

KSC1845

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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

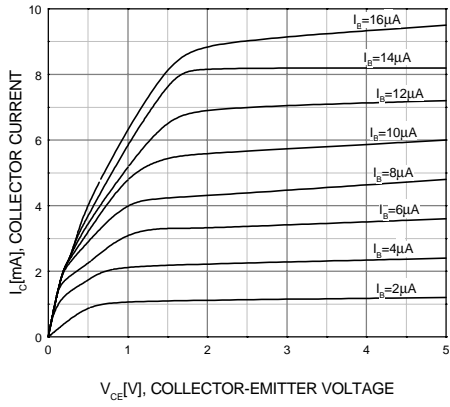


Figure 1. Static Characteristic

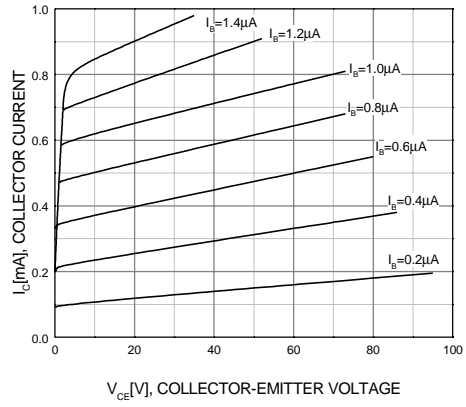


Figure 2. Static Characteristic

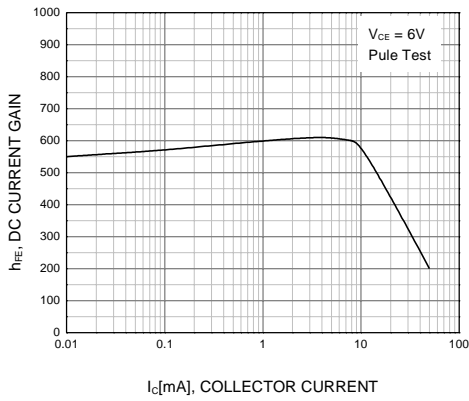


Figure 3. DC current Gain

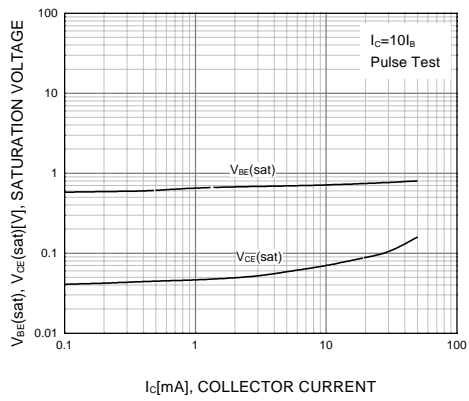


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

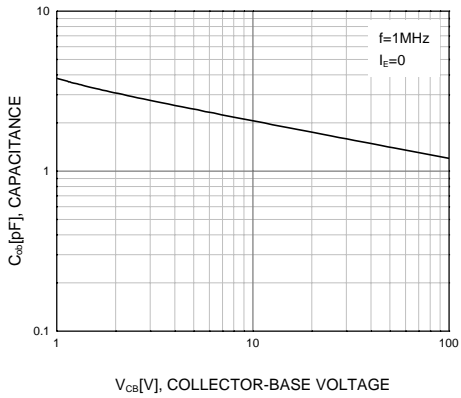


Figure 5. Collector Output Capacitance

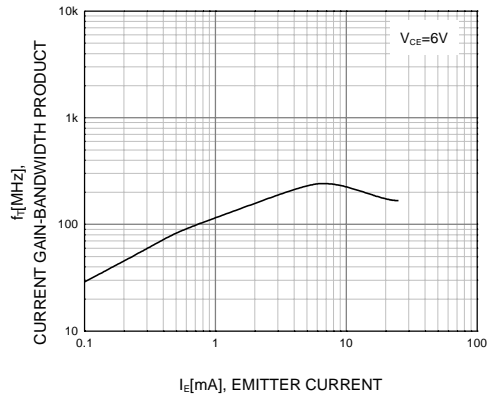


Figure 6. Current Gain Bandwidth Product

Typical Characteristics (Continued)

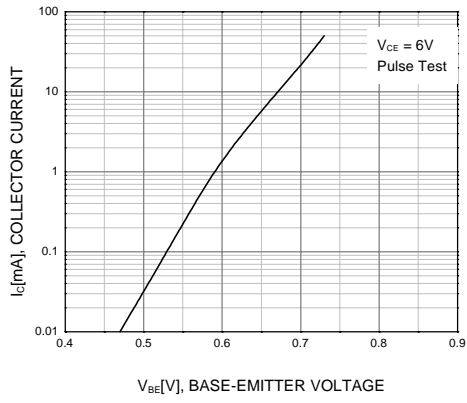


Figure 7. Collector Current vs. Base-Emitter Voltage

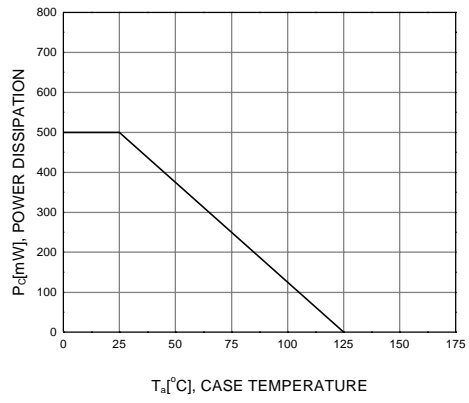
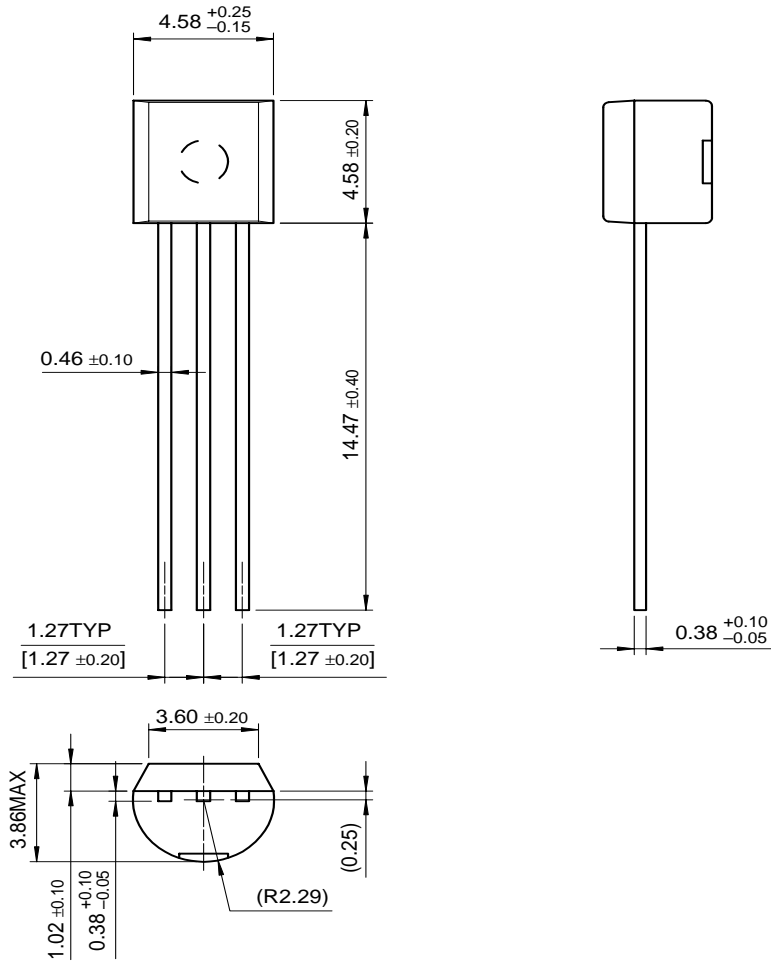


Figure 8. Power Derating

Package Dimensions

KSC1845

TO-92



Dimensions in Millimeters

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