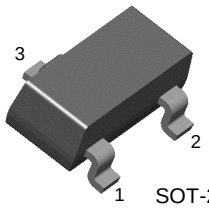
FAIRCHILD
SEMICONDUCTOR®

KSC2223

High Frequency Amplifier

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



SOT-23

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°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	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

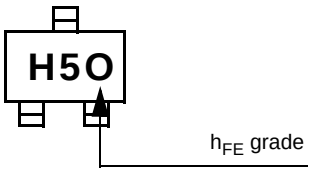
Electrical Characteristics T_a=25°C unless otherwise noted

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

h_{FE} Classification

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

Marking



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Typical Characteristics

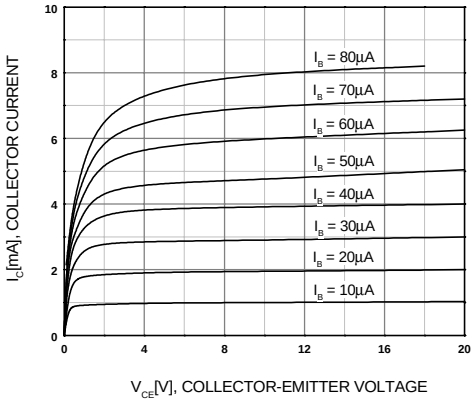


Figure 1. Static Characteristic

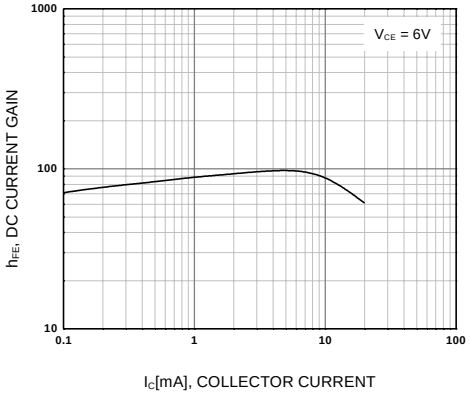


Figure 2. DC current Gain 1

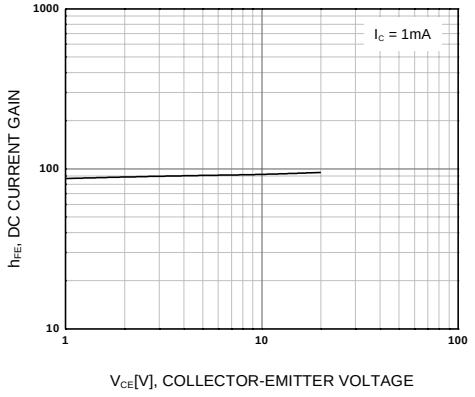


Figure 3. DC current Gain 2

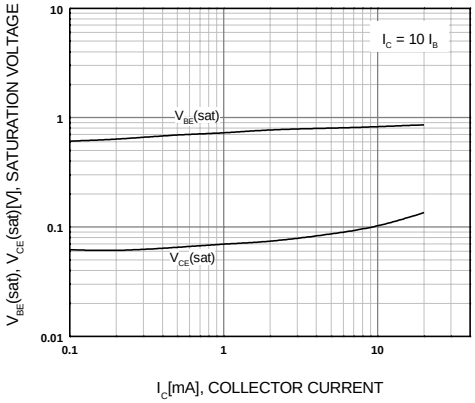


Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

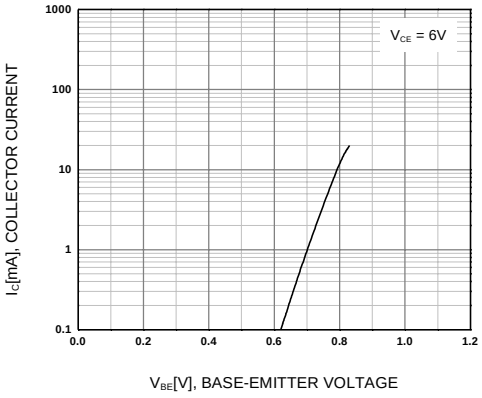


Figure 5. Base-Emitter On Voltage

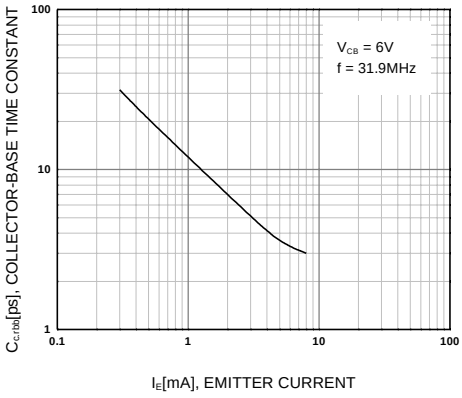


Figure 6. Collector-Base Time Constant

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Typical Characteristics (Continued)

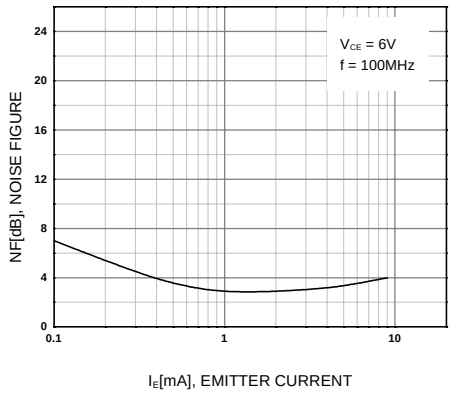


Figure 7. Noise Figure

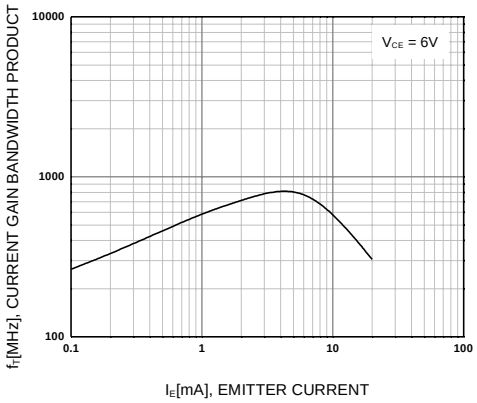


Figure 8. Current Gain Bandwidth Product

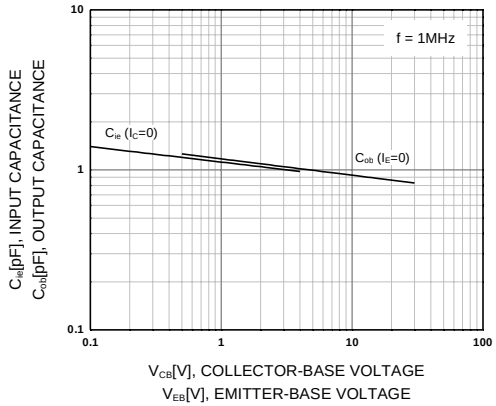


Figure 9. Input and Output Capacitance

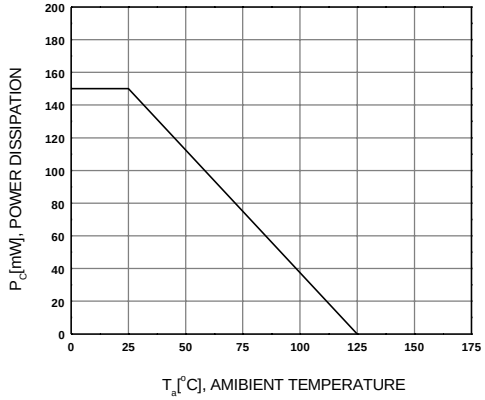
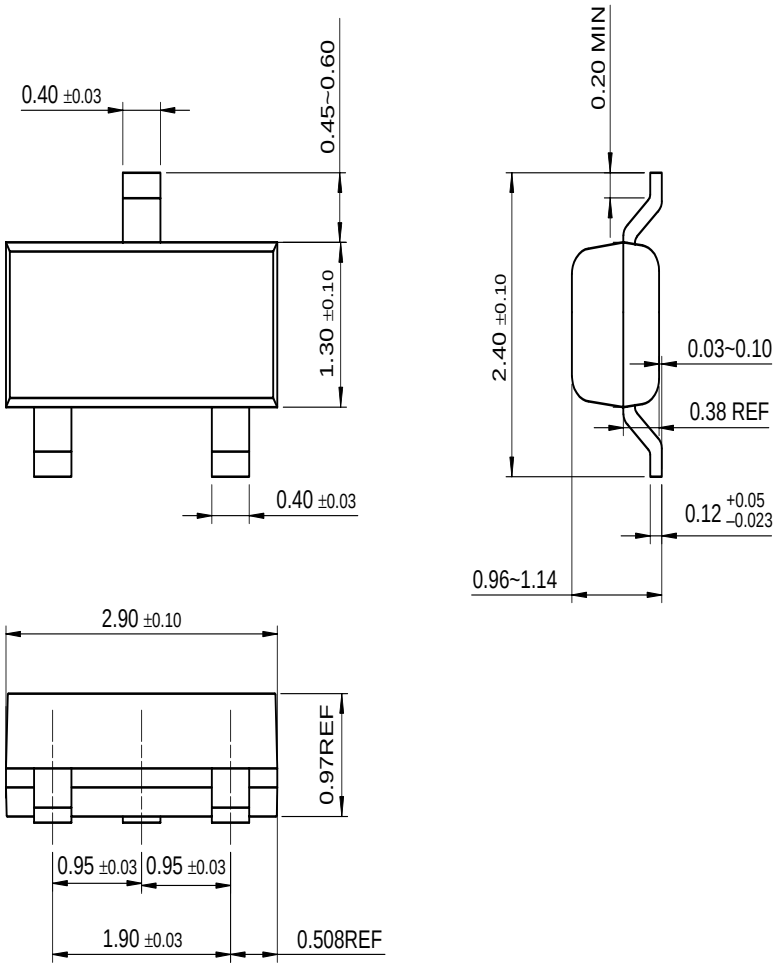


Figure 10. Power Derating

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Package Dimensions

SOT-23



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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