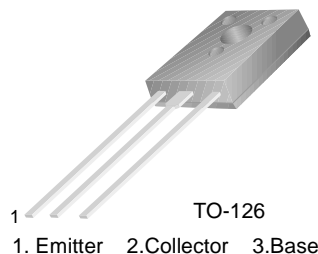


KSC2690/2690A

Audio Frequency High Frequency Power Amplifier

- Complement to KSA1220/KSA1220A



KSC2690/2690A

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		
	: KSC2690	120	V
	: KSC2690A	160	V
V_{CEO}	Collector- Emitter Voltage		
	: KSC2690	120	V
	: KSC2690A	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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 3\text{V}$, $I_C = 0$			1	μA
h_{FE1} h_{FE2}	* DC Current Gain	$V_{CE} = 5\text{V}$, $I_C = 5\text{mA}$ $V_{CE} = 5\text{V}$, $I_C = 0.3\text{A}$	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

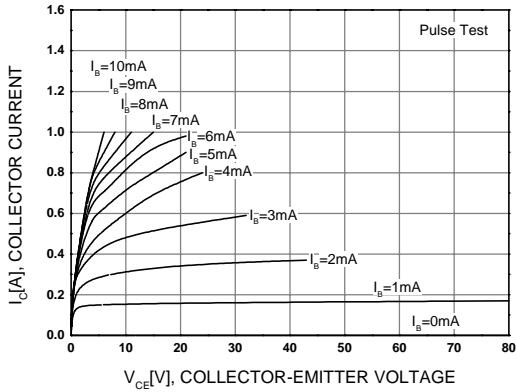


Figure 1. Static Characteristic

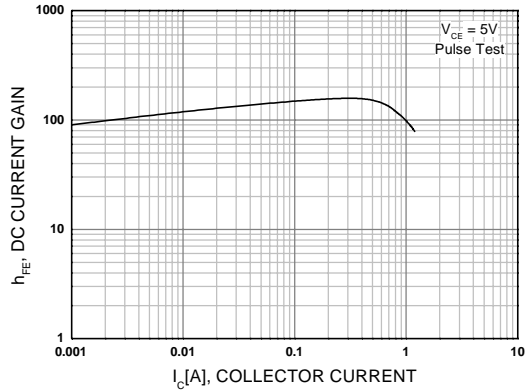


Figure 2. DC current Gain

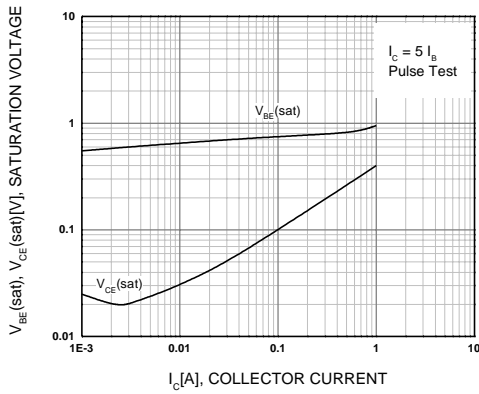


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

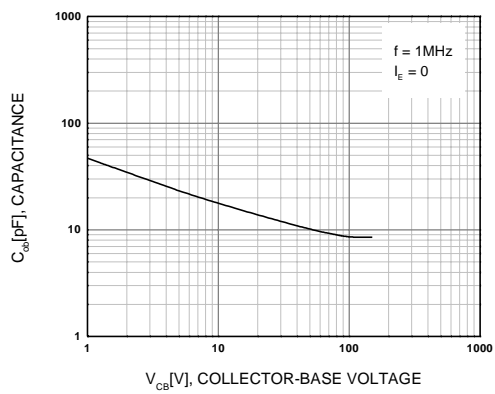


Figure 4. Collector Output Capacitance

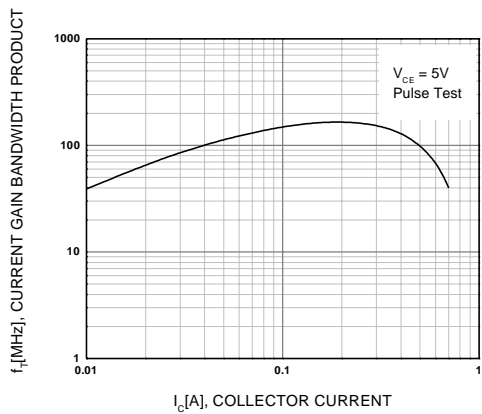


Figure 5. Current Gain Bandwidth Product

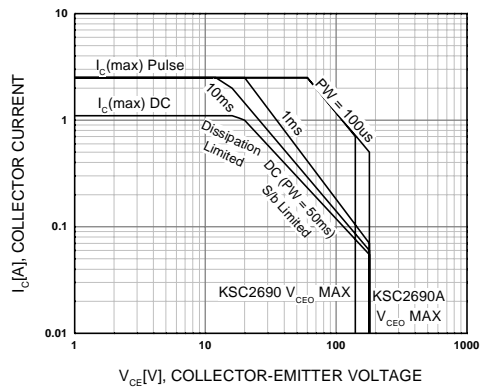


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

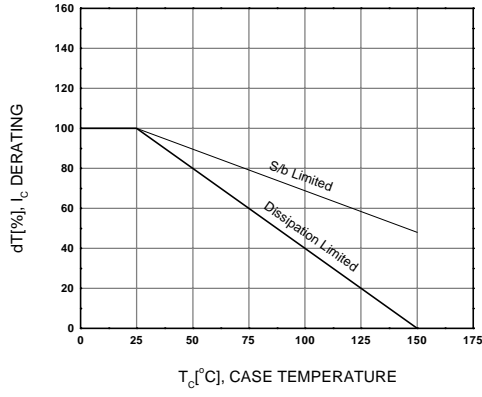


Figure 7. Derating Curve of Safe Operating Areas

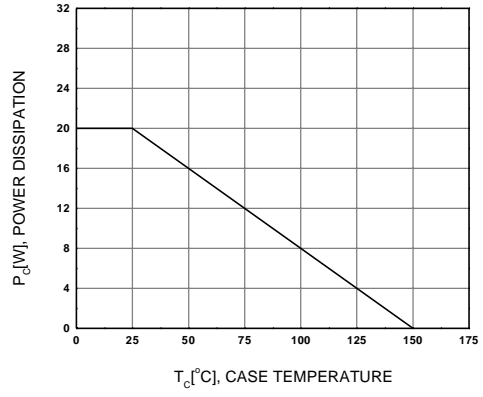
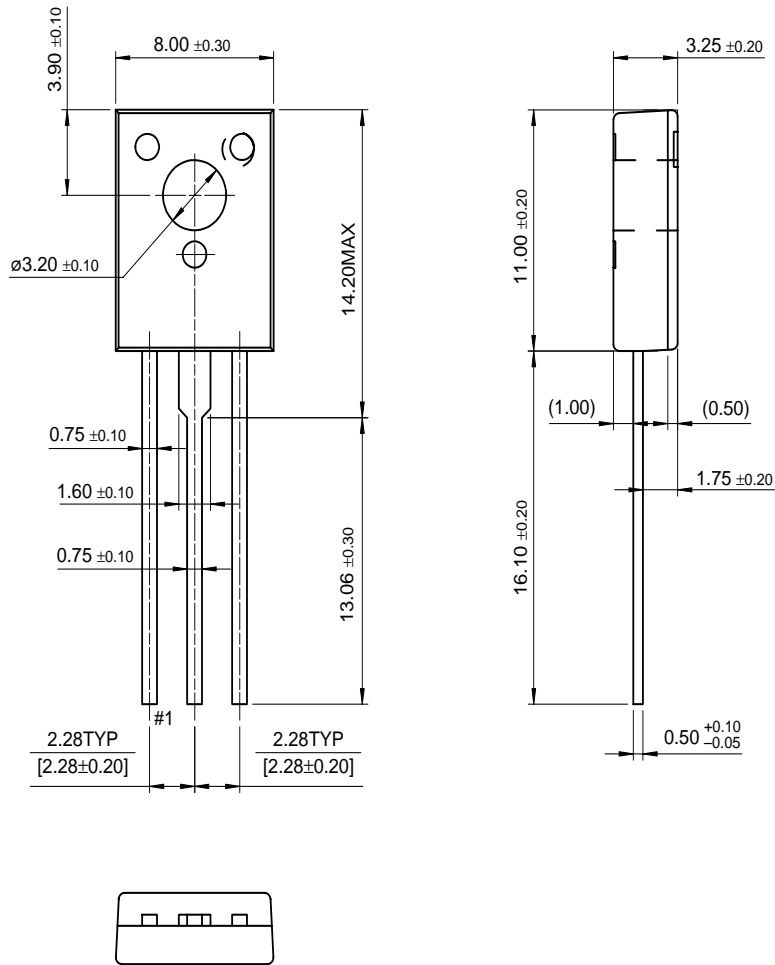


Figure 8. Power Derating

Package Dimensions

TO-126

KSC2690/2690A



Dimensions in Millimeters

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