

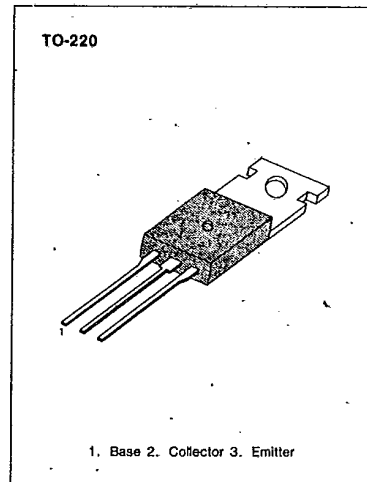
**KSB707****PNP EPTAXIAL SILICON TRANSISTOR**

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

• Complement to KSD568

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	-80	V
Collector-Emitter Voltage	$V_{CE0}$	-60	V
Emitter-Base Voltage	$V_{EB0}$	-7.0	V
Collector Current (DC)	$I_C$	-7.0	A
*Collector Current (Pulse)	$I_C$	-15	A
Base Current (DC)	$I_B$	-3.5	A
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	40	W
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	1.5	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$



3

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

**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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB} = -5\text{V}$ , $I_C = 0$		-10	$\mu\text{A}$
*DC Current Gain	$h_{FE1}$	$V_{CE} = -1\text{V}$ , $I_C = -3\text{A}$	40	200	
	$h_{FE2}$	$V_{CE} = -1\text{V}$ , $I_C = -5\text{A}$	20		
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -5\text{A}$ , $I_B = -0.5\text{A}$		-0.5	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -5\text{A}$ , $I_B = -0.5\text{A}$		-1.5	V

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

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

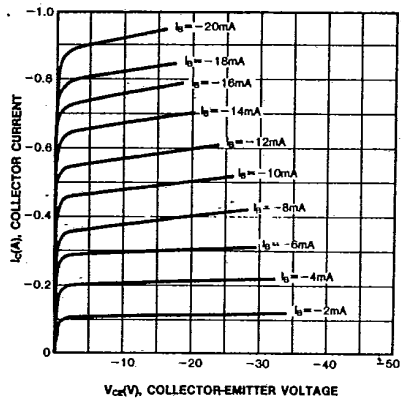
Classification	R	O	Y
$h_{FE}$ (1)	40-80	60-120	100-200

KSB707

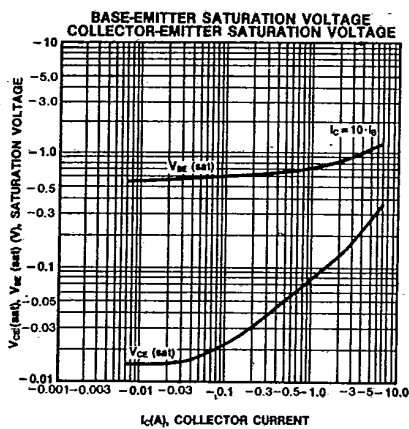
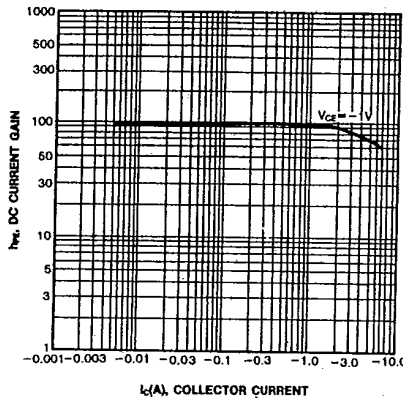
PNP EPITAXIAL SILICON TRANSISTOR

T-33-19

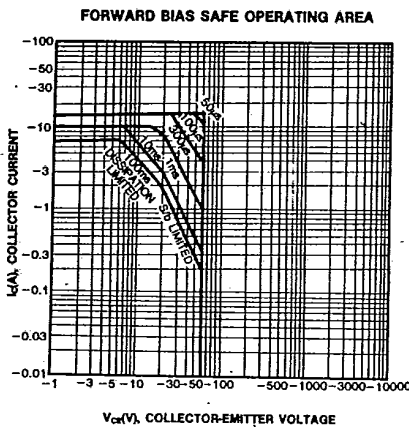
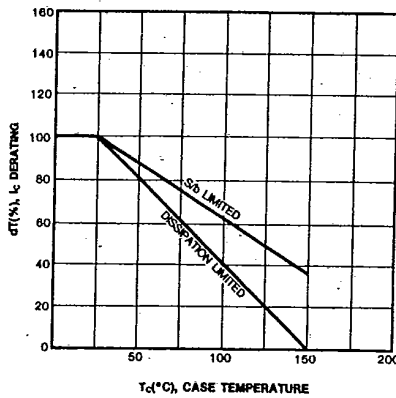
STATIC CHARACTERISTIC



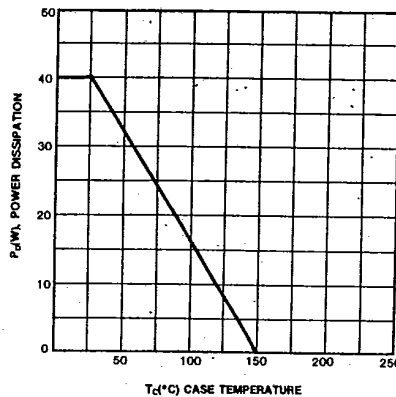
DC CURRENT GAIN



DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



**KSB708****PNP EPITAXIAL SILICON TRANSISTOR**

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

• Complement to KSD569

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	-80	V
Collector-Emitter Voltage	$V_{CE0}$	-80	V
Emitter-Base Voltage	$V_{EB0}$	-7.0	V
Collector Current (DC)	$I_C$	-7.0	A
* Collector Current (Pulse)	$I_C$	-15	A
Base Current (DC)	$I_B$	-3.5	A
Collector Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_C$	40	W
Collector Dissipation ( $T_a = 25^\circ\text{C}$ )	$P_C$	1.5	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  $\leq 10\%$

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

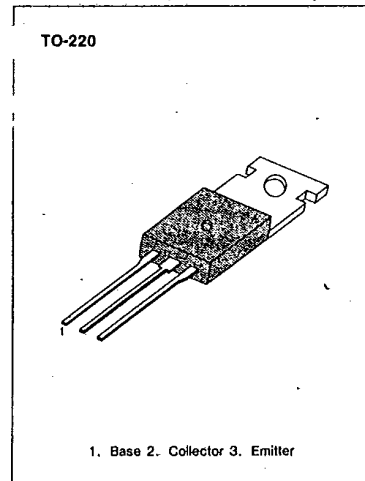
Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -60\text{V}$ , $I_E = 0$		-10	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -5\text{V}$ , $I_C = 0$		-10	$\mu\text{A}$
* DC Current Gain	$h_{FE1}$	$V_{CE} = -1\text{V}$ , $I_C = -3\text{A}$	40	200	
	$h_{FE2}$	$V_{CE} = -1\text{V}$ , $I_C = -5\text{A}$	20		
* Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -5\text{A}$ , $I_B = -0.5\text{A}$		-0.5	V
* Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -5\text{A}$ , $I_B = -0.5\text{A}$		-1.5	V

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

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

Classification	R	O	Y
$h_{FE}$ (1)	40-80	60-120	100-200

T-33-19



3

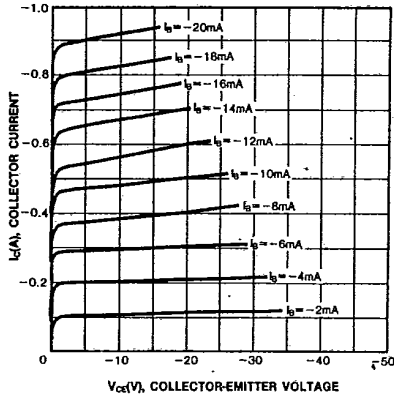


KSB708

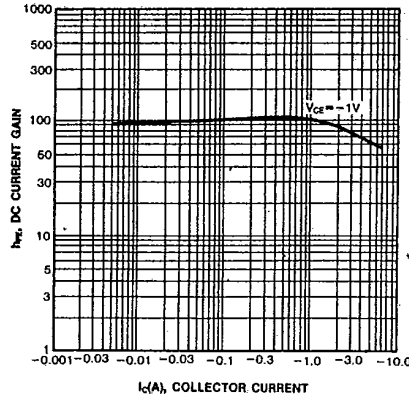
PNP EPITAXIAL SILICON TRANSISTOR

T-33-19

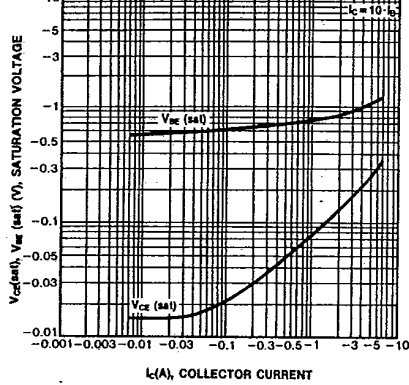
STATIC CHARACTERISTIC



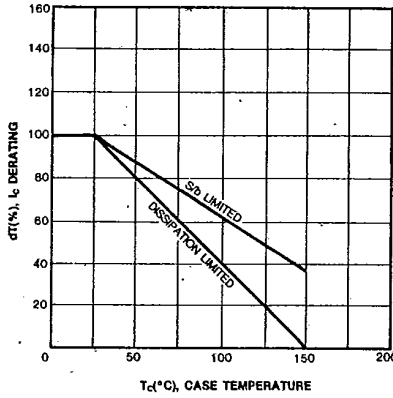
DC CURRENT GAIN



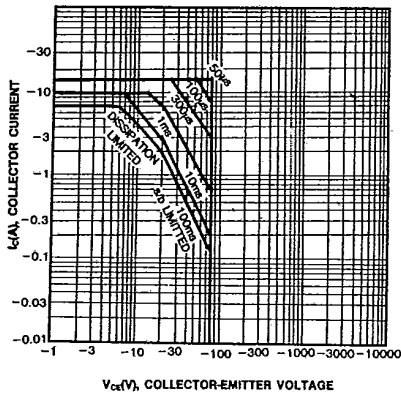
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



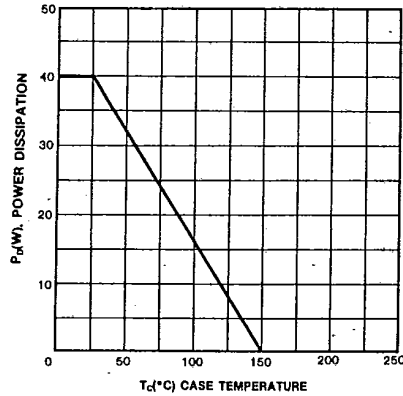
DERATING CURVE OF SAFE OPERATING AREAS



FORWARD BIAS SAFE OPERATING AREA



POWER DERATING



**KSB744/744A****PNP EXITAXIAL SILICON TRANSISTOR**

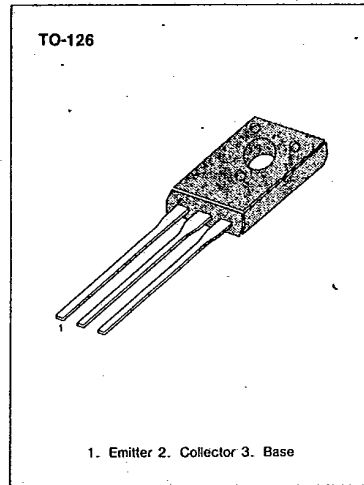
T-33-17

**AUDIO FREQUENCY POWER AMPLIFIER**

- Complement to KSD794/KSD794A

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-70	V
Collector-Emitter Voltage : KSB744	$V_{CEO}$	-45	V
: KSB744A		-60	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current (DC)	$I_C$	-3	A
*Collector Current (Pulse)	$I_C$	-5	A
Base Current	$I_B$	-0.6	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	$^\circ\text{C}$



3

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

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -45\text{V}$ , $I_E = 0$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -3\text{V}$ , $I_C = 0$			-1	$\mu\text{A}$
*DC Current Gain	$h_{FE1}$	$V_{CE} = -5\text{V}$ , $I_C = -20\text{mA}$	30	120		
	$h_{FE2}$	$V_{CE} = -5\text{V}$ , $I_C = -0.5\text{A}$	60	100	320	
*Collector Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -1.5\text{A}$ , $I_B = -0.15\text{A}$		-0.5	-2	V
*Base Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -1.5\text{A}$ , $I_B = -0.15\text{A}$		-0.8	-2	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = -5\text{V}$ , $I_C = -0.1\text{A}$		45		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}$ , $I_E = 0$ $f = 1\text{MHz}$		60		pF

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

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

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

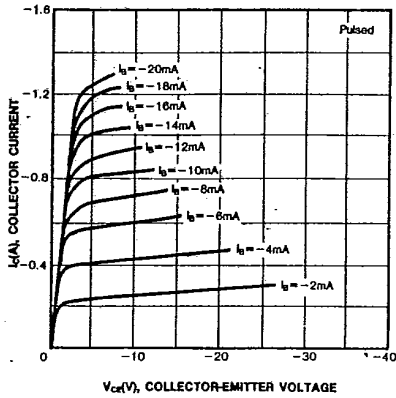


**KSB744/744A**

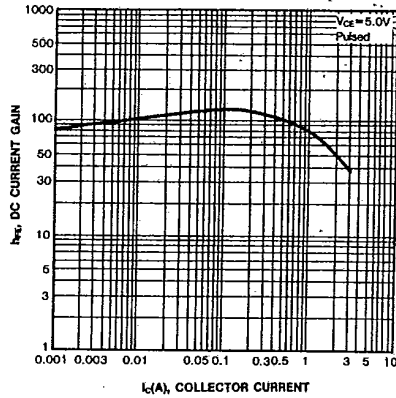
**PNP EXITAXIAL SILICON TRANSISTOR**

T-33-17

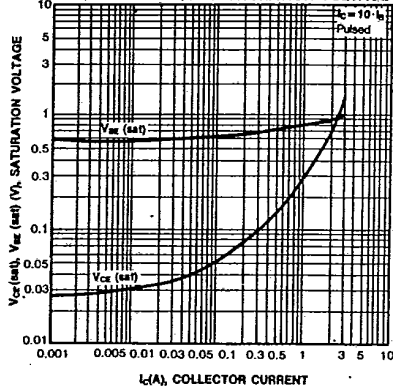
STATIC CHARACTERISTIC



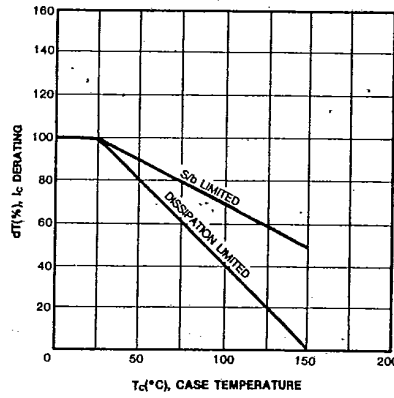
DC CURRENT GAIN



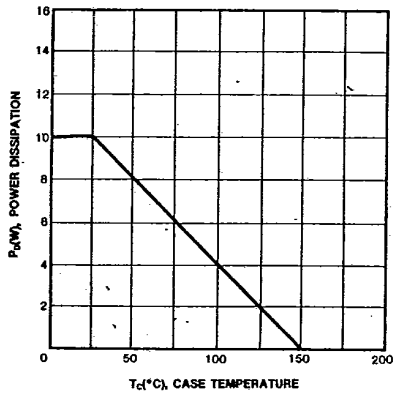
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



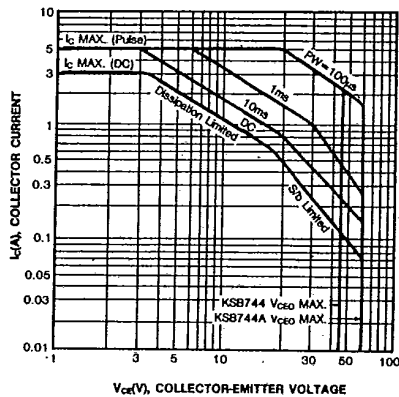
DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



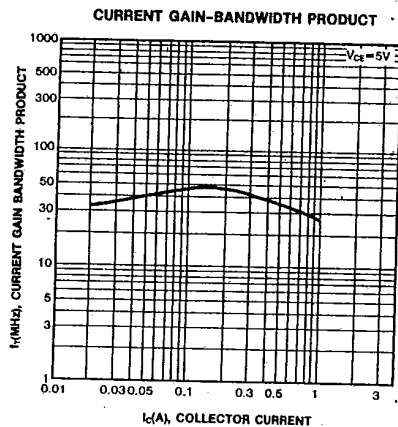
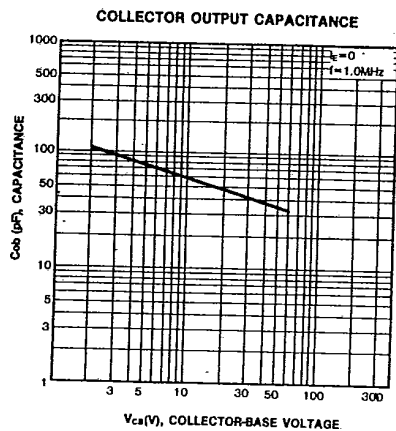
SAFE OPERATING AREA



**KSB744/744A**

**PNP EXITAXIAL SILICON TRANSISTOR**

T-33-17



3