

# KSC1845

## Audio Frequency Low Noise Amplifier

- Complement to KSA992



## NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	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
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=5\text{V}, I_C=0$			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	580 600	1200	
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE}=6\text{V}, I_C=1\text{mA}$	0.55	0.59	0.65	V
$V_{BE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$		0.07	0.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=6\text{V}, I_C=1\text{mA}$	50	110		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=30\text{V}, I_E=0, f=1\text{MHz}$		1.6	2.5	pF
NL	Noise Level			25	40	mV

### $h_{FE}$ Classification

Classification	P	F	E	U
$h_{FE2}$	200 ~ 400	300 ~ 600	400 ~ 800	600 ~ 1200

# Typical Characteristics

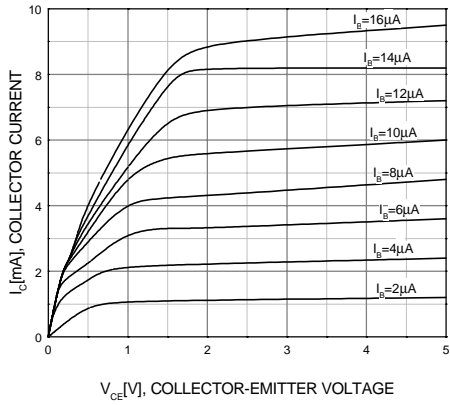


Figure 1. Static Characteristic

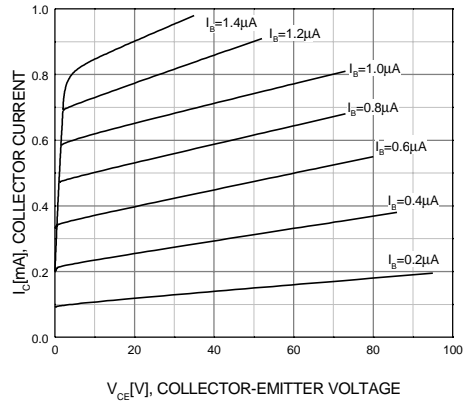


Figure 2. Static Characteristic

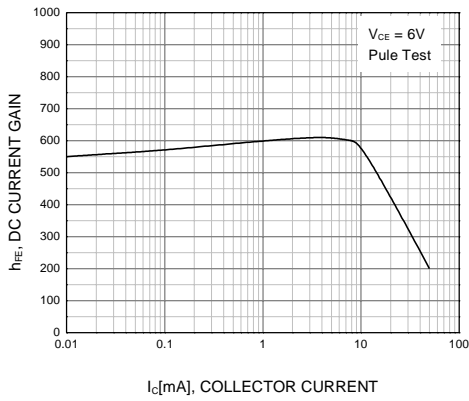


Figure 3. DC current Gain

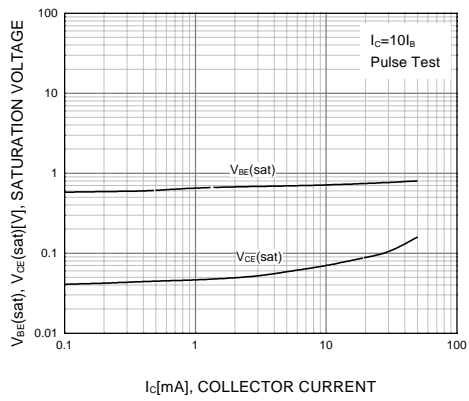


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

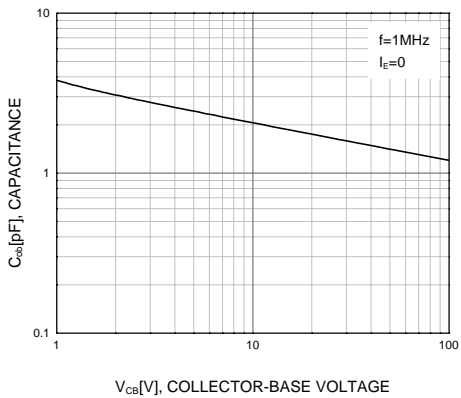


Figure 5. Collector Output Capacitance

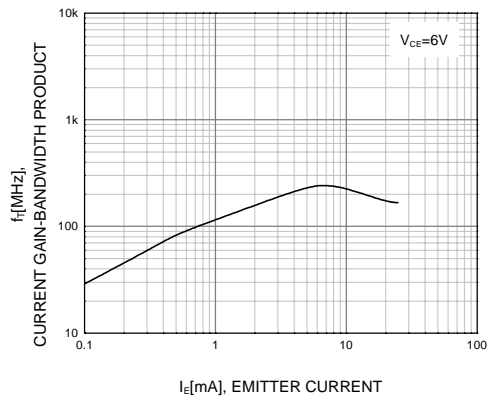


Figure 6. Current Gain Bandwidth Product

### Typical Characteristics (Continued)

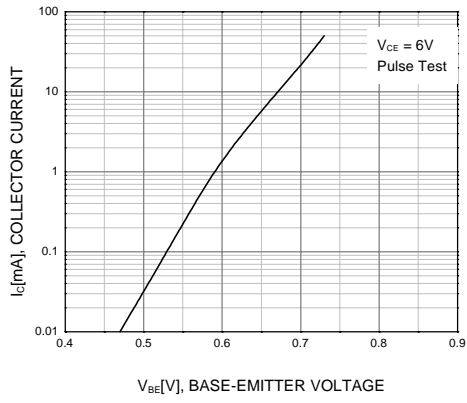


Figure 7. Collector Current vs. Base-Emitter Voltage

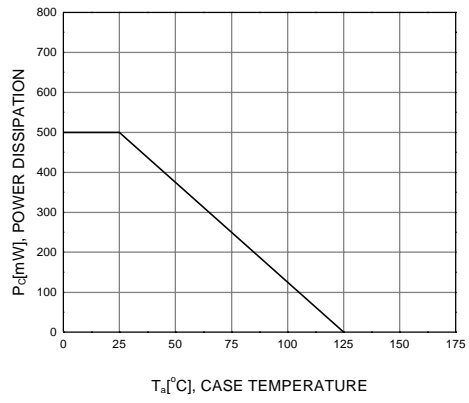
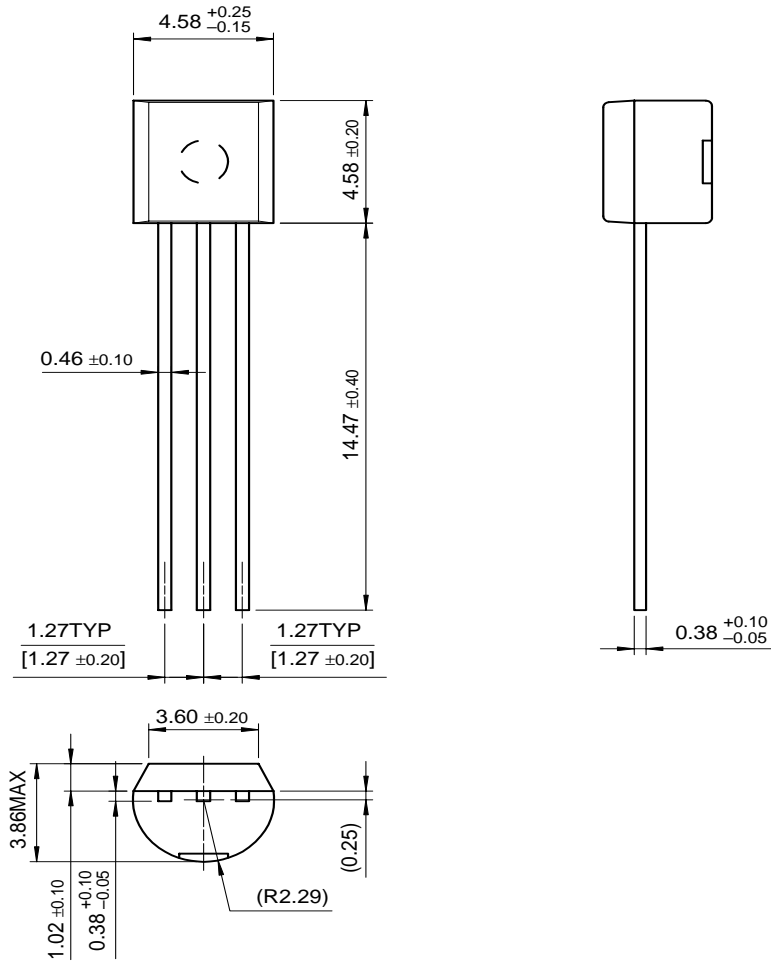


Figure 8. Power Derating

# Package Dimensions

KSC1845

## TO-92



Dimensions in Millimeters

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