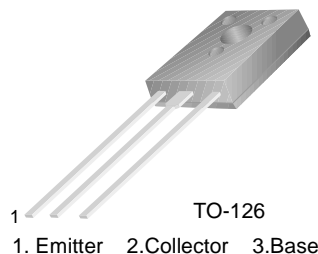


# KSA1220/1220A

## Audio Frequency Power Amplifier High Frequency Power Amplifier

- Complement to KSC2690/KSC2690A



## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage : KSA1220 : KSA1220A	- 120 - 160	V V
$V_{CEO}$	Collector-Emitter Voltage : KSA1220 : KSA1220A	- 120 - 160	V V
$V_{EBO}$	Emitter-Base Voltage	- 5	V
$I_C$	Collector Current (DC)	- 1.2	A
$I_{CP}$	*Collector Current (Pulse)	- 2.5	A
$I_B$	Base Current	- 0.3	A
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1.2	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	20	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

\*  $PW \leq 10\text{ms}$ , Duty Cycles  $\leq 50\%$

### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

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

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

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE2}$	60 ~ 120	100 ~ 200	160 ~ 320

## Typical Characteristics

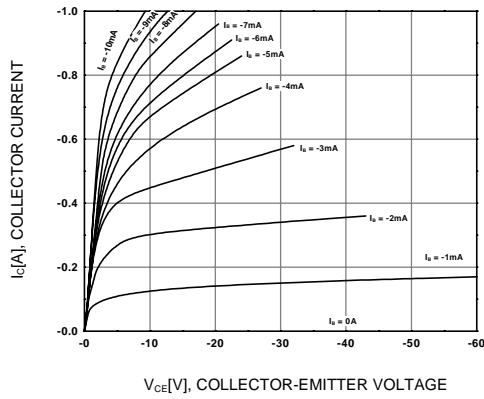


Figure 1. Static Characteristic

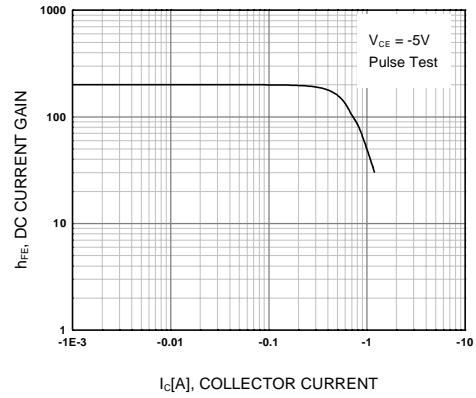


Figure 2. DC current Gain

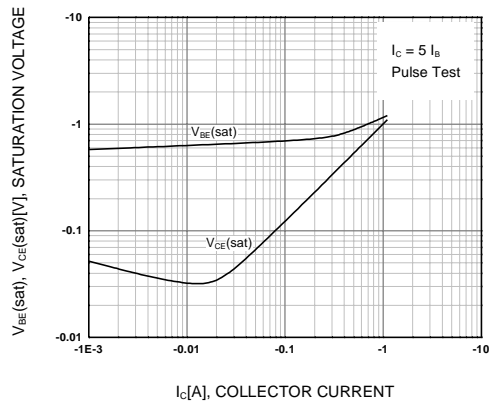


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

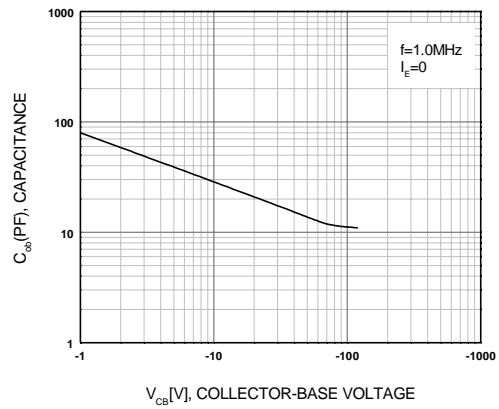


Figure 4. Collector Output Capacitance

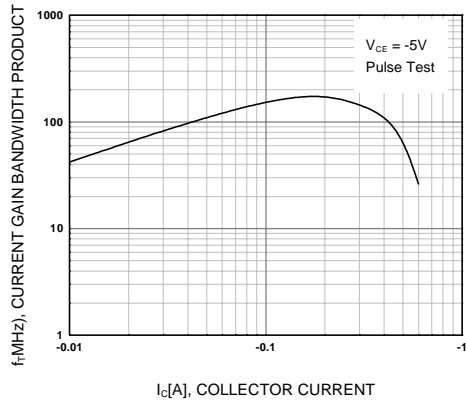


Figure 5. Current Gain Bandwidth Product

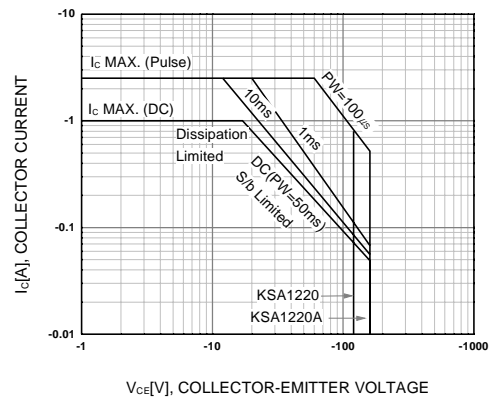


Figure 6. Safe Operating Area

## Typical Characteristics (Continued)

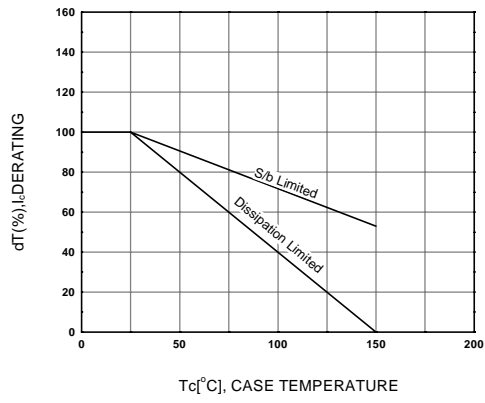


Figure 7. Derating Curve of Safe Operating Areas

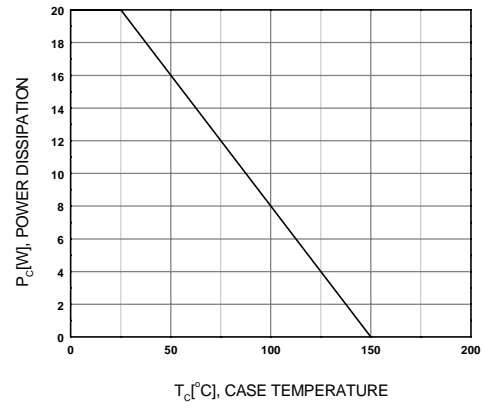
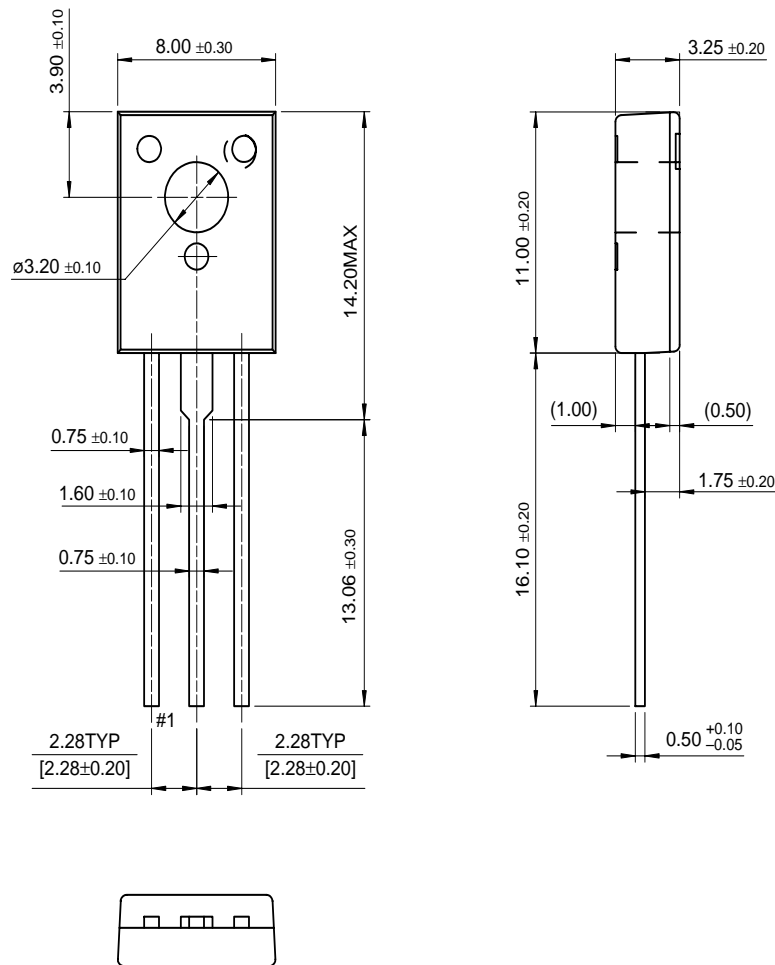


Figure 8. Power Derating

# Package Dimensions

KSA1220/1220A

## TO-126



Dimensions in Millimeters

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