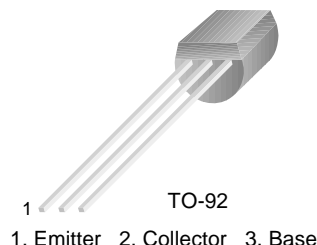


# KSA992

KSA992

## Audio Frequency Low Noise Amplifier

- Complement to KSC1845



## PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	-120	V
$V_{CEO}$	Collector-Emitter Voltage	-120	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-50	mA
$I_B$	Base Current	-10	mA
$P_C$	Collector Power Dissipation	500	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -120\text{V}, I_E = 0$			-50	nA
$I_{CEO}$	Collector Cur-off Current	$V_{CE} = -100\text{V}, I_B = 0$			-1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -5\text{mA}, I_C = 0$			-50	nA
$h_{FE1}$ $h_{FE2}$	DC Current Gain	$V_{CE} = -6\text{V}, I_C = -0.1\text{mA}$ $V_{CE} = -6\text{V}, I_C = -1\text{mA}$	150 200	500 500	800	
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	-0.55	-0.61	-0.65	V
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$		-0.09	-0.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	50	100		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -30\text{V}, I_E = 0, f = 1\text{MHz}$		2	3	pF
NV	Noise Voltage	$V_{CE} = -5.0\text{V}, I_C = -1.0\text{mA},$ $R_G = 100\text{KW}, G_V = 80\text{dB},$ $f = 10\text{Hz to } 1.0\text{KHz}$		25	40	mV

### $h_{FE2}$ Classification

Classification	P	F	E
$h_{FE2}$	200 ~ 400	300 ~ 600	400 ~ 800

# Typical Characteristics

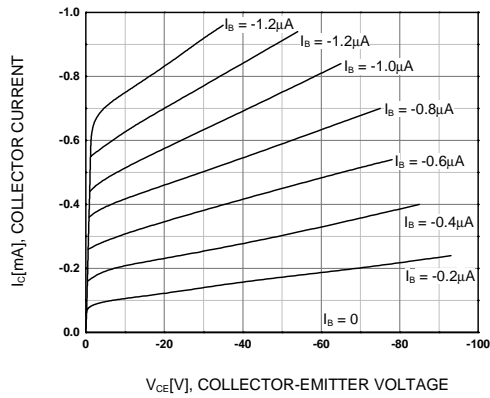


Figure 1. Static Characteristic

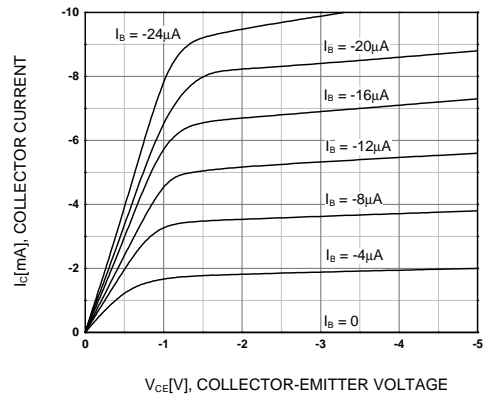


Figure 2. Static Characteristic

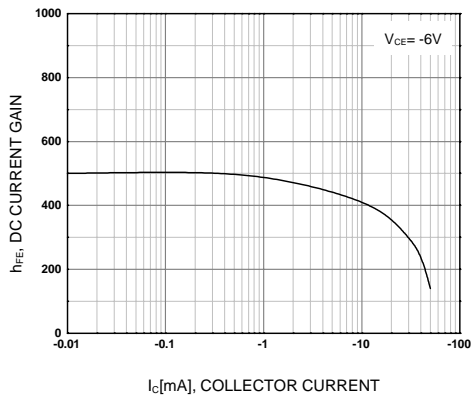


Figure 3. DC current Gain

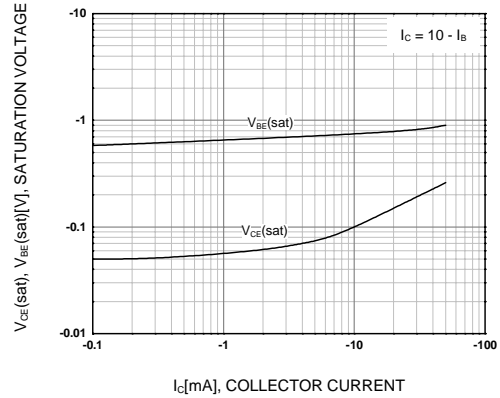


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

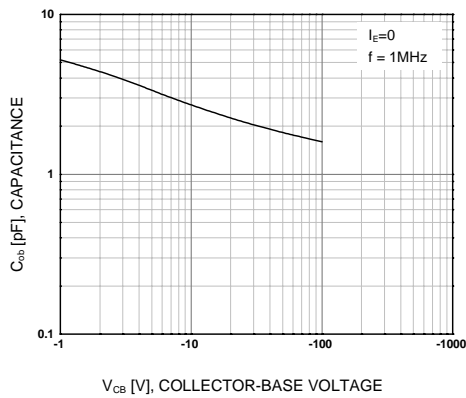


Figure 5. Collector Output Capacitance

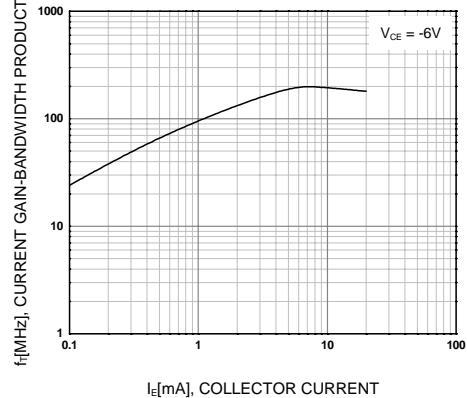


Figure 6. Current Gain Bandwidth Product

Typical Characteristics (Continued)

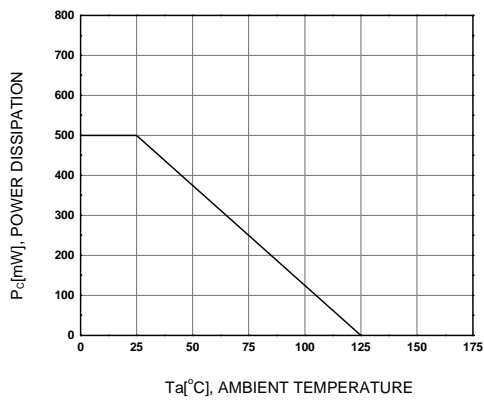
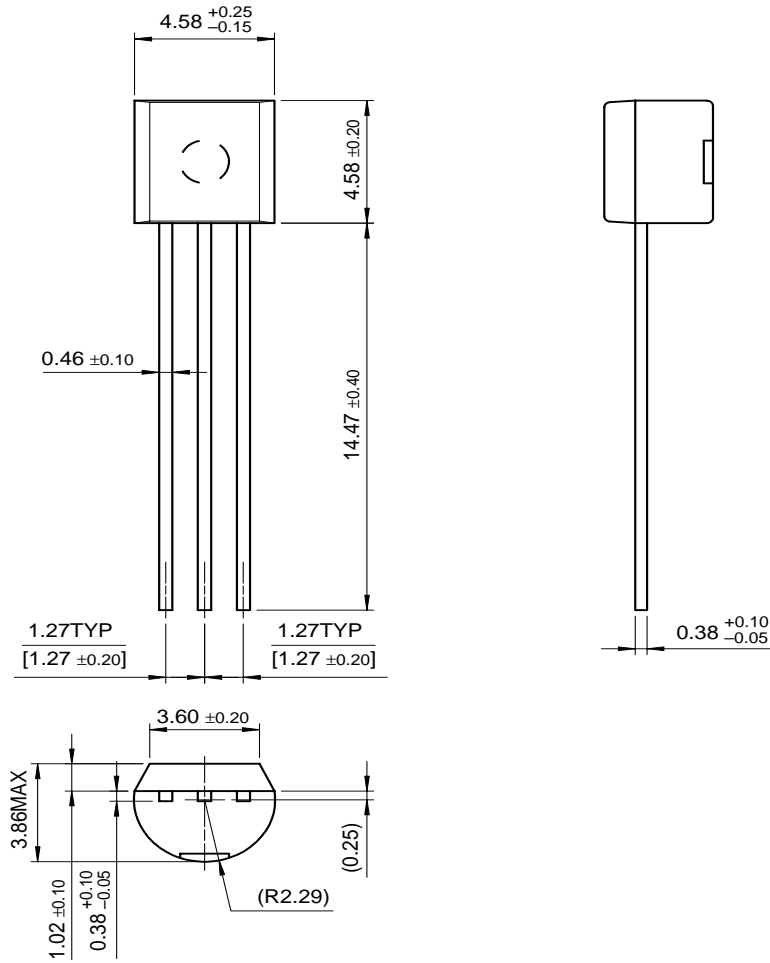


Figure 7. Power Derating

# Package Dimensions

## TO-92



Dimensions in Millimeters

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