

KSB707**PNP EPITAXIAL SILICON TRANSISTOR**

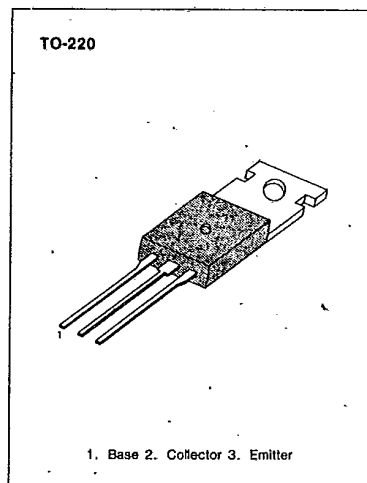
**LOW FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING
INDUSTRIAL USE**

• 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	$^\circ\text{C}$

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



1. Base 2. Collector 3. Emitter

3

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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$		-10	μA
*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	$V_{CE}(\text{sat})$	$I_C = -5\text{A}$, $I_B = -0.5\text{A}$		-0.5	V
*Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -5\text{A}$, $I_B = -0.5\text{A}$		-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

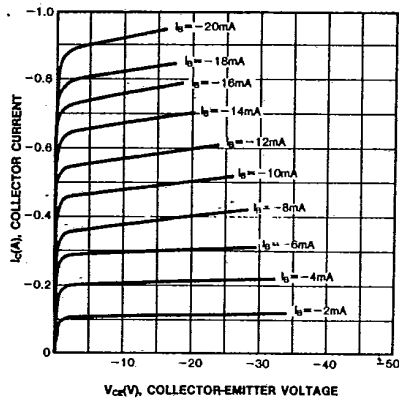


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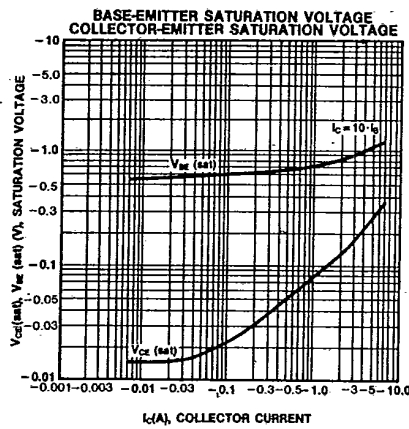
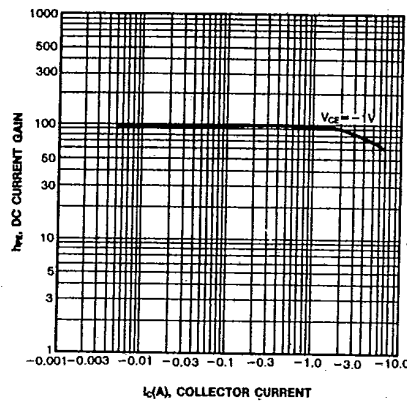
PNP EPITAXIAL SILICON TRANSISTOR

T-33-19

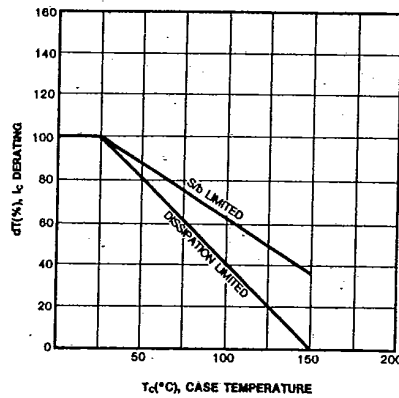
STATIC CHARACTERISTIC



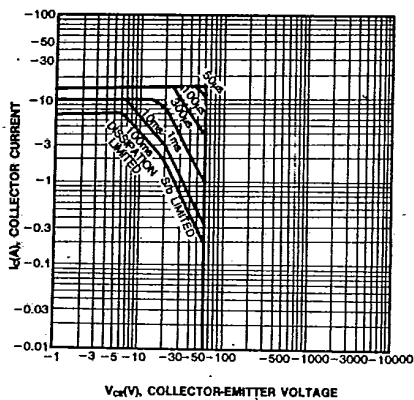
DC CURRENT GAIN



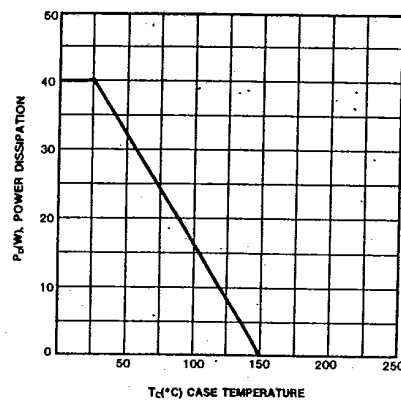
DERATING CURVE OF SAFE OPERATING AREAS



FORWARD BIAS SAFE OPERATING AREA



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

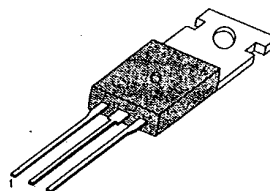
Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = -60\text{V}$, $I_E = 0$		-10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$		-10	μA
* DC Current Gain	h_{FE1}	$V_{CE} = -1\text{V}$, $I_C = -3\text{A}$	40	200	
	h_{FE2}	$V_{CE} = -1\text{V}$, $I_C = -5\text{A}$	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

TO-220



1. Base 2. Collector 3. Emitter

3

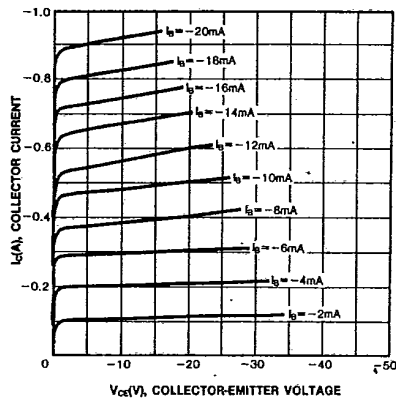


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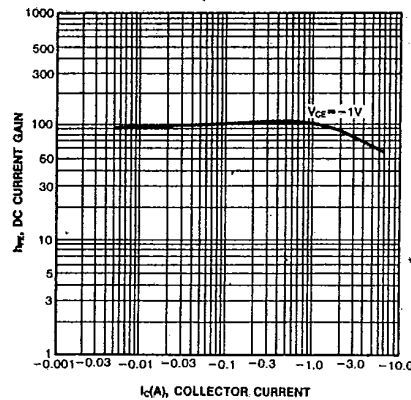
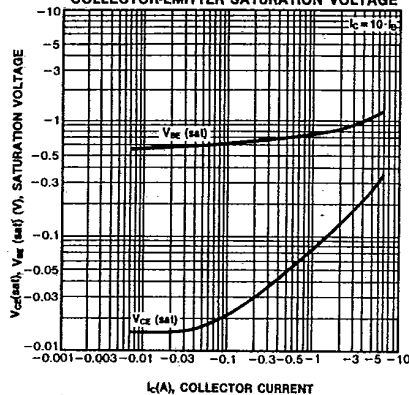
PNP EPITAXIAL SILICON TRANSISTOR

T-33-19

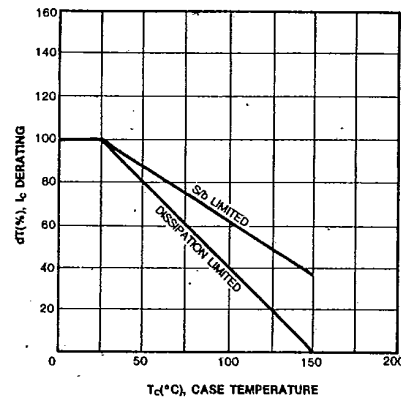
STATIC CHARACTERISTIC



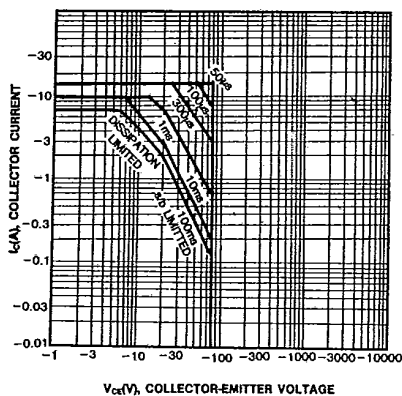
DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

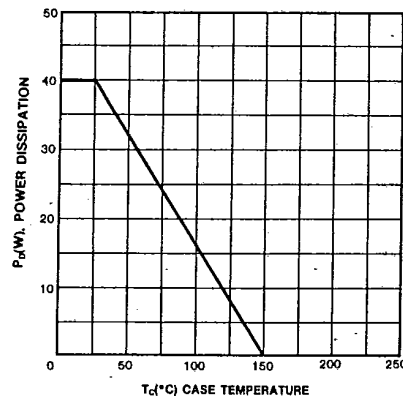
DERATING CURVE OF SAFE OPERATING AREAS



FORWARD BIAS SAFE OPERATING AREA



POWER DERATING



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

T-33-17

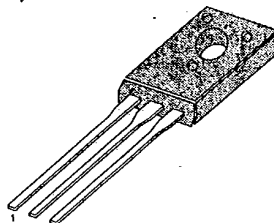
AUDIO FREQUENCY POWER AMPLIFIER

• 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	$^\circ\text{C}$

TO-18



1. Emitter 2. Collector 3. Base

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

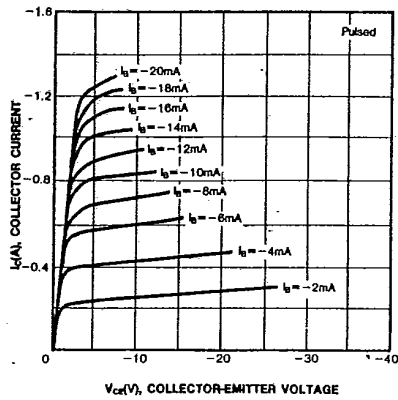


KSB744/744A

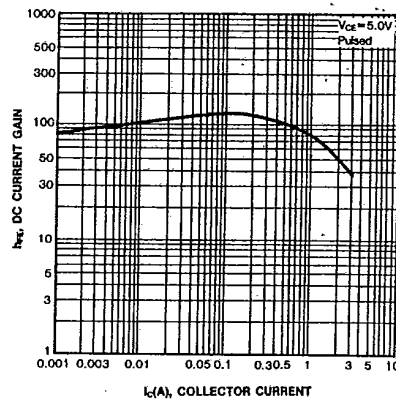
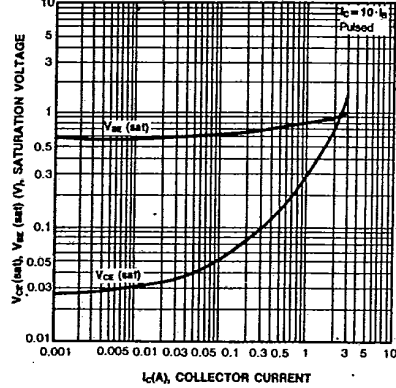
PNP EXITAXIAL SILICON TRANSISTOR

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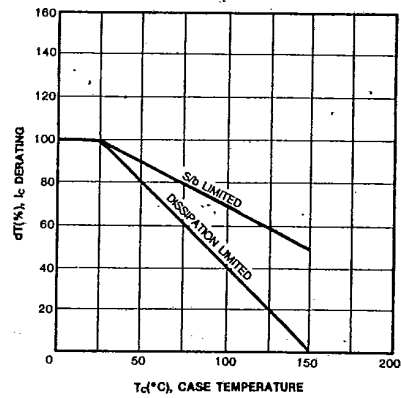
STATIC CHARACTERISTIC



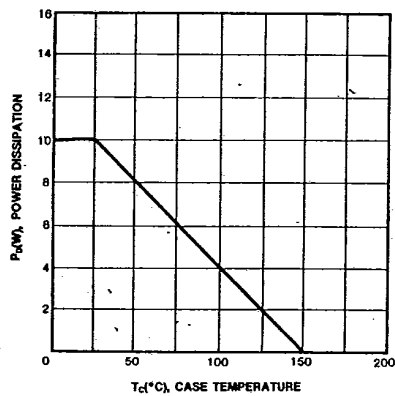
DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

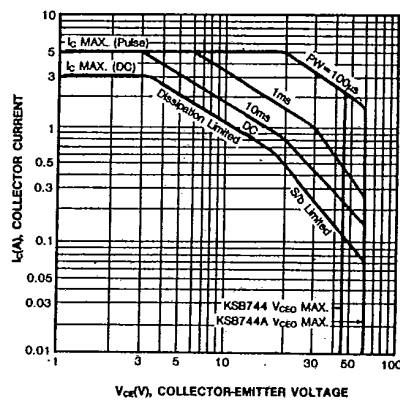
DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING

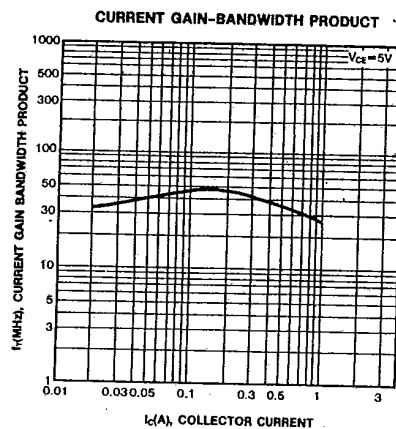
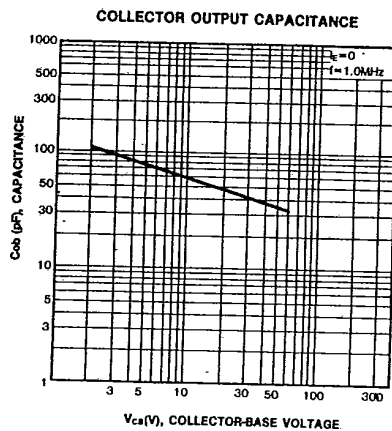


SAFE OPERATING AREA



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

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