

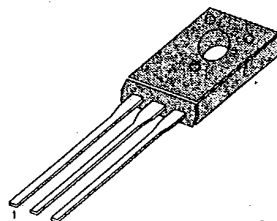
KSA1142**PNP EPITAXIAL SILICON TRANSISTOR****AUDIO FREQUENCY POWER AMPLIFIER
HIGH FREQUENCY POWER AMPLIFIER**

• Complement to KSC2682

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-180	V
Collector-Emitter Voltage	V_{CE0}	-180	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current	I_C	-100	mA
Collector Dissipation ($T_a=25^\circ\text{C}$)	P_C	1.2	W
Collector Dissipation ($T_c=25^\circ\text{C}$)	P_C	8	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

TO-126



1. Emitter 2. Collector 3. Base

3

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

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=-180\text{V}, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-3\text{V}, I_C=0$			-1	μA
• DC Current Gain	h_{FE1}	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$	90	200		
	h_{FE2}	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	100	200	320	
• Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$		-0.16	-0.5	V
• Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$		-0.8	-1.5	V
Current Gain Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-20\text{mA}$		180		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0$ $f=1\text{MHz}$		4.5	7	pF
Noise Figure	NF	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$ $R_s=10\text{k}\Omega, f=1\text{kHz}$		4		dB

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

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

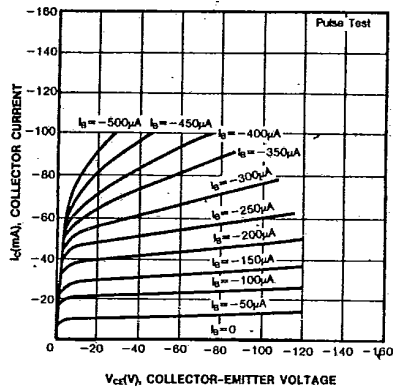


KSA1142

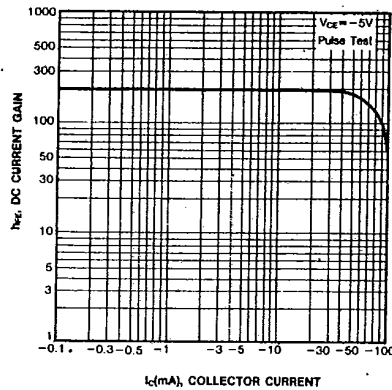
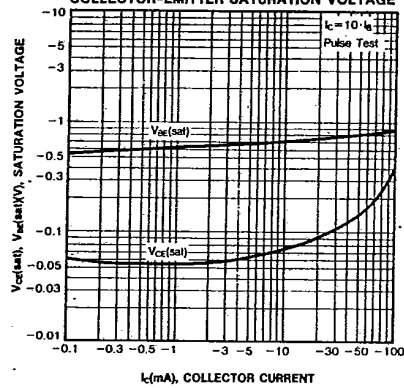
PNP EPITAXIAL SILICON TRANSISTOR

T-33-17

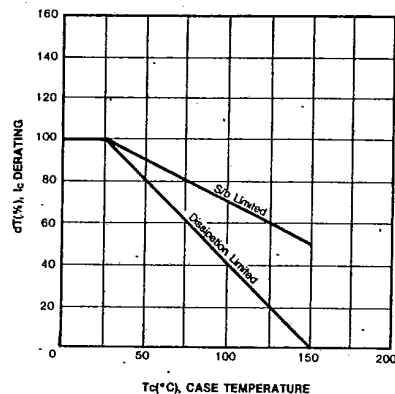
STATIC CHARACTERISTIC



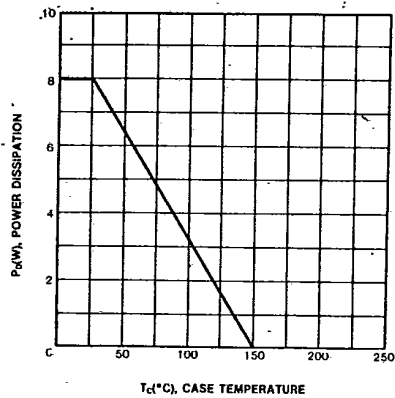
DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

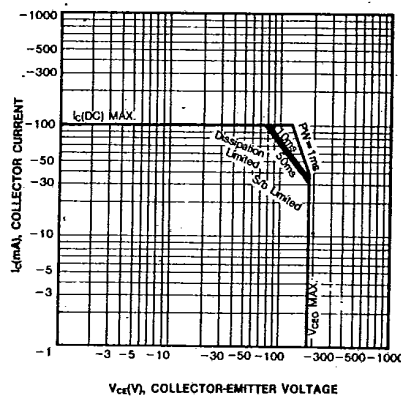
DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



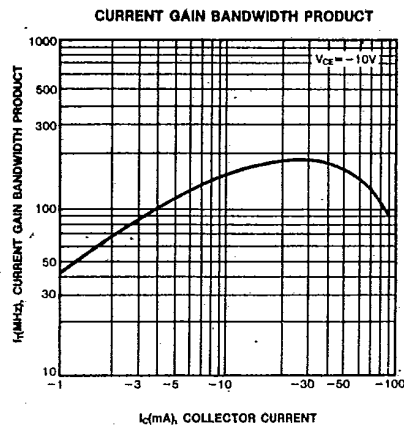
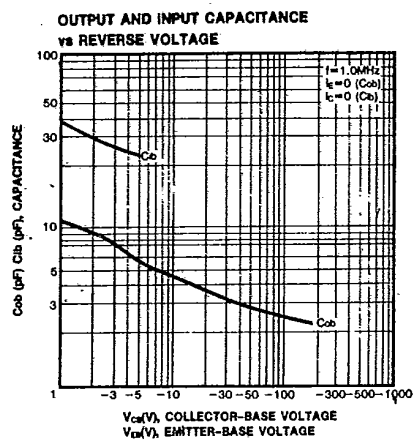
SAFE OPERATING AREA



KSA1142

PNP EPITAXIAL SILICON TRANSISTOR

T-33-17



3



KSA1220/1220A**PNP EXITAXIAL SILICON TRANSISTOR****AUDIO FREQUENCY POWER AMPLIFIER
HIGH FREQUENCY POWER AMPLIFIER**

• Complement to KSC2690/KSC2690A

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : KSA1220	V_{CB0}	-120	V
: KSA1220A		-160	V
Collector-Emitter Voltage : KSA1220	V_{CE0}	-120	V
: KSA1220A		-160	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current (DC)	I_C	-1.2	A
*Collector Current (Pulse)	I_C	-2.5	A
Base Current	I_B	-0.3	A
Collector Dissipation ($T_a = 25^\circ\text{C}$)	P_C	1.2	W
Collector Dissipation ($T_c = 25^\circ\text{C}$)	P_C	20	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

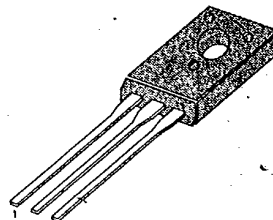
• $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$ **ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = -120\text{V}$, $I_E = 0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			-1	μA
*DC Current Gain	h_{FE1}	$V_{CE} = -5\text{V}$, $I_C = -5\text{mA}$	35	150		
	h_{FE2}	$V_{CE} = -5\text{V}$, $I_C = -0.3\text{A}$	60	140	320	
*Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1\text{A}$, $I_B = -0.2\text{A}$		-0.4	-0.7	V
*Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1\text{A}$, $I_B = -0.2\text{A}$		-1	-1.3	V
Current Gain Bandwidth Product	f_T	$V_{CE} = -5\text{V}$, $I_C = -0.2\text{A}$		175		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$		26		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

TO-126



1. Emitter 2. Collector 3. Base

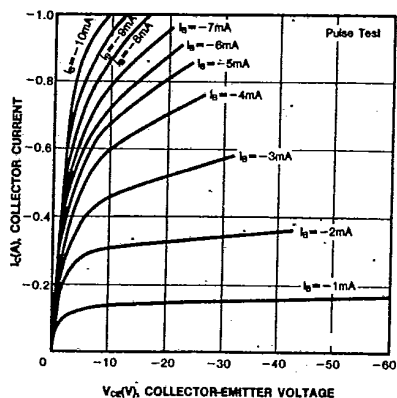


KSA1220/1220A

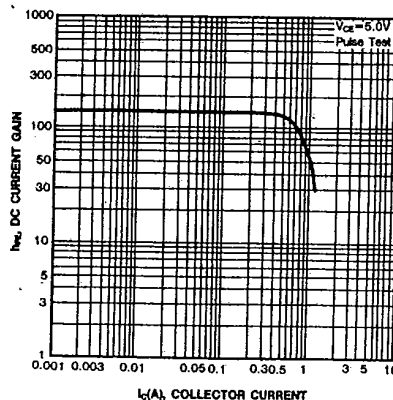
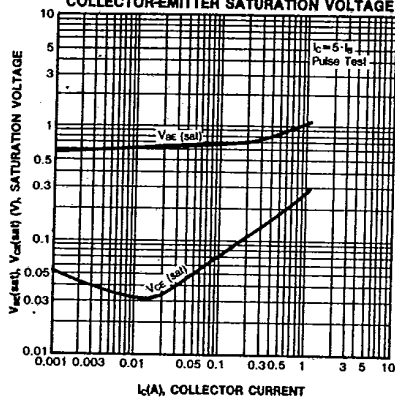
PNP EXITAXIAL SILICON TRANSISTOR

T-33-19

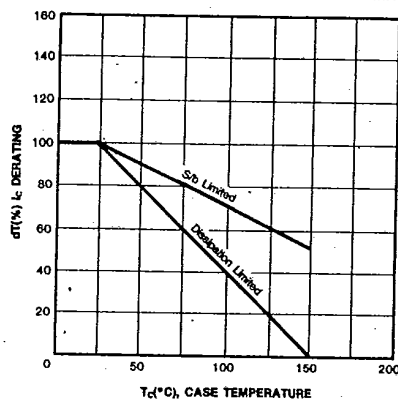
STATIC CHARACTERISTIC



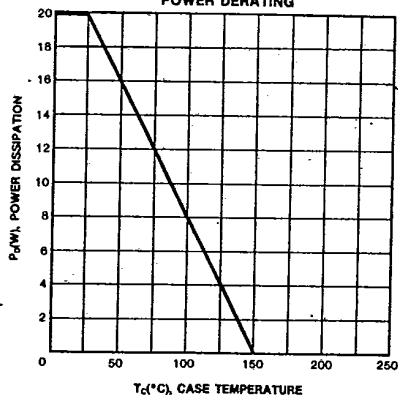
DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

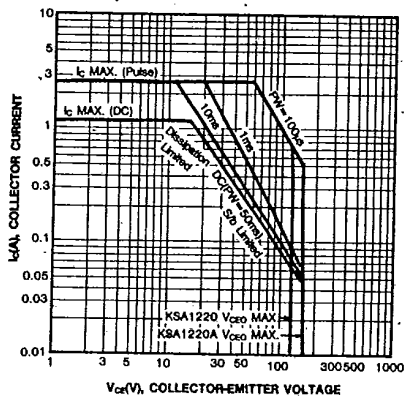
DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



SAFE OPERATING AREA



3



KSA1220/1220A**PNP EXITAXIAL SILICON TRANSISTOR**

T-33-19

