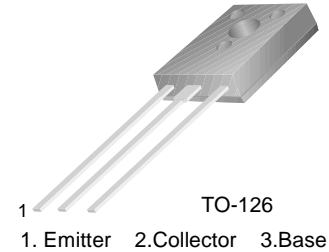


# KSC2690/2690A

## Audio Frequency High Frequency Power Amplifier

- Complement to KSA1220/KSA1220A



## 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	120	V
		160	V
$V_{CEO}$	Collector- Emitter Voltage	120	V
		160	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	1.2	A
$I_{CP}$	*Collector Current (Pulse)	2.5	A
$I_B$	Base Current(DC)	0.3	A
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1.2	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	20	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

\*  $PW \leq 10\text{ms}$ , Duty Cycles  $\leq 50\%$

### 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	$V_{CB} = 120\text{V}$ , $I_E = 0$			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	$V_{CE} = 5\text{V}$ , $I_C = 5\text{mA}$ $V_{CE} = 5\text{V}$ , $I_C = 0.3\text{A}$	35 60	105 140	320	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 1\text{A}$ , $I_B = 0.2\text{A}$		0.4	0.7	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 1\text{A}$ , $I_B = 0.2\text{A}$		1	1.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}$ , $I_C = 0.2\text{A}$		155		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$		19		pF

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

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE2}$	60 ~ 120	100 ~ 200	160 ~ 320

## Typical Characteristics

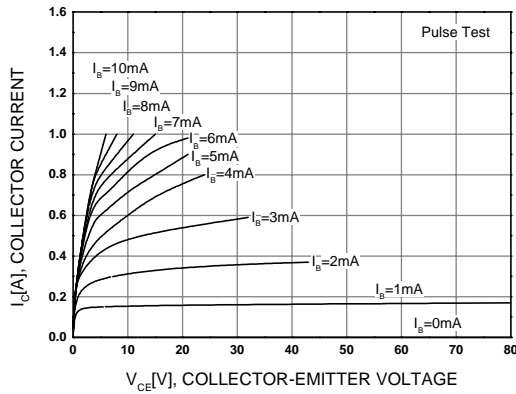


Figure 1. Static Characteristic

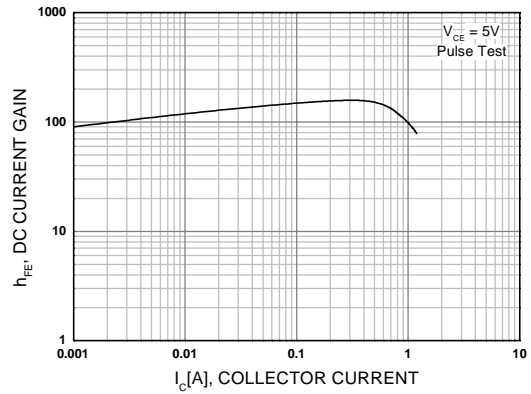


Figure 2. DC current Gain

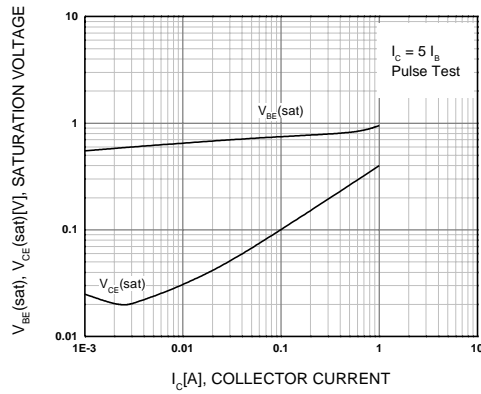


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

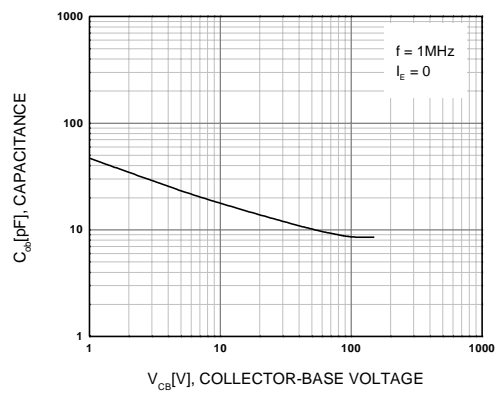


Figure 4. Collector Output Capacitance

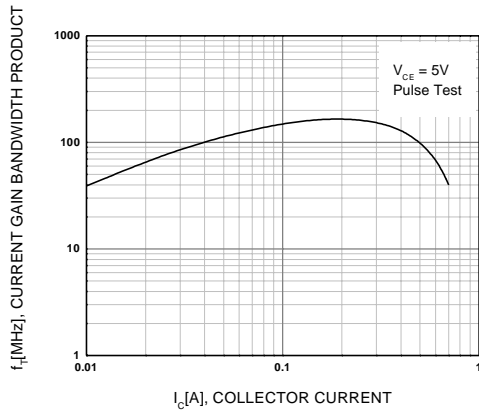


Figure 5. Current Gain Bandwidth Product

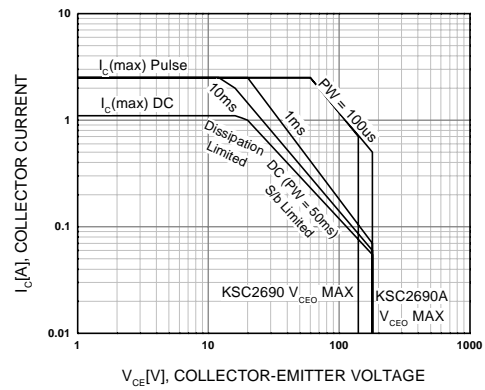


Figure 6. Safe Operating Area

## Typical Characteristics (Continued)

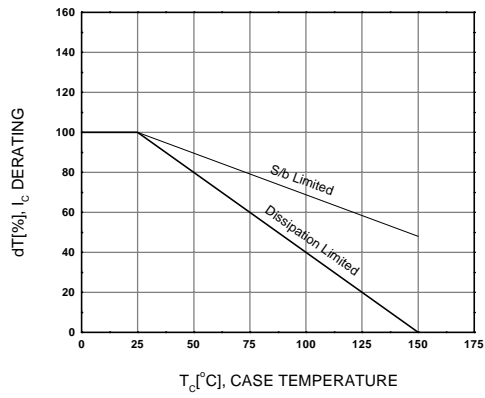


Figure 7. Derating Curve of Safe Operating Areas

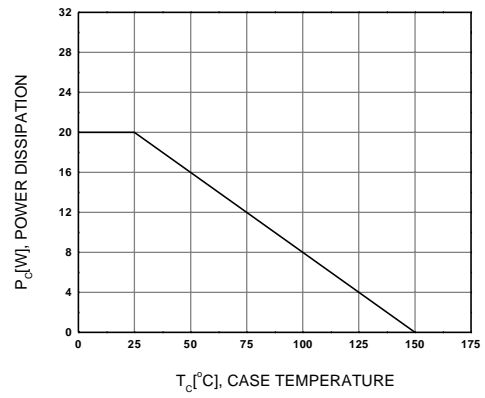
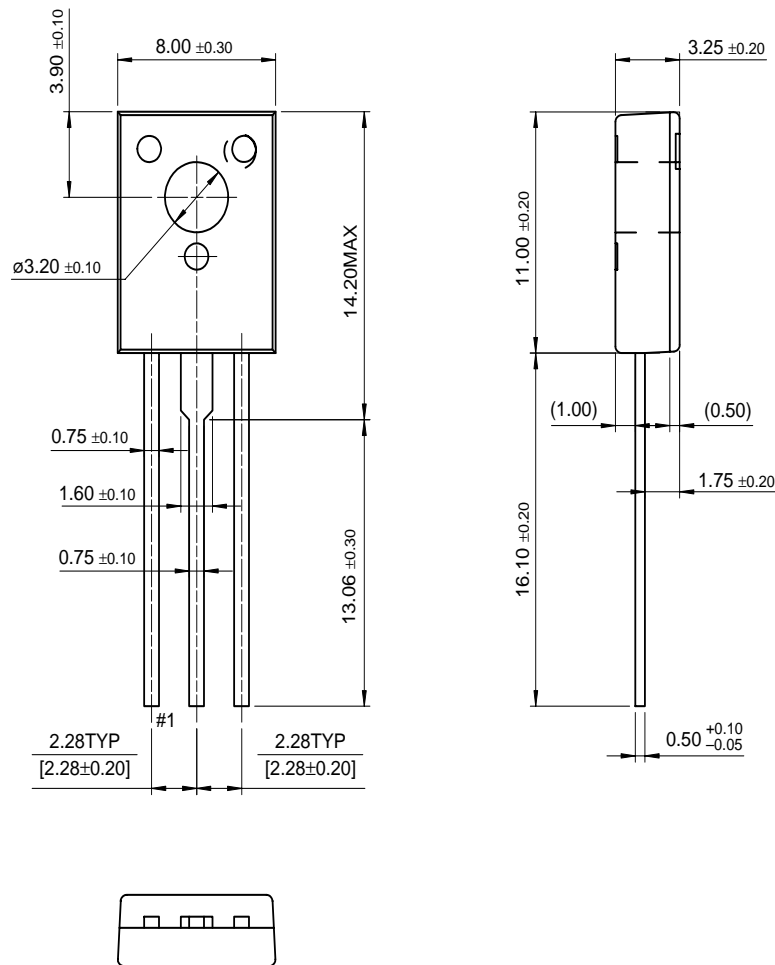


Figure 8. Power Derating

# Package Dimensions

KSC2690/2690A

## TO-126



Dimensions in Millimeters

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E <sup>2</sup> CMOS™	PowerTrench®	VCX™
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## PRODUCT STATUS DEFINITIONS

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Datasheet Identification	Product Status	Definition
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KSC2690A

NPN Epitaxial Silicon Transistor

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Product	Product status	Pricing*	Package type	Leads	Packing method
KSC2690AYS	Full Production	\$0.22	<a href="#">TO-126</a>	3	BULK
KSC2690AOS	Full Production	\$0.22	<a href="#">TO-126</a>	3	BULK
KSC2690AOSTSTU	Full Production	\$0.22	<a href="#">TO-126</a>	3	RAIL
KSC2690AYSTSTU	Full Production	\$0.22	<a href="#">TO-126</a>	3	RAIL
KSC2690AYSTU	Full Production	\$0.22	<a href="#">TO-126</a>	3	RAIL

\* 1,000 piece Budgetary Pricing

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Models

Package & leads	Condition	Temperature range	Software version	Revision date

PSPICE				
TO-126-3	<a href="#">Electrical/Thermal</a>	-25°C to 100°C	9	Mar 30, 2000

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