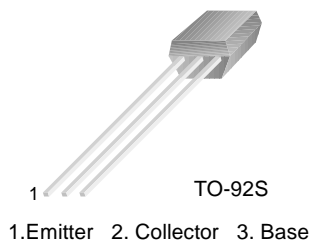


# KSD1020

KSD1020

## Audio Frequency Amplifier

- Complement to KSB810



## NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	5.0	V
$I_C$	Collector Current (DC)	700	mA
$I_{CP}$	* Collector Current (Pulse)	1.0	A
$P_C$	Collector Power Dissipation	350	mW
$T_J$	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 $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=30\text{V}$ , $I_E=0$			100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=5\text{V}$ , $I_C=0$			100	nA
$h_{FE1}$ $h_{FE2}$	* DC Current Gain	$V_{CE}=1\text{V}$ , $I_C=100\text{mA}$ $V_{CE}=1\text{V}$ , $I_C=700\text{mA}$	120 35	200 140	400	
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE}=6\text{V}$ , $I_C=10\text{mA}$	600	640	700	mV
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=700\text{mA}$ , $I_B=70\text{mA}$		0.2	0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=700\text{mA}$ , $I_B=70\text{mA}$		0.95	1.2	V
$C_{ob}$	Output Capacitance	$V_{CB}=6\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		13	25	pF
$f_T$	Current Gain Bandwidth Product	$V_{CE}=6\text{V}$ , $I_C=10\text{mA}$	50	170		MHz

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

### $h_{FE1}$ Classification

Classification	Y	G
$h_{FE1}$	120 ~ 240	200 ~ 400

# Typical Characteristics

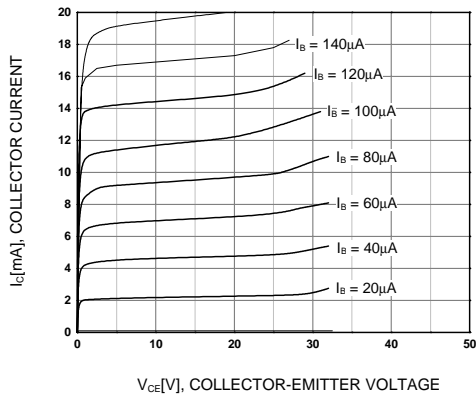


Figure 1. Static Characteristic

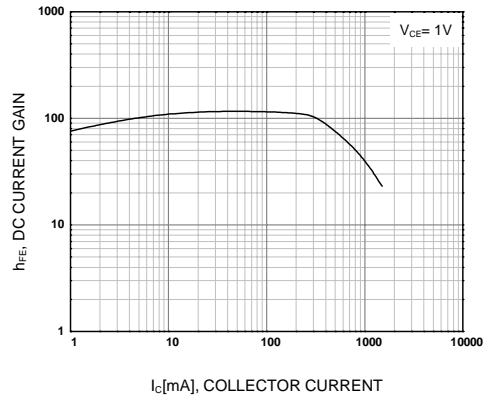


Figure 2. DC current Gain

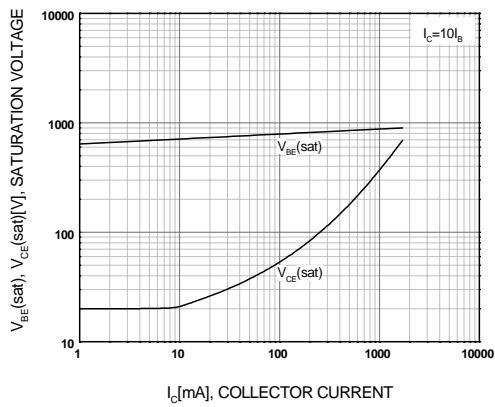


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

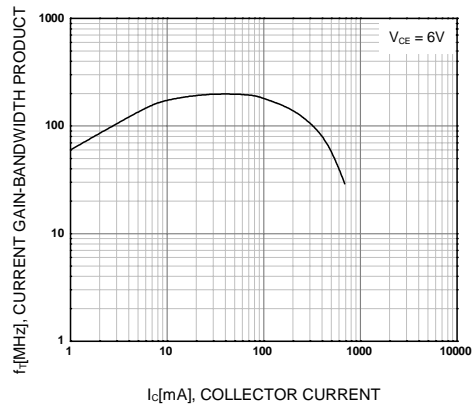
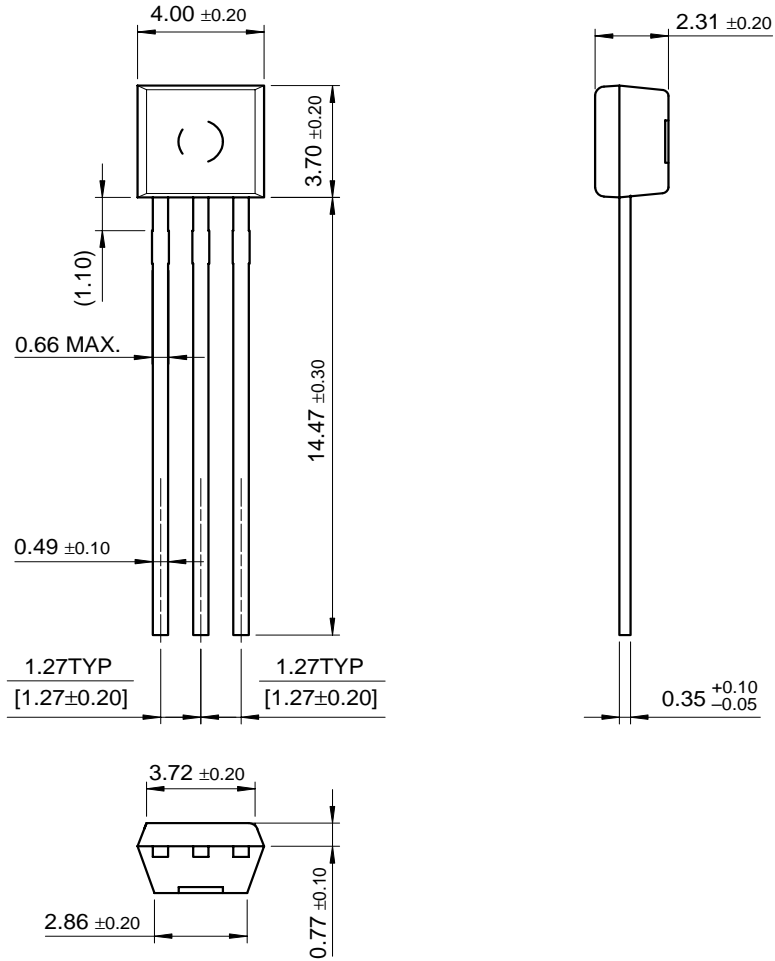


Figure 4. Current Gain-Bandwidth Product

# Package Dimensions

## TO-92S



Dimensions in Millimeters

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Bottomless <sup>™</sup>	FASTr <sup>™</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperFET <sup>™</sup>
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