

KSB772**PNP EPITAXIAL SILICON TRANSISTOR**

T-33-17

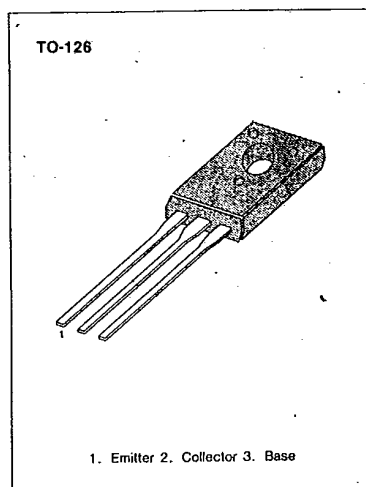
**AUDIO FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING**

- 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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			-1	μA
• 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

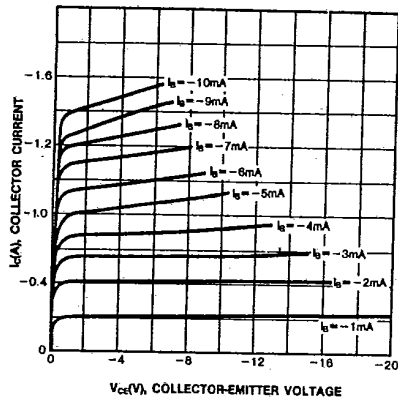


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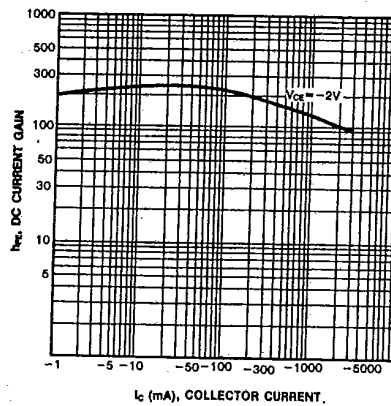
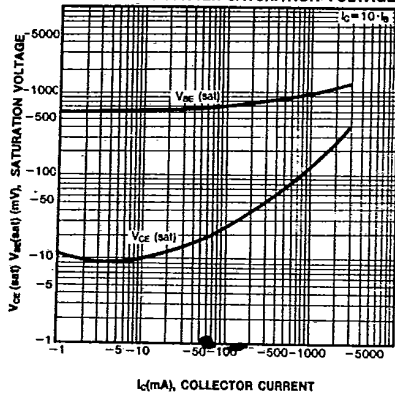
PNP EPITAXIAL SILICON TRANSISTOR

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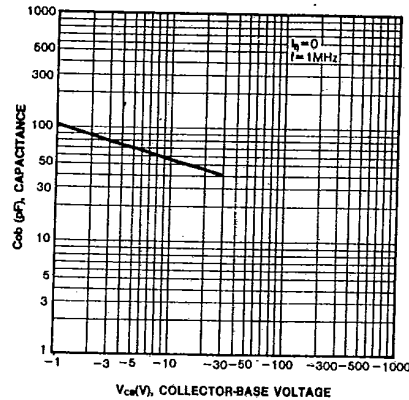
STATIC CHARACTERISTIC



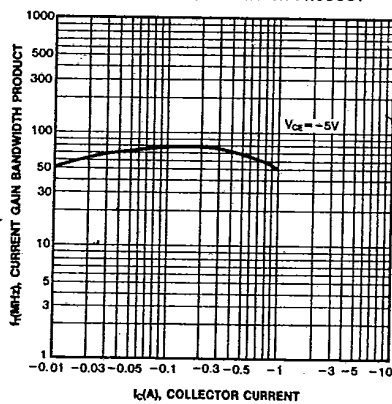
DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

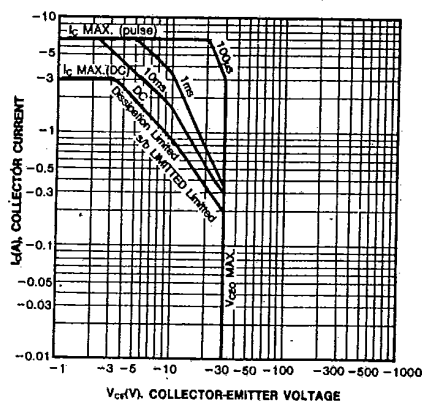
COLLECTOR OUTPUT CAPACITANCE



CURRENT GAIN-BANDWIDTH PRODUCT



SAFE OPERATING AREA



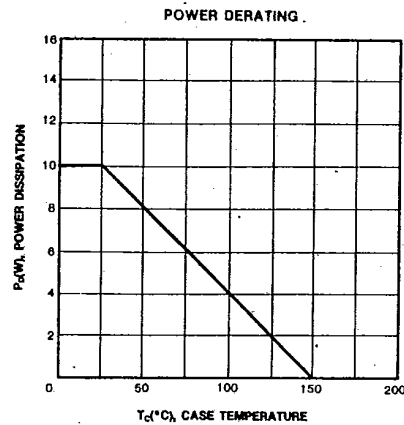
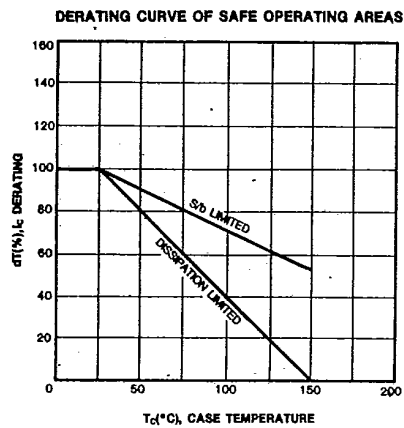
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PNP EPITAXIAL SILICON TRANSISTOR

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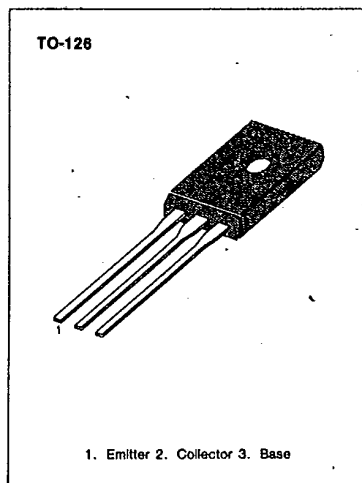
KSB794**PNP EPITAXIAL SILICON
DARLINGTON TRANSISTOR**

T-33-31

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CE0}	-60	V
Emitter-Base Voltage	V_{EB0}	-8	V
Collector Current (DC)	I_C	± 1.5	A
* Collector Current (Pulse)	I_C	± 3	A
Base Current (DC)	I_B	-0.15	A
Collector Dissipation ($T_a=25^\circ\text{C}$)	P_C	1	W
Collector Dissipation ($T_c=25^\circ\text{C}$)	P_C	10	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

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

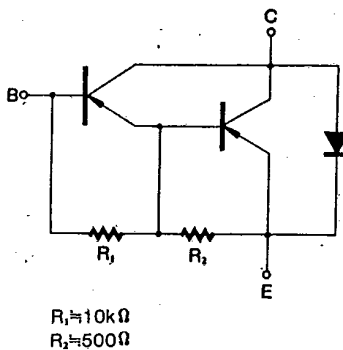
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ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

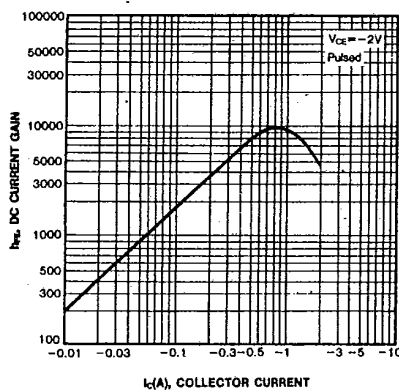
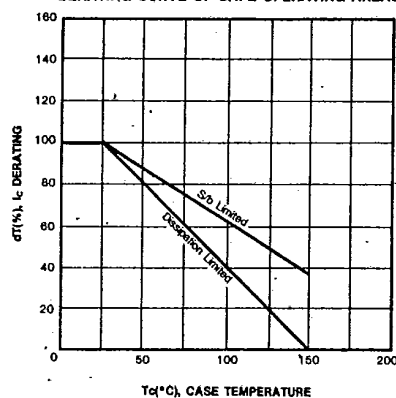
Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	I_{CB0}	$V_{CB} = -60\text{V}$, $I_E = 0$		-10	μA
Collector Cutoff Current	I_{CER}	$V_{CE} = -60\text{V}$, $R_{BE} = 51\Omega$, $T_a = 125^\circ\text{C}$		-1	mA
Collector Cutoff Current	I_{CEX1}	$V_{CE} = -60\text{V}$, $V_{BE}(\text{off}) = 1.5\text{V}$		-10	μA
Collector Cutoff Current	I_{CEX2}	$V_{CE} = -60\text{V}$, $V_{BE}(\text{off}) = 1.5\text{V}$ $T_a = 125^\circ\text{C}$		-1	mA
Emitter Cutoff Current	I_{EB0}	$V_{EB} = -5\text{V}$, $I_C = 0$		-1	mA
* DC Current Gain	h_{FE1}	$V_{CE} = -2\text{V}$, $I_C = -0.5\text{A}$	1000		
	h_{FE2}	$V_{CE} = -2\text{V}$, $I_C = -1\text{A}$	2000	30000	
* Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -1\text{A}$, $I_B = -1\text{mA}$		-1.5	V
* Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -1\text{A}$, $I_B = -1\text{mA}$		-2	V

* Pulse Test: $PW \leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$ pulsed. **$h_{FE}(2)$ CLASSIFICATION**

Classification	R	O	Y
$h_{FE}(2)$	2000-5000	4000-10000	8000-30000



STATIC CHARACTERISTIC

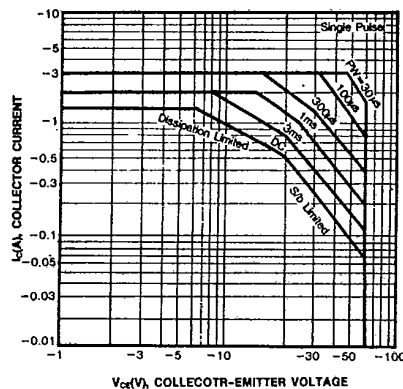
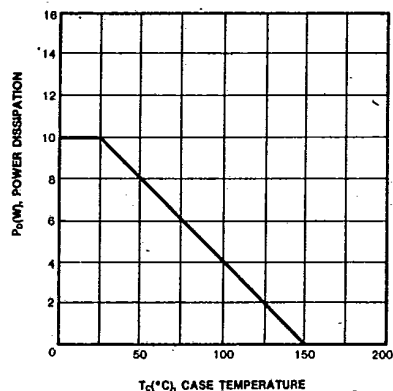
 $I_C(A)$, COLLECTOR CURRENT

WAL COLLECTOR CURRENT

T_{cl} °C, CASE TEMPERATURE

POWER DERATING

SAFE OPERATING AREA



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PNP EPITAXIAL SILICON
DARLINGTON TRANSISTOR

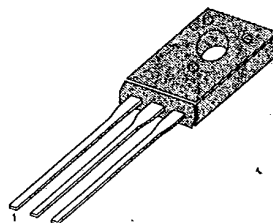
T-33-31

AUDIO FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING
INDUSTRIAL USEABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-80	V
Emitter-Base Voltage	V_{EBO}	-8	V
Collector Current (DC)	I_C	± 1.5	A
* Collector Current (Pulse)	I_C	± 3	A
Base Current (DC)	I_B	-0.15	A
Collector Dissipation ($T_a=25^\circ\text{C}$)	P_C	1	W
Collector Dissipation ($T_c=25^\circ\text{C}$)	P_C	10	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

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

TO-126



1. Emitter 2. Collector 3. Base

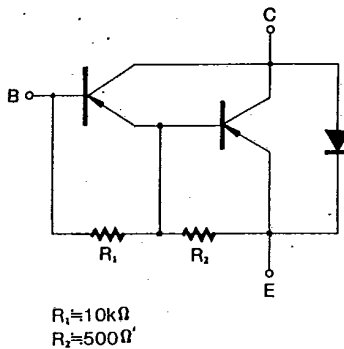
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ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = -80\text{V}$, $I_E = 0$		-10	μA
Collector Cutoff Current	I_{CER}	$V_{CE} = -80\text{V}$, $R_{BE} = 51\Omega$, $T_a = 125^\circ\text{C}$		-1	mA
Collector Cutoff Current	I_{CEX1}	$V_{CE} = -80\text{V}$, $V_{BE}(\text{off}) = 1.5\text{V}$		-10	μA
Collector Cutoff Current	I_{CEX2}	$V_{CE} = -80\text{V}$, $V_{BE}(\text{off}) = 1.5\text{V}$ $T_a = 125^\circ\text{C}$		-1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$		-1	mA
* DC Current Gain	h_{FE1}	$V_{CE} = -2\text{V}$, $I_C = -0.5\text{A}$	1000		
	h_{FE2}	$V_{CE} = -2\text{V}$, $I_C = -1\text{A}$	2000	30000	
* Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -1\text{A}$, $I_B = -1\text{mA}$		-1.5	V
* Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -1\text{A}$, $I_B = -1\text{mA}$		-2	V

* Pulse Test: $PW \leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$ pulsed. $h_{FE}(2)$ CLASSIFICATION

Classification	R	O	Y
$h_{FE}(2)$	2000-5000	4000-10000	8000-30000



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