



**THE DATASHEET OF
KSD1020YBU**

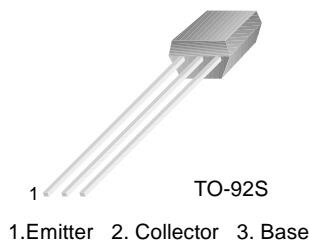


KSD1020

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

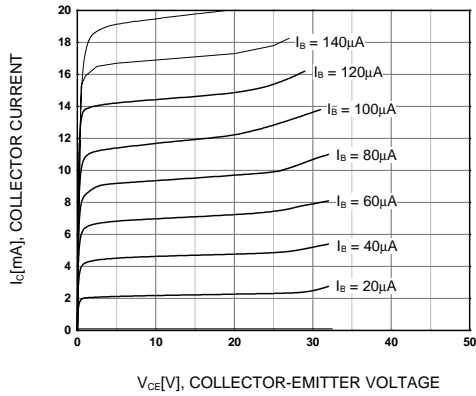


Figure 1. Static Characteristic

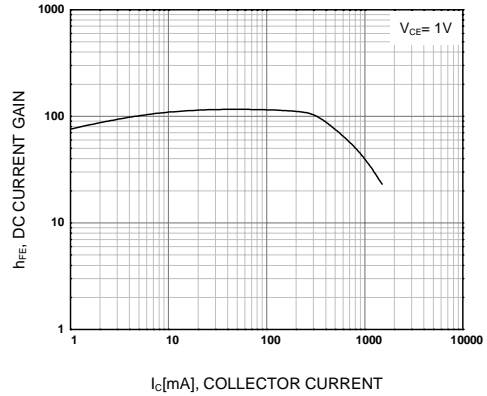


Figure 2. DC current Gain

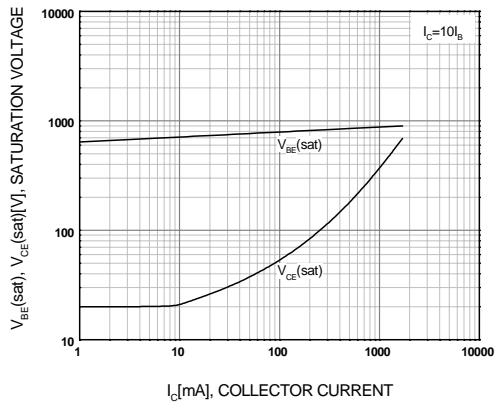


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

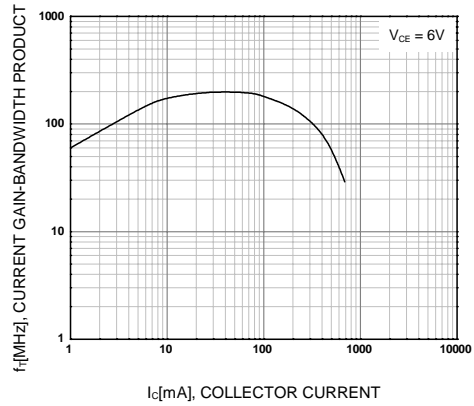
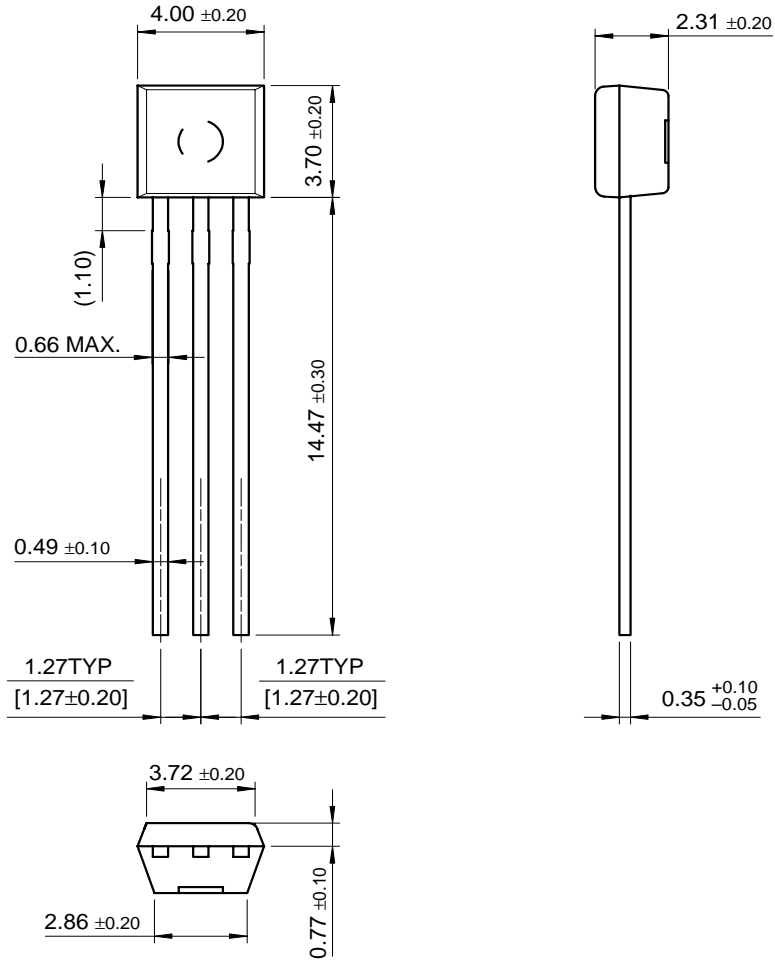


Figure 4. Current Gain-Bandwidth Product

Package Dimensions

TO-92S



Dimensions in Millimeters

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