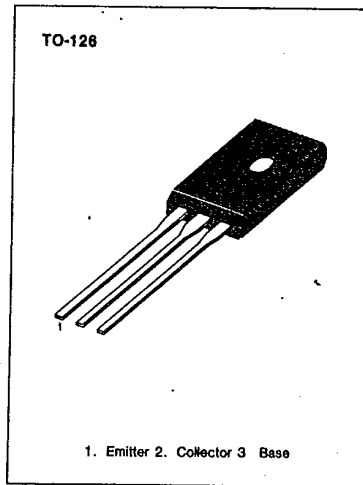


**KSD794/794A****NPN EPITAXIAL SILICON TRANSISTOR****AUDIO FREQUENCY POWER AMPLIFIER**

• Complement to KSB744/KSB744A

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	70	V
Collector-Emitter Voltage : KSD794	V <sub>CE0</sub>	45	V
: KSD794A		60	V
Emitter-Base Voltage	V <sub>EB0</sub>	5	V
Collector Current (DC)	I <sub>C</sub>	3	A
Collector Current (Pulse)	I <sub>C</sub>	5	A
Base Current (DC)	I <sub>B</sub>	0.6	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



3

• PW ≤ 10ms, Duty Cycle ≤ 50%

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = 45V, I <sub>E</sub> = 0			1	μA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> = 3V, I <sub>C</sub> = 0			1	μA
• DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 20mA	30	70		
	h <sub>FE2</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.5A	60	100	320	
* Collector Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 1.5A, I <sub>B</sub> = 0.15A		0.3	2	V
* Base Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 1.5A, I <sub>B</sub> = 0.15A		0.8	2	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.1A		60		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz		40		pF

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

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

Classification	R	O	Y
h <sub>FE</sub> (2)	60-120	100-200	160-320

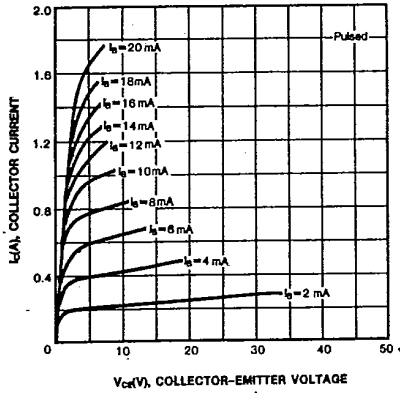


**KSD794/794A**

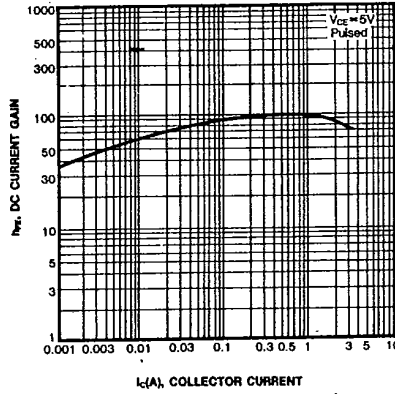
**NPN EPITAXIAL SILICON TRANSISTOR**

T-33-07

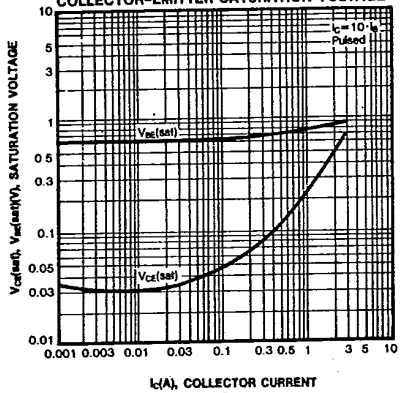
STATIC CHARACTERISTIC



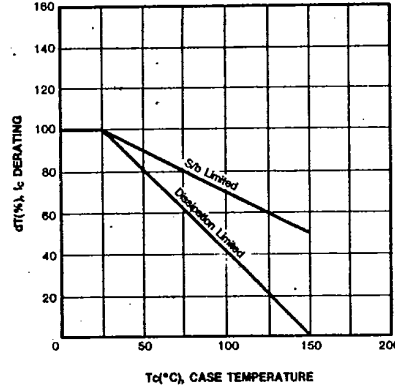
DC CURRENT GAIN



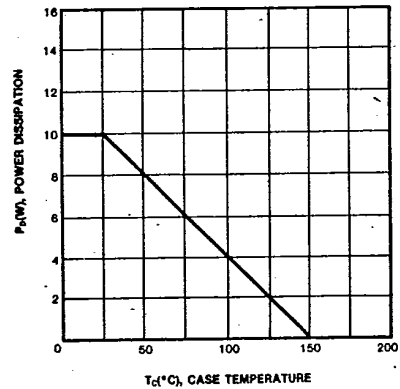
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



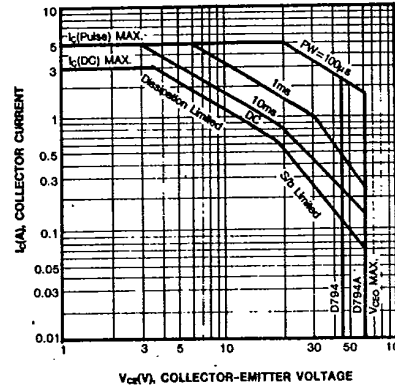
DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



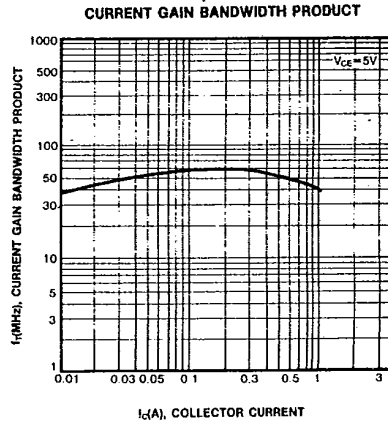
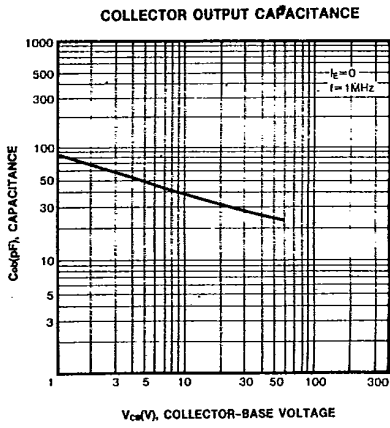
SAFE OPERATING AREA



KSD794/794A

NPN EPITAXIAL SILICON TRANSISTOR

T-33-07



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**KSD880****NPN EPITAXIAL SILICON TRANSISTOR**

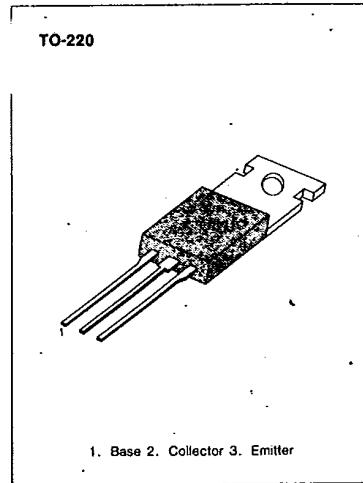
T-33-09

**LOW FREQUENCY POWER AMPLIFIER**

- Complement to KSB834

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	3	A
Base Current	$I_B$	0.3	A
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	30	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=60\text{V}, I_E=0$			100	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=7\text{V}, I_C=0$			100	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=50\text{mA}, I_B=0$	60			V
DC Current Gain	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	60		300	
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=3\text{A}$	20			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3\text{A}, I_B=0.3\text{A}$		0.4	1	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$		0.7	1	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$		3		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		70		pF
Turn on Time	$t_{on}$	$I_B1=-I_B2=0.2\text{A}$		0.8		$\mu\text{s}$
Storage Time	$t_s$	$V_{CC}=30\text{V}$		1.5		$\mu\text{s}$
Fall Time	$t_f$			0.8		$\mu\text{s}$

 **$h_{FE}(1)$  CLASSIFICATION**

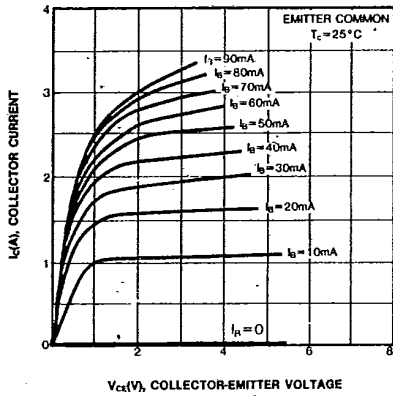
Classification	O	Y	G
$h_{FE}(1)$	60-120	100-200	150-300

**KSD880**

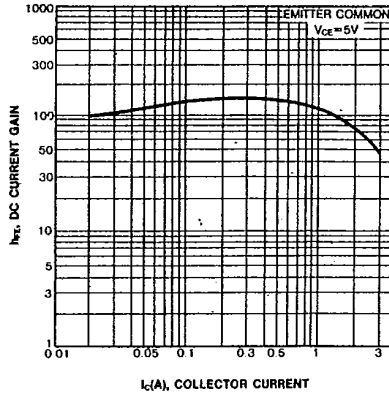
**NPN EPITAXIAL SILICON TRANSISTOR**

T-33-09

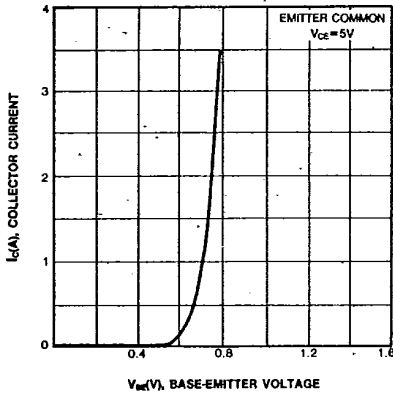
STATIC CHARACTERISTIC



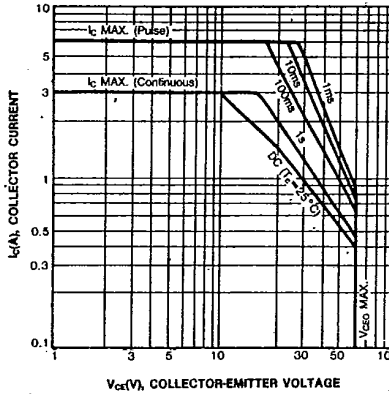
DC CURRENT GAIN



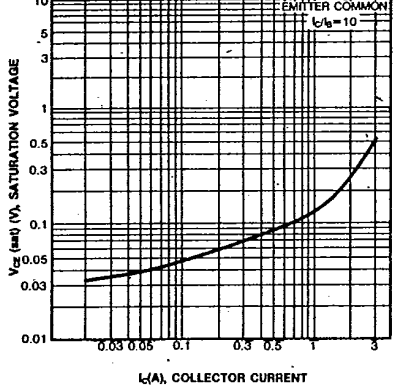
BASE-EMITTER ON VOLTAGE



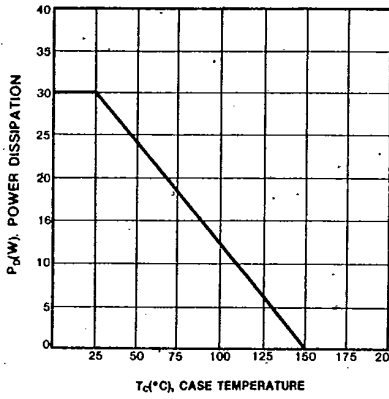
SAFE OPERATING AREA



COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT



POWER DERATING



3