASSIFICATION**

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