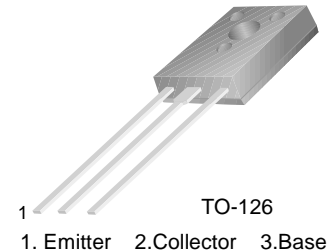


KSA1220/1220A

Audio Frequency Power Amplifier High Frequency Power Amplifier

- Complement to KSC2690/KSC2690A



KSA1220/1220A

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
		: KSA1220A	- 160
V_{CEO}	Collector-Emitter Voltage	: KSA1220	- 120
		: KSA1220A	- 160
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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -3\text{V}$, $I_C = 0$			- 1	μA
h_{FE1}	* DC Current Gain	$V_{CE} = -5\text{V}$, $I_C = -5\text{mA}$	35	150		
h_{FE2}		$V_{CE} = -5\text{V}$, $I_C = -0.3\text{A}$	60	140	320	
$V_{CE(sat)}$	* 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

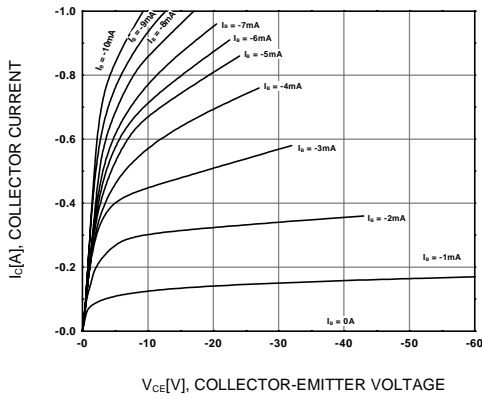


Figure 1. Static Characteristic

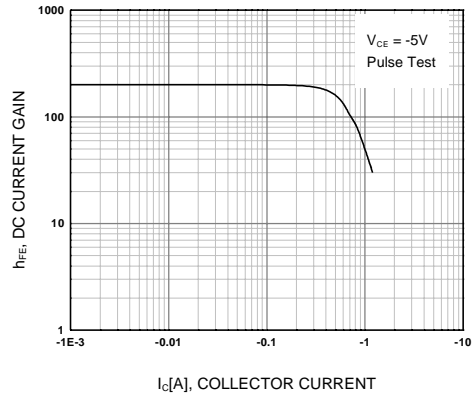


Figure 2. DC current Gain

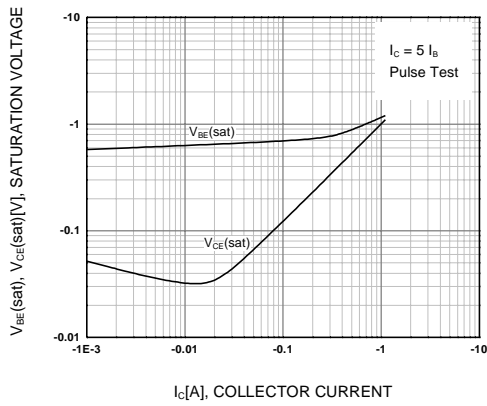


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

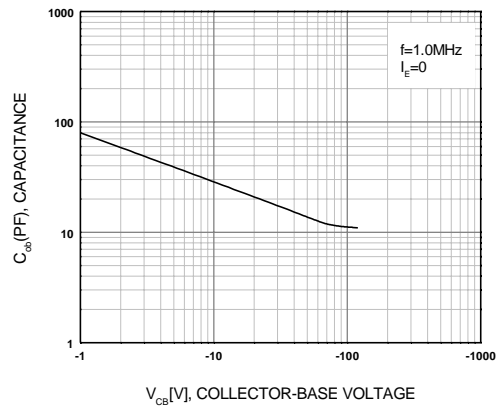


Figure 4. Collector Output Capacitance

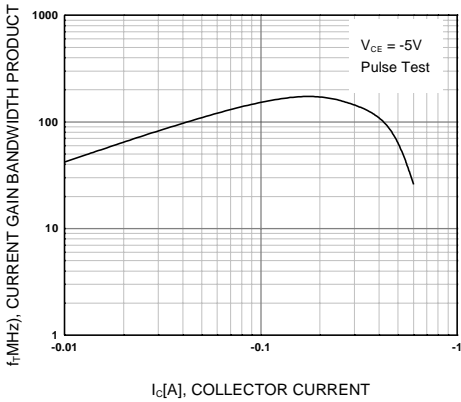


Figure 5. Current Gain Bandwidth Product

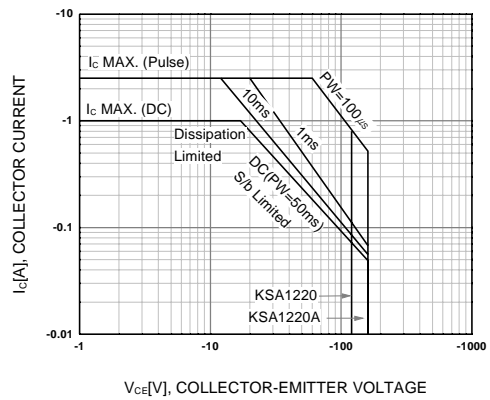


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

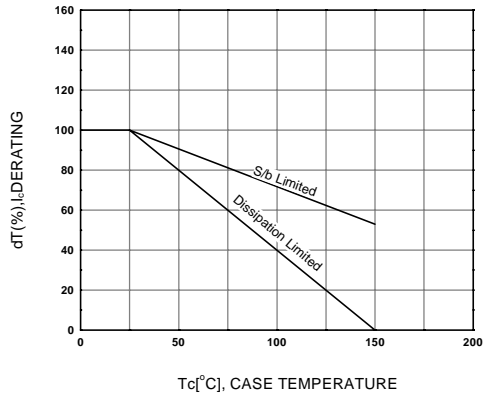


Figure 7. Derating Curve of Safe Operating Areas

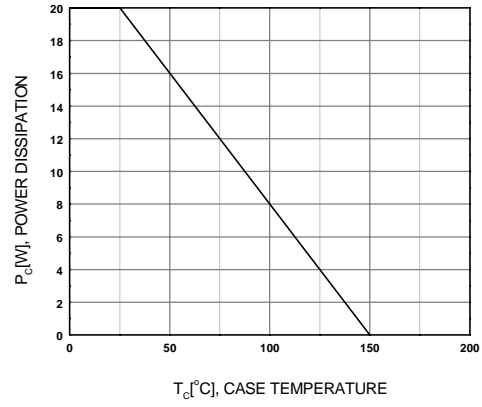


Figure 8. Power Derating

Package Dimensions

TO-126

KSA1220/1220A



Dimensions in Millimeters

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E ² CMOS™	LittleFET™	QT Optoelectronics™	TinyLogic™
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