

# KSA1142

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## Audio Frequency Power Amplifier High Frequency Power Amplifier

- Complement to KSC2682



## 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	- 180	V
$V_{CEO}$	Collector-Emitter Voltage	- 180	V
$V_{EBO}$	Emitter-Base Voltage	- 5	V
$I_C$	Collector Current	- 100	mA
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1.2	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	8	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

### 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	$V_{CB} = - 180\text{V}, I_E = 0$			- 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	$V_{CE} = - 5\text{V}, I_C = - 1\text{mA}$ $V_{CE} = - 5\text{V}, I_C = - 10\text{mA}$	90 100	200 200	320	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 50\text{mA}, I_B = - 5\text{mA}$		- 0.16	- 0.5	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = - 50\text{mA}, I_B = - 5\text{mA}$		- 0.8	- 1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = - 10\text{V}, I_C = - 20\text{mA}$		180		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = - 10\text{V}, I_E = 0, f=1\text{MHz}$		4.5	7	pF
NF	Noise Figure	$V_{CE} = - 10\text{V}, I_C = - 1\text{mA}$ $R_S = 10\text{k}\Omega, f = 1\text{MHz}$		4		dB

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

### $h_{FE}$ Classification

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

# Typical Characteristics

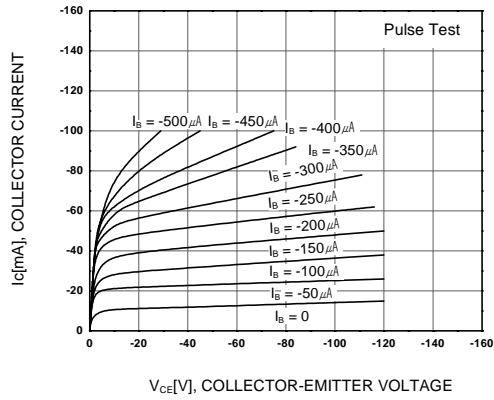


Figure 1. Static Characteristic

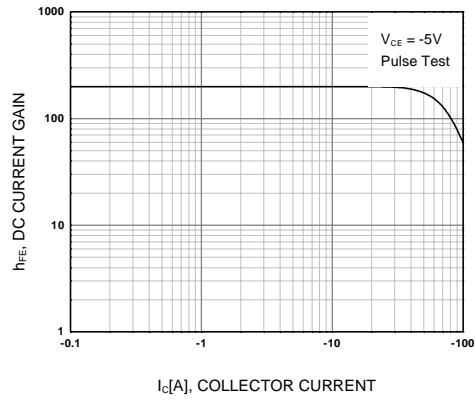


Figure 2. DC current Gain

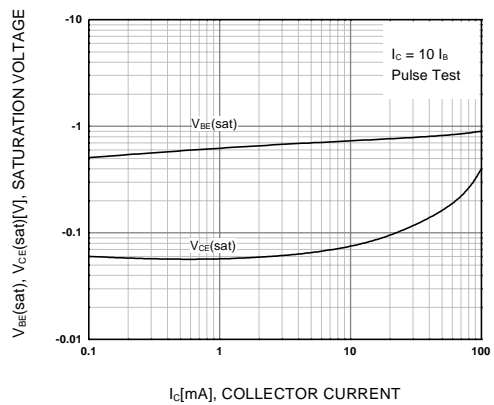


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

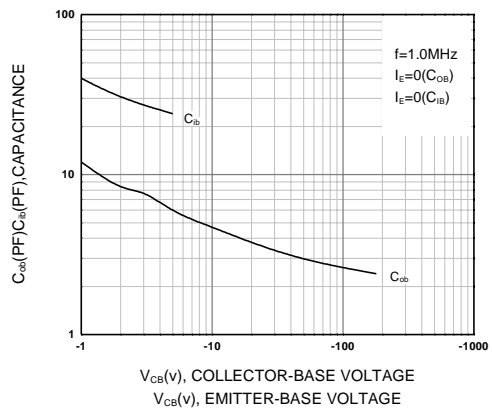


Figure 4. Collector Output Capacitance

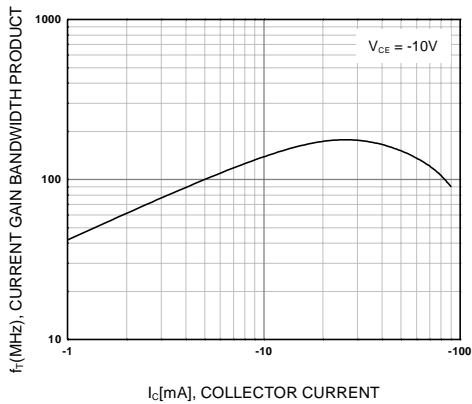


Figure 5. Current Gain Bandwidth Product

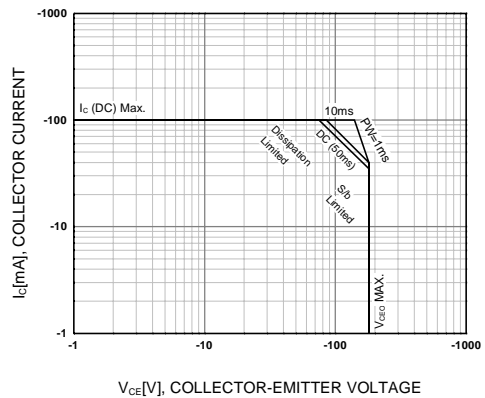


Figure 6. Safe Operating Area

# Typical Characteristics (Continued)

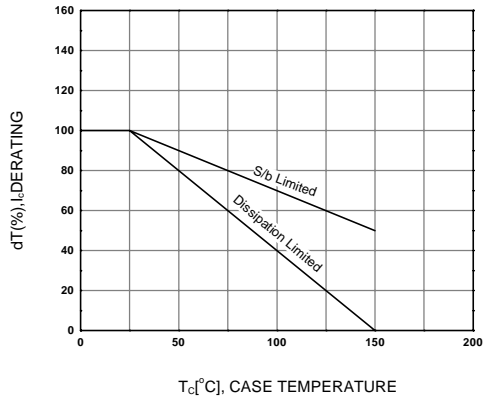


Figure 7. Derating Curve of Safe Operating Areas

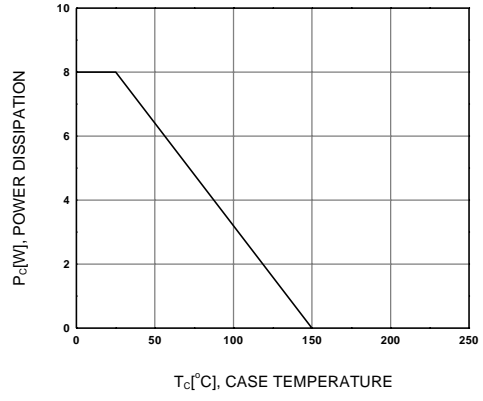


Figure 8. Power Derating

# Package Dimensions

KSA1142

## TO-126



Dimensions in Millimeters

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FAST®	Quiet Series™	
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