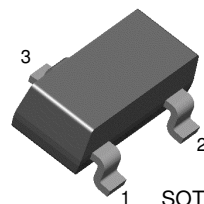


KSC2223

KSC2223

High Frequency Amplifier

- Very small size to assure good space factor in Hybrid IC applications
- $f_T=600\text{MHz}$ (TYP) at $I_C=1\text{mA}$
- $C_{ob}=1\text{pF}$ (TYP) at $V_{CB}=6\text{V}$
- $NF=3\text{dB}$ (TYP) at $f=100\text{MHz}$



1. Base 2. Emitter 3. Collector

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	30	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	20	mA
P_C	Collector Power Dissipation	150	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

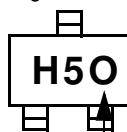
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE}=6\text{V}, I_C=1\text{mA}$	40	90	180	
$V_{CE(sat)}$	Collector Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$		0.1	0.3	V
C_{ob}	Output Capacitance	$V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$		1		pF
f_T	Current Gain Bandwidth Product	$V_{CE}=6\text{V}, I_C=1\text{mA}$	400	600		MHz
C_{c-rbb}	Time Constant	$V_{CB}=6\text{V}, I_C=1\text{mA}$ $f=31.9\text{MHz}$		12		ps
NF	Noise Figure	$V_{CE}=6\text{V}, I_C=1\text{mA}$ $f=100\text{MHz}, R_S=50\Omega$		3		dB

h_{FE} Classification

Classification	R	O	Y
h_{FE}	40 ~ 80	60 ~ 120	90 ~ 180

Marking



h_{FE} grade

Typical Characteristics

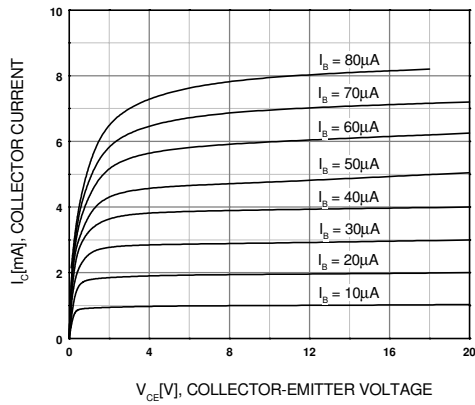


Figure 1. Static Characteristic

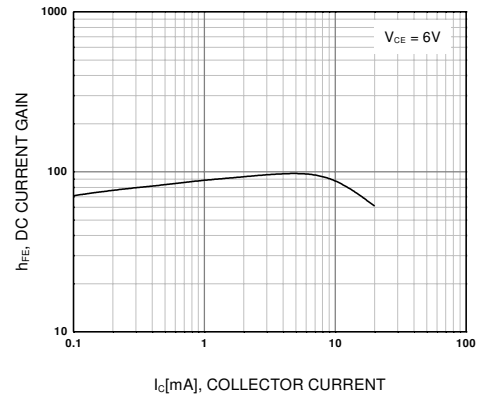


Figure 2. DC current Gain 1

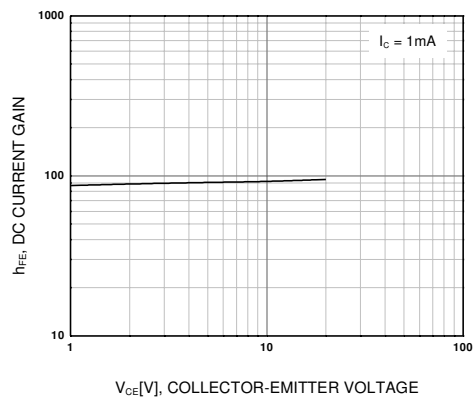


Figure 3. DC current Gain 2

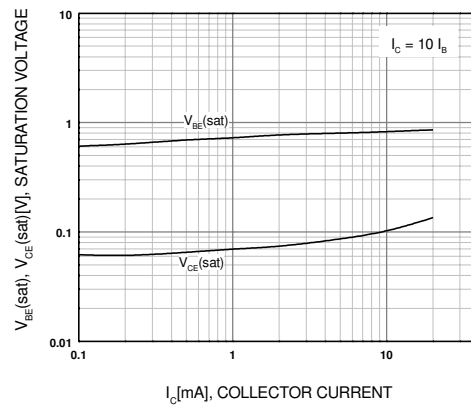


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

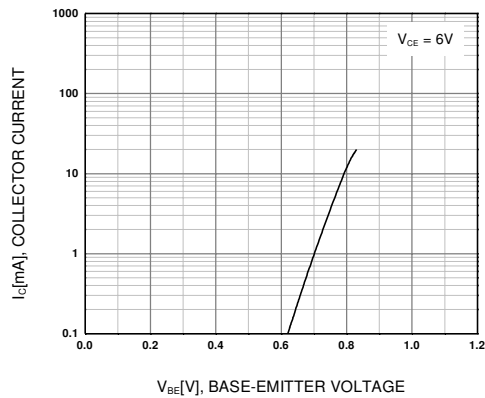


Figure 5. Base-Emitter On Voltage

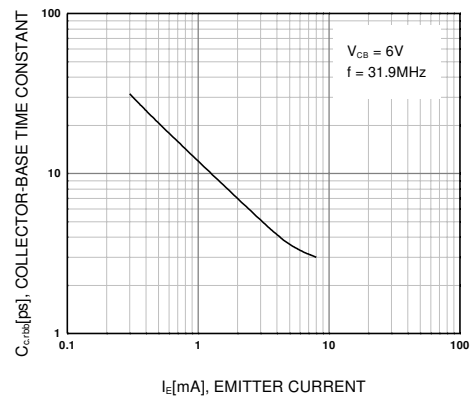


Figure 6. Collector-Base Time Constant

Typical Characteristics (Continued)

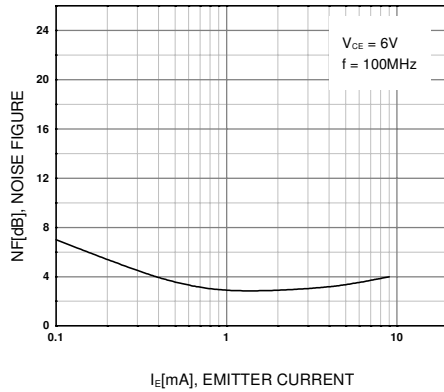


Figure 7. Noise Figure

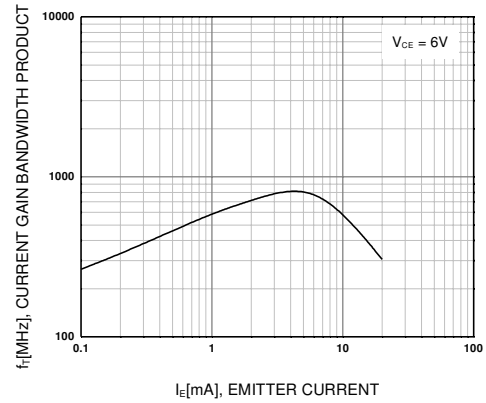


Figure 8. Current Gain Bandwidth Product

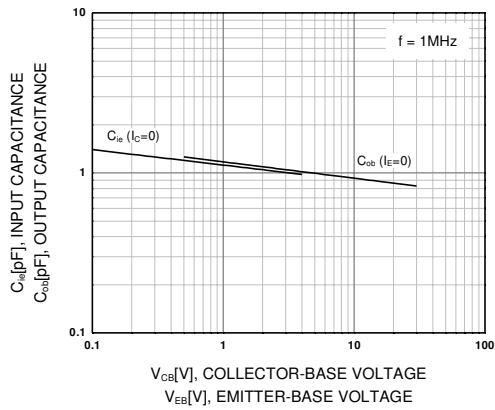


Figure 9. Input and Output Capacitance

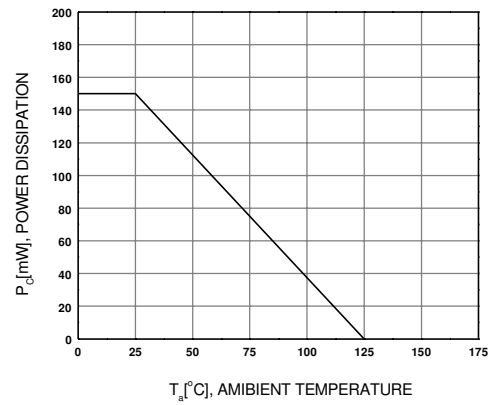
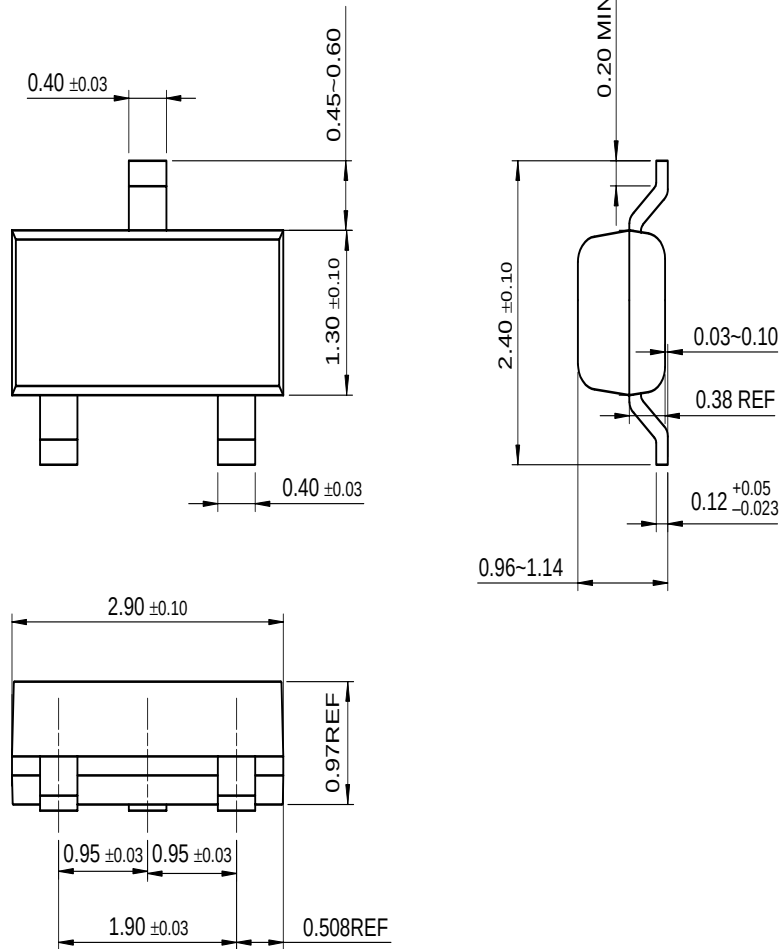


Figure 10. Power Derating

Package Dimensions

SOT-23



Dimensions in Millimeters

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