

KSA1142

KSA1142

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

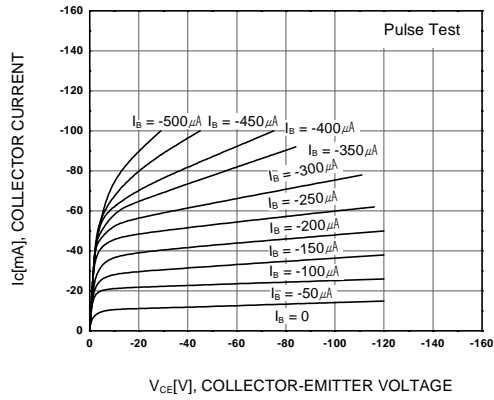


Figure 1. Static Characteristic

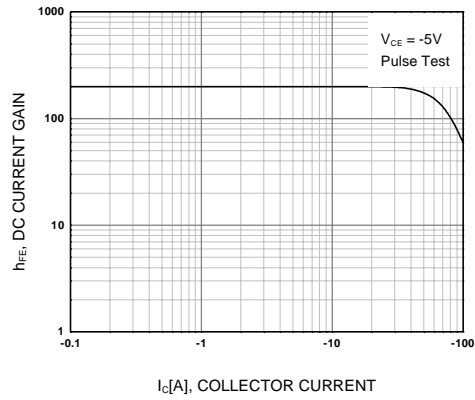


Figure 2. DC current Gain

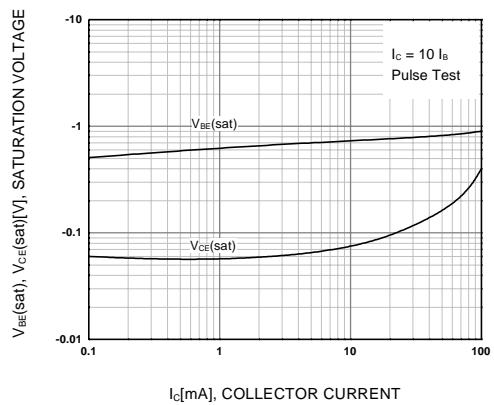


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

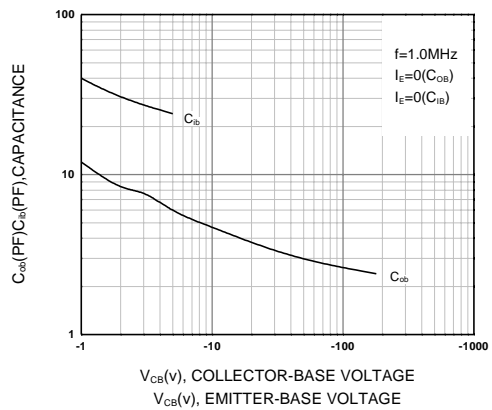


Figure 4. Collector Output Capacitance

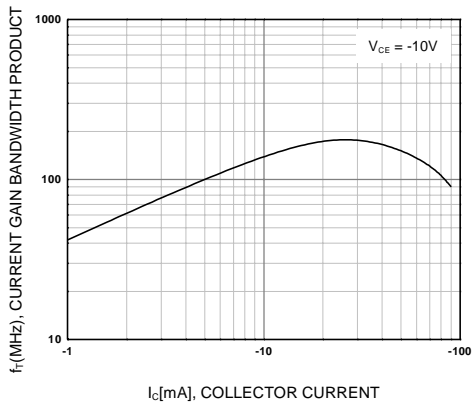


Figure 5. Current Gain Bandwidth Product

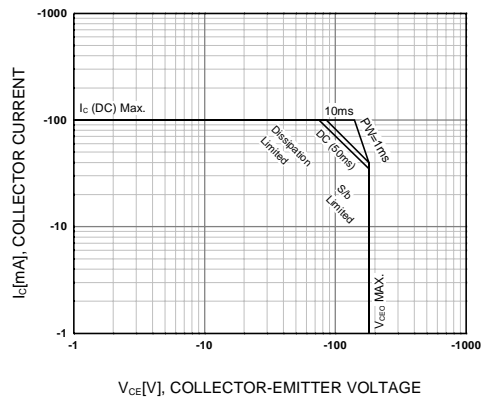


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

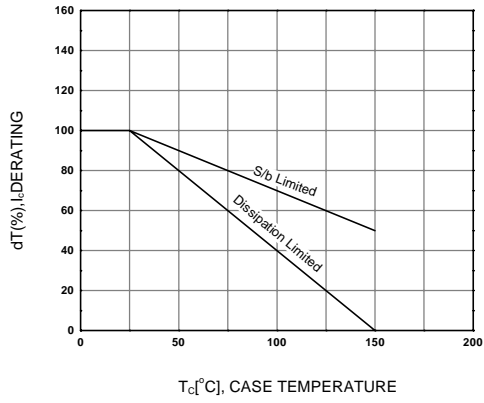


Figure 7. Derating Curve of Safe Operating Areas

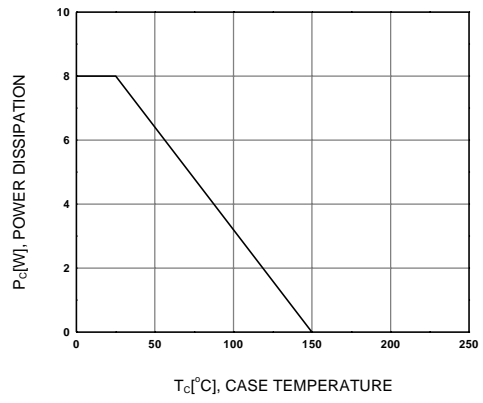


Figure 8. Power Derating

Package Dimensions

KSA1142

TO-126



Dimensions in Millimeters

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Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSA1142OSTU	Full Production	Full Production	\$0.151	TO-126	3	RAIL	Line 1: \$Y (Fairchild logo) &3 (3-Digit Date Code) Line 3: A1142-O
KSA1142YSTU	Full Production	Full Production	\$0.151	TO-126	3	RAIL	Line 1: \$Y (Fairchild logo) &3 (3-Digit Date Code) Line 3: A1142-Y

* Fairchild 1,000 piece Budgetary Pricing

** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a [Fairchild distributor](#) to obtain samples



Indicates product with Pb-free second-level interconnect. For more information [click here](#).

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