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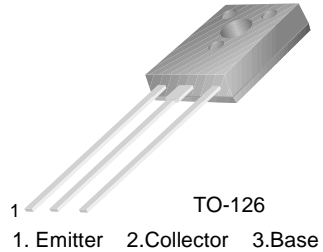


# KSA1142

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	$\mu\text{A}$
$I_{EBO}$	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

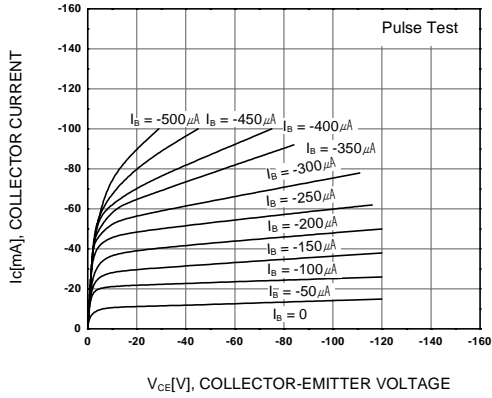


Figure 1. Static Characteristic

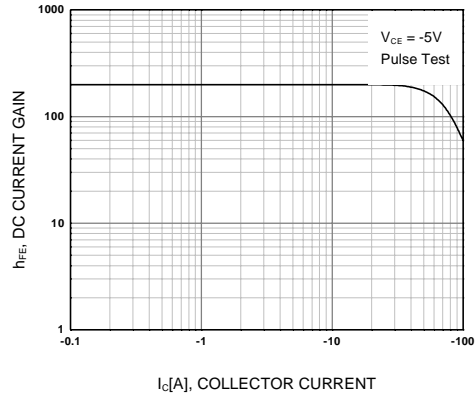


Figure 2. DC current Gain

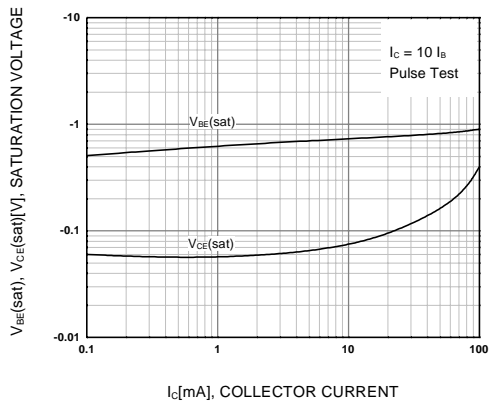


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

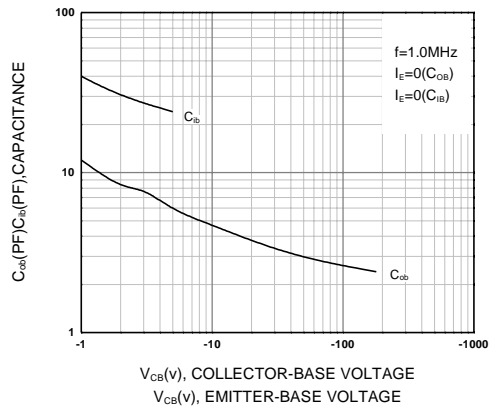


Figure 4. Collector Output Capacitance

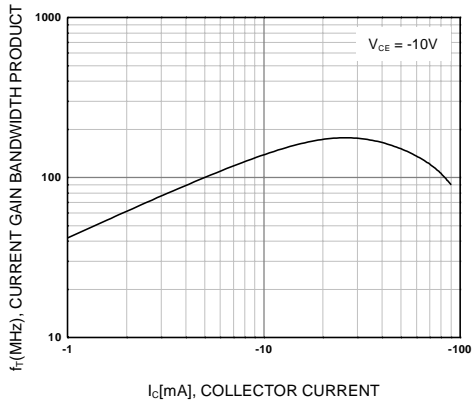


Figure 5. Current Gain Bandwidth Product

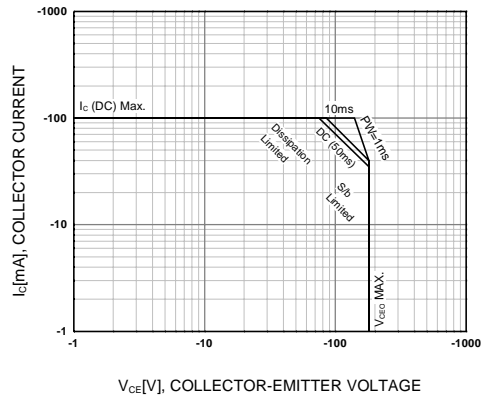


Figure 6. Safe Operating Area

# Typical Characteristics (Continued)

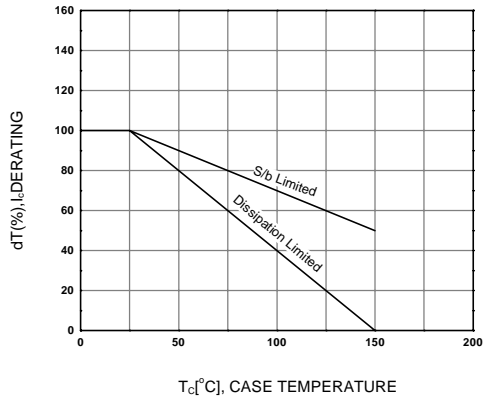


Figure 7. Derating Curve of Safe Operating Areas

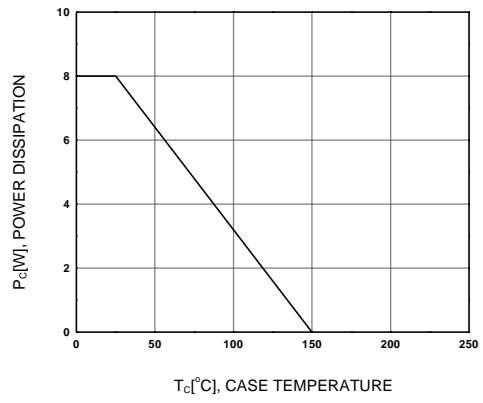
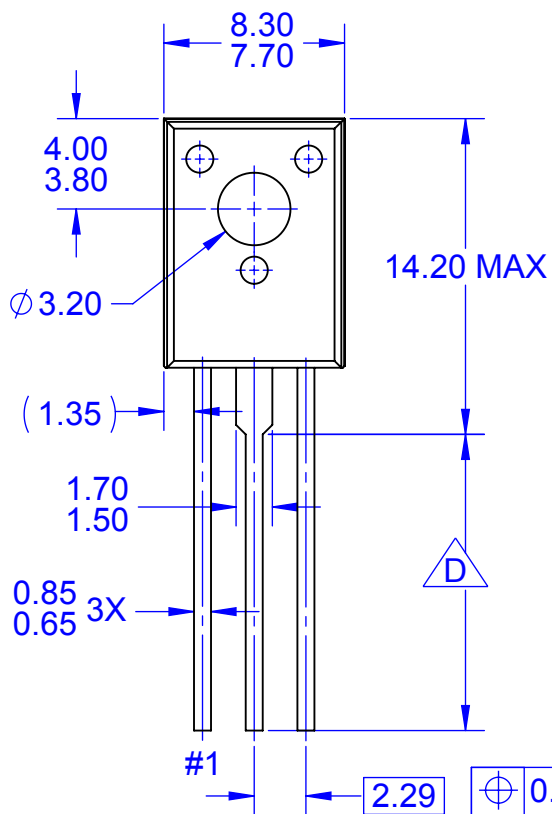
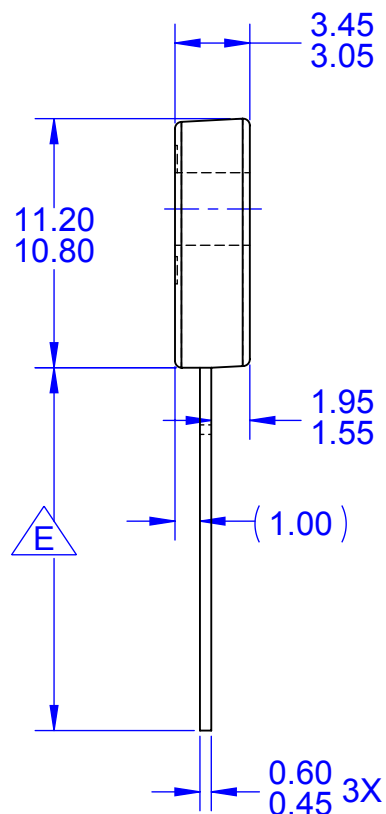


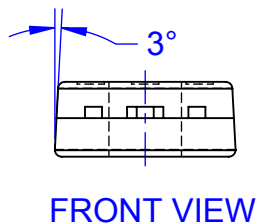
Figure 8. Power Derating



TOP VIEW



SIDE VIEW



FRONT VIEW

PRODUCTION CODE	TERMINAL LENGTH "D"	TERMINAL LENGTH "E"
TSSTU	3.45 - 4.05	6.45-7.45
TSTU	2.36 - 2.96	5.36-6.36
NONE (STD LENGTH)	12.76 - 13.36	15.76-16.76

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- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

$\triangle D$  FOR TERMINAL LENGTH "D", REFER TO TABLE

$\triangle E$  FOR TERMINAL LENGTH "E", REFER TO TABLE

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