

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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -3\text{V}, I_C = 0$			- 1	μA
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

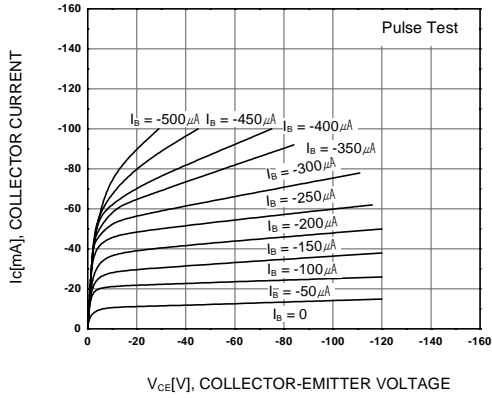


Figure 1. Static Characteristic

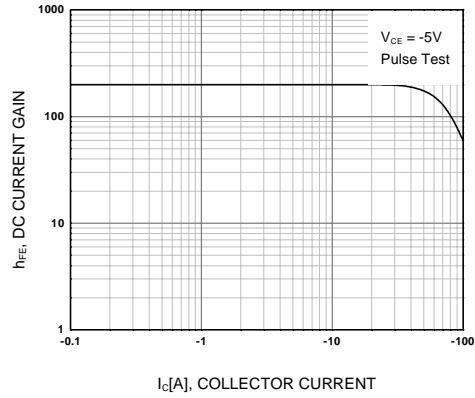


Figure 2. DC current Gain

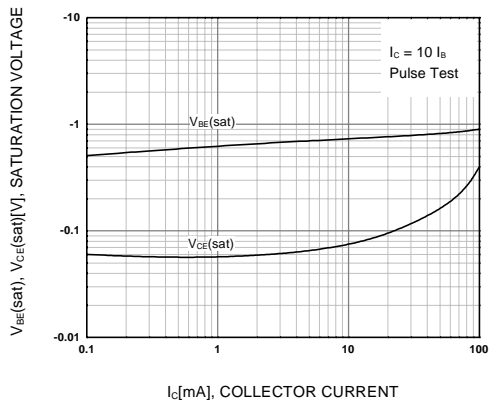


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

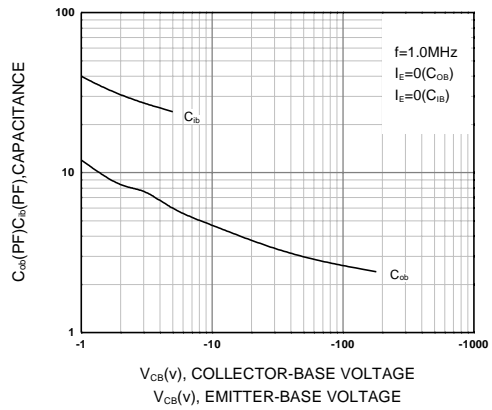


Figure 4. Collector Output Capacitance

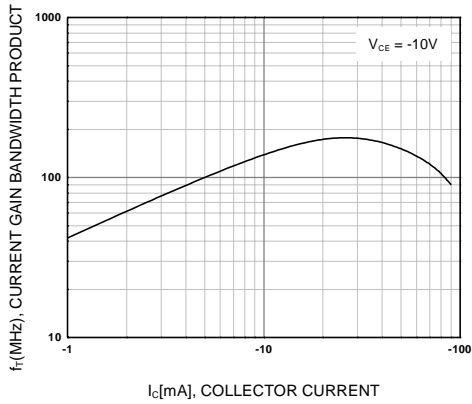


Figure 5. Current Gain Bandwidth Product

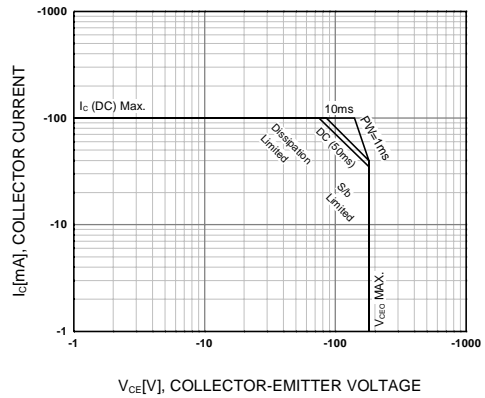


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

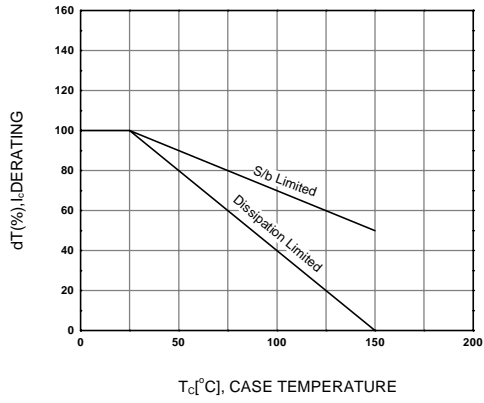


Figure 7. Derating Curve of Safe Operating Areas

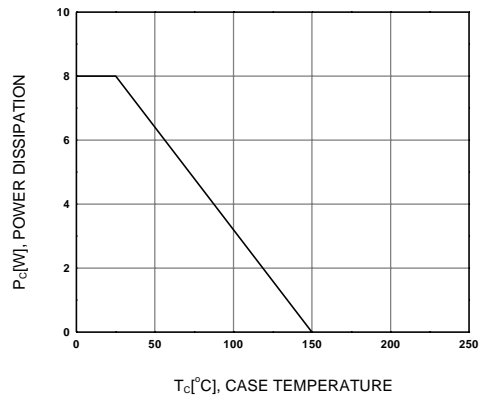


Figure 8. Power Derating

Package Dimensions

KSA1142

TO-126



Dimensions in Millimeters

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FASTr™	SuperSOT™-3	
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