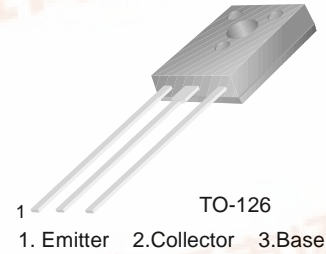


**FAIRCHILD**  
SEMICONDUCTOR®

## 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	- 120	V
		: KSA1220A	- 160	V
$V_{CEO}$	Collector-Emitter Voltage	: KSA1220	- 120	V
		: KSA1220A	- 160	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 Cycle  $\leq 2\%$  Pulsed

#### $h_{FE}$ Classification

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



# Typical Characteristics

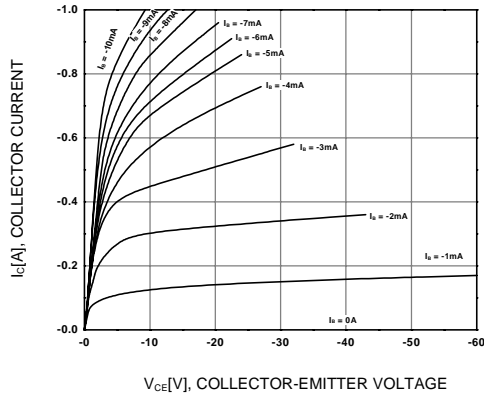


Figure 1. Static Characteristic

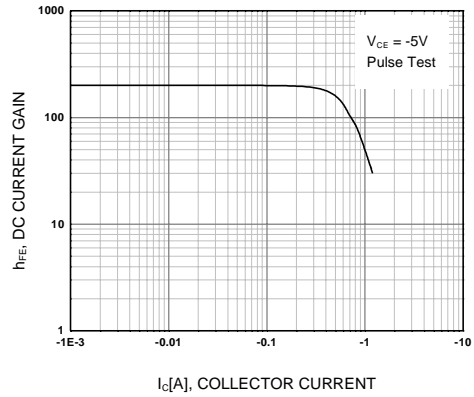


Figure 2. DC current Gain

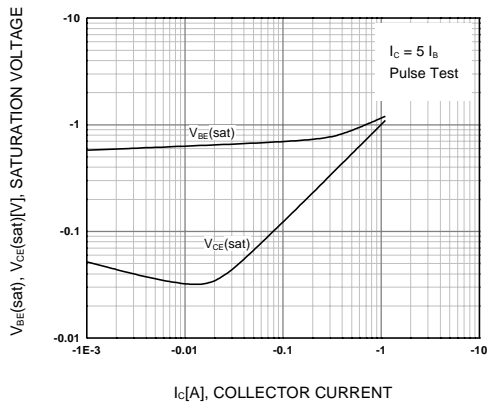


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

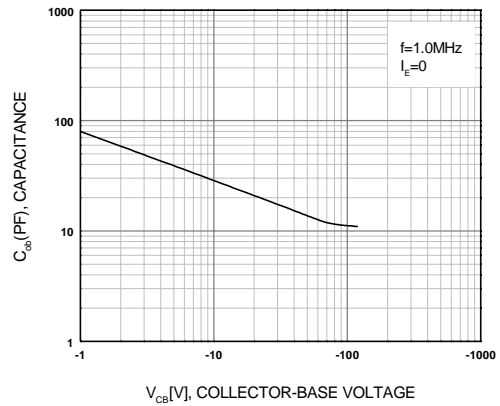


Figure 4. Collector Output Capacitance

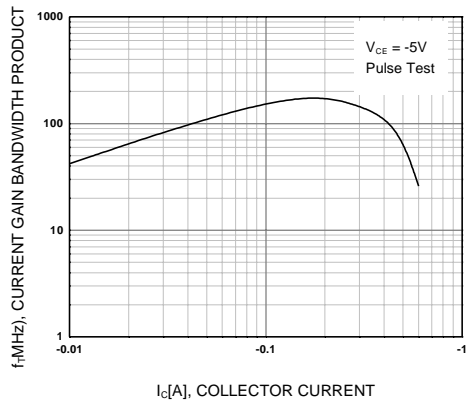


Figure 5. Current Gain Bandwidth Product

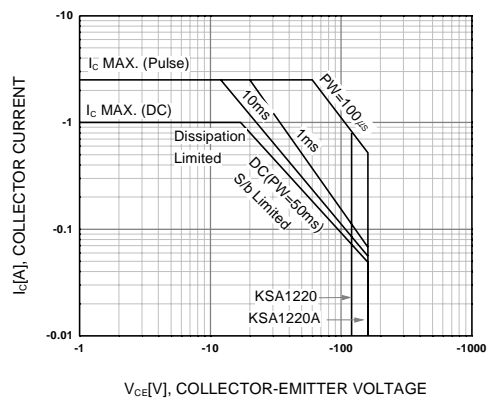


Figure 6. Safe Operating Area

### Typical Characteristics (Continued)

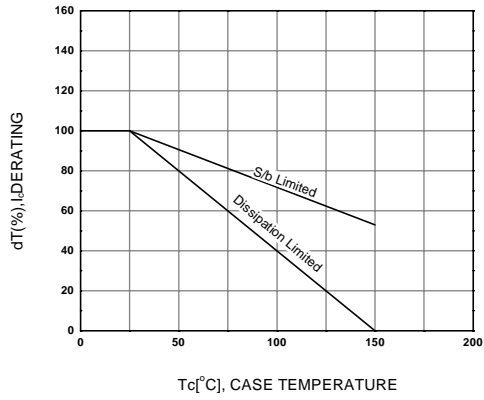


Figure 7. Derating Curve of Safe Operating Areas

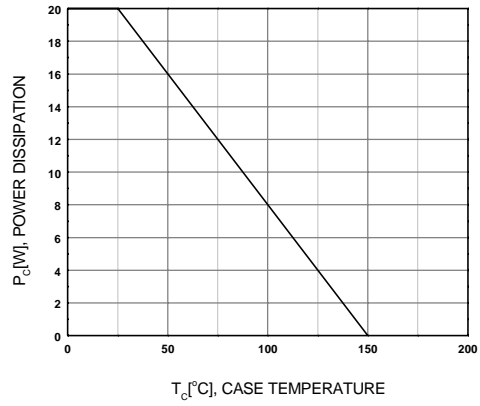
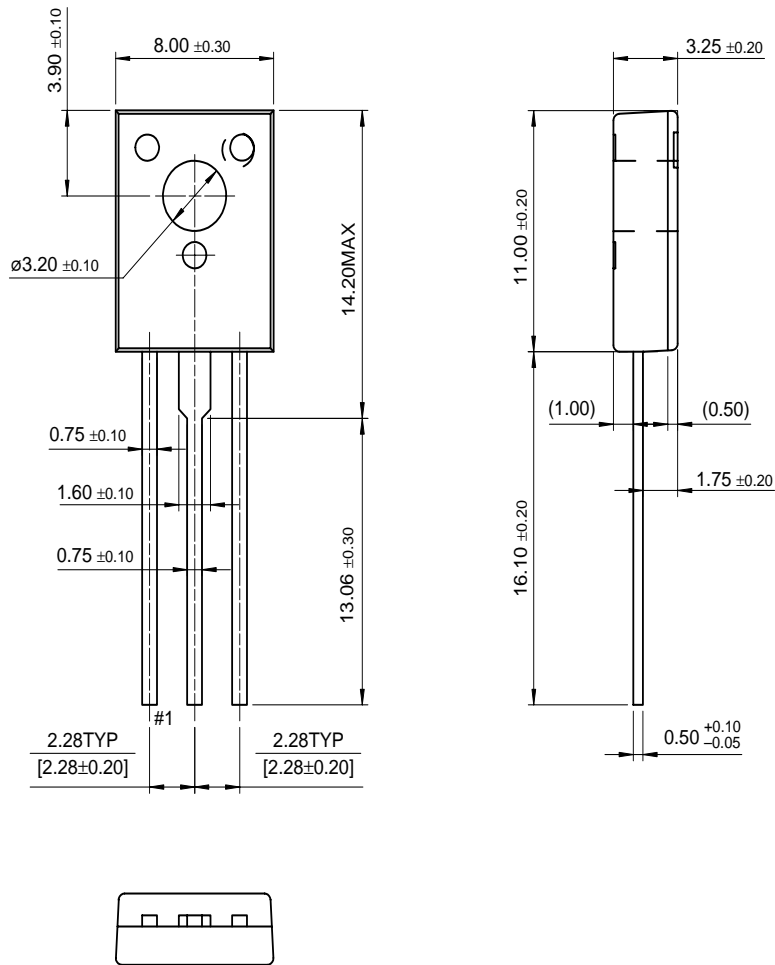


Figure 8. Power Derating

# Package Dimensions

## TO-126

KSA1220/1220A



Dimensions in Millimeters

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E <sup>2</sup> CMOS™	LittleFET™	QT Optoelectronics™	TinyLogic™
EnSigna™	MicroFET™	Quiet Series™	UHC™
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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