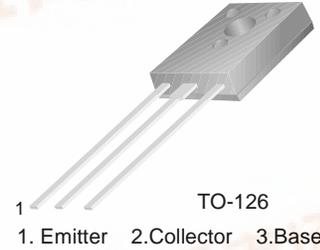


**FAIRCHILD**  
SEMICONDUCTOR™

## KSC2682

### Audio Frequency Power Amplifier

- Complement to KSA1142



### NPN Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	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	$V_{CB} = 180\text{V}, I_E = 0$			1.0	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 3\text{V}, I_C = 0$			1.0	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$	* 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	190 200	320	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 50\text{mA}, I_B = 5\text{mA}$		0.12	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	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$		200		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$		3.2	5.0	pF
NF	Noise Figure	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$ $R_S = 10\text{K}\Omega, f = 1\text{kHz}$		4		dB

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

#### $h_{FE}$ Classification

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



# Typical Characteristics

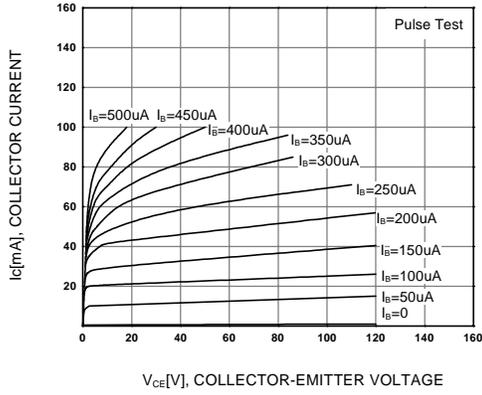


Figure 1. Static Characteristic

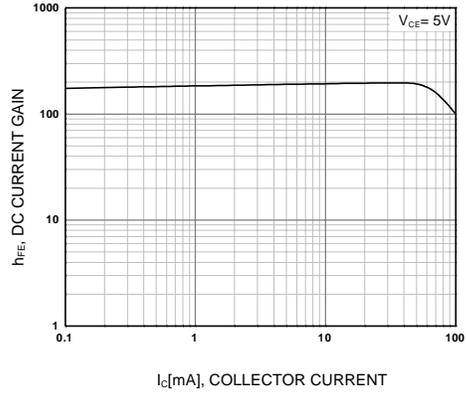


Figure 2. DC current Gain

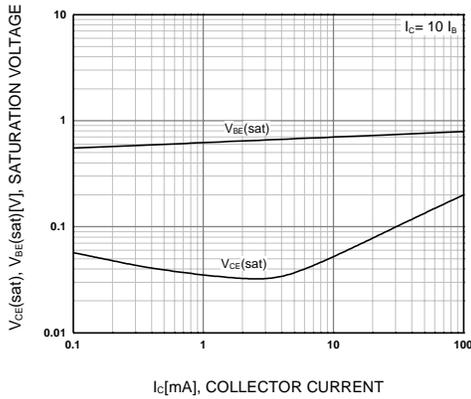


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

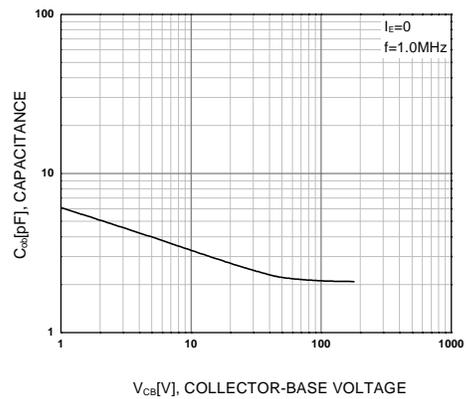


Figure 4. Collector Output Capacitance

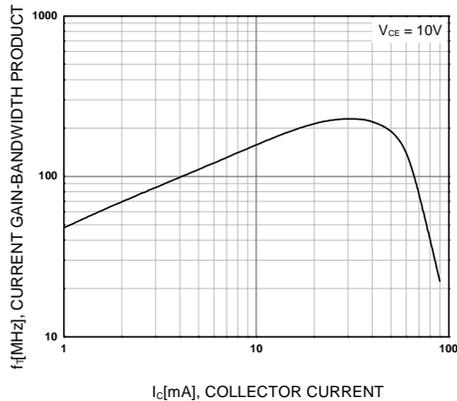


Figure 5. Current Gain Bandwidth Product

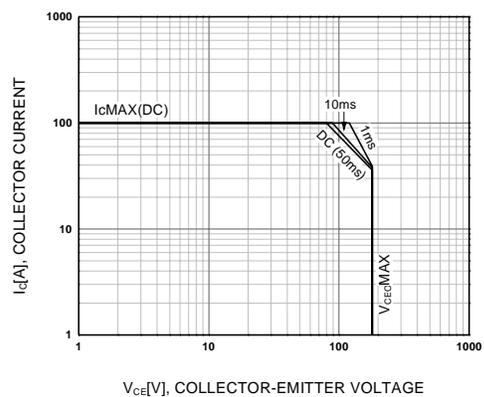


Figure 6. Safe Operating Area

### Typical Characteristics (Continued)

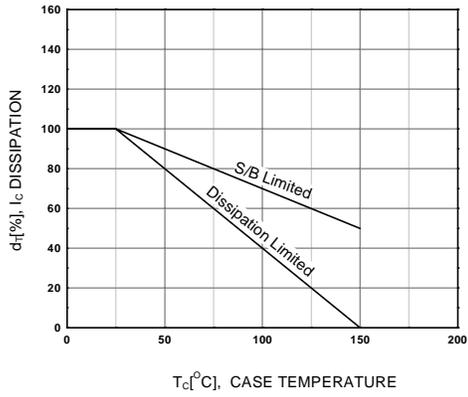


Figure 7. Derating Curve of Safe Operating Area

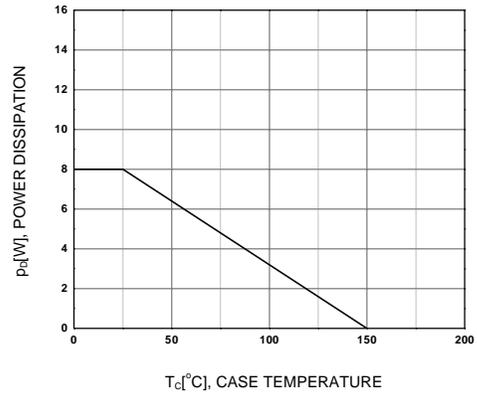
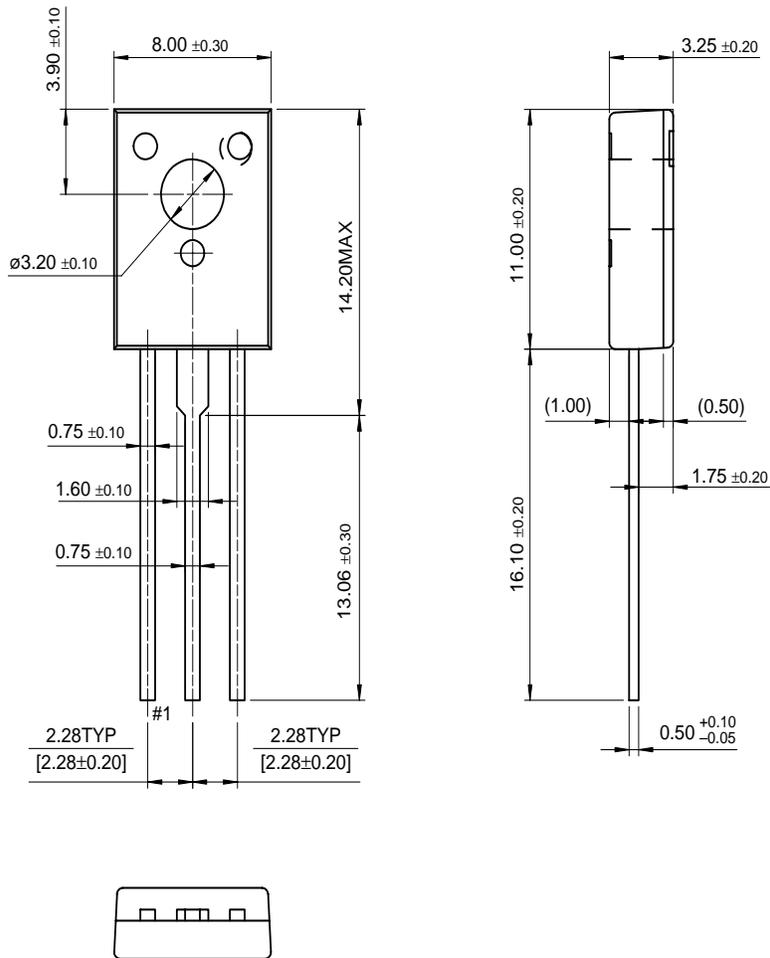


Figure 8. Power Derating

# Package Demensions

## TO-126



Dimensions in Millimeters

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E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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