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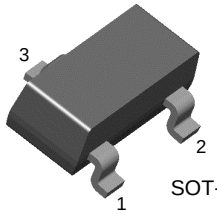
SEMICONDUCTOR®

KSC2758

RF. Mixer for UHF Tuner

- High Power Gain : G_{PE}=17dB(TYP.) at f=900MHz
- Low Noise Figure : NF=2.8dB(TYP.) at f=900MHz



SOT-23

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

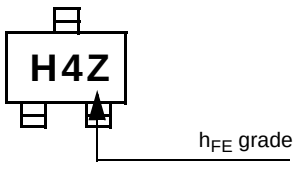
Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	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}=25V, I_E=0			0.1	μA
h_{FE}	DC Current Gain	V_{CE}=10V, I_C=3mA	60	120	240	
f_T	Current Gain Bandwidth Product	V_{CE}=10V, I_C=3mA	750	1000		MHz
C_{ob}	Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz		0.6	0.8	pF
NF	Noise Figure	V_{CB}=10V, I_C=3mA f=900Mhz		2.8	4.5	dB
G_{PE}	Power Gain	V_{CB}=10V, I_C=3mA, f=900MHz	14	17		dB
I_{AGC}	AGC Current	f=900MHz, I_E at G_R=-30dB		-8	-11	mA

Marking



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Typical Characteristics

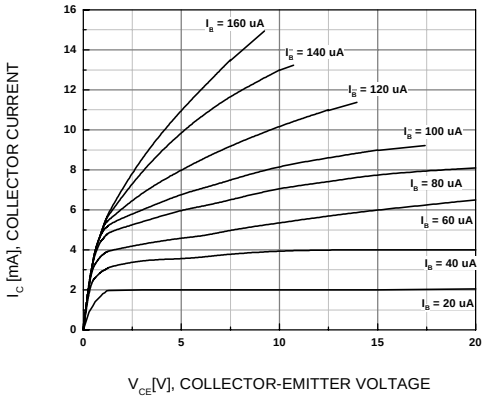

Figure 1. Static Characteristics

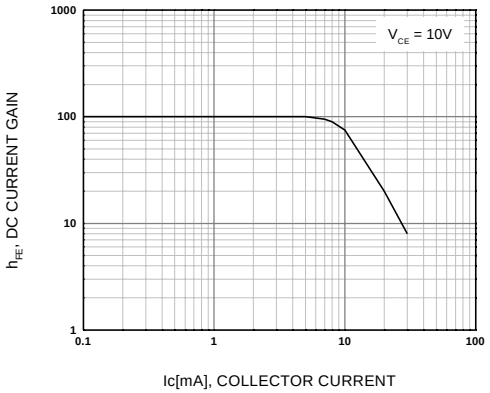

Figure 2. DC Current Gain

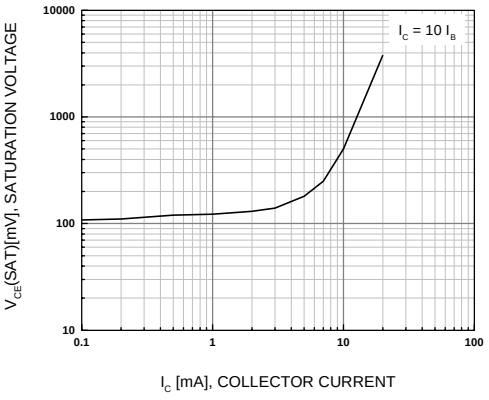

Figure 3. Collector-Emitter Saturation Voltage

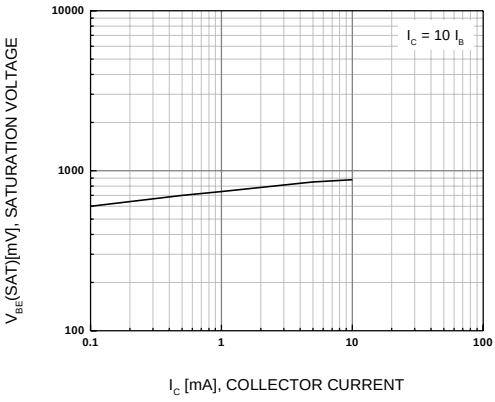

Figure 4. Base-Emitter Saturation Voltage

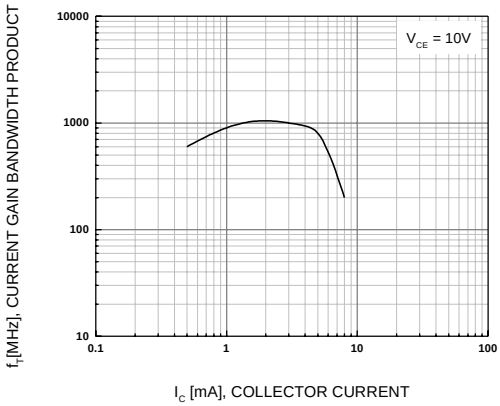

Figure 5. f_T - I_C

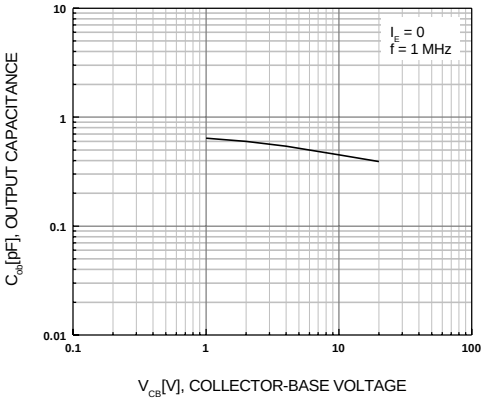

Figure 6. Output Capacitance

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Typical Characteristics (Continued)

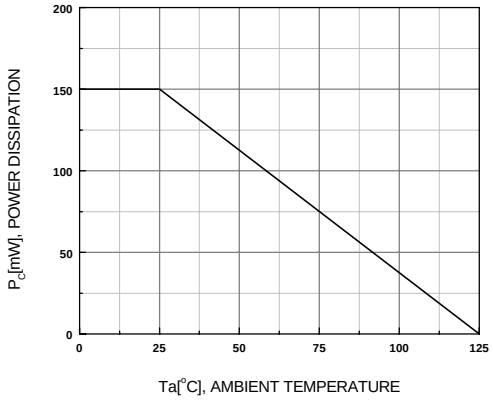

Figure 7. Power Derating

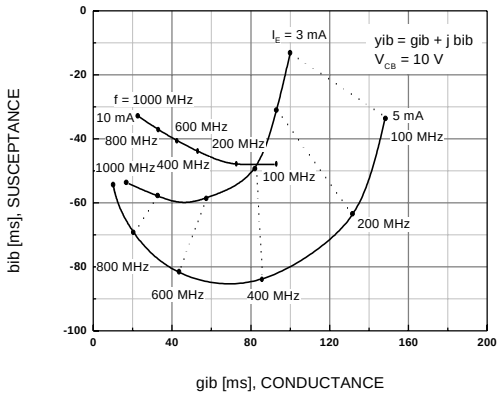

Figure 8. yib - f

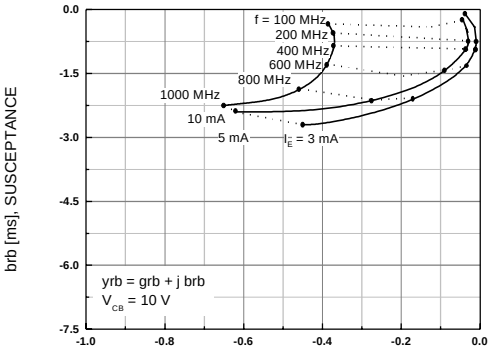

Figure 9. yrb - f

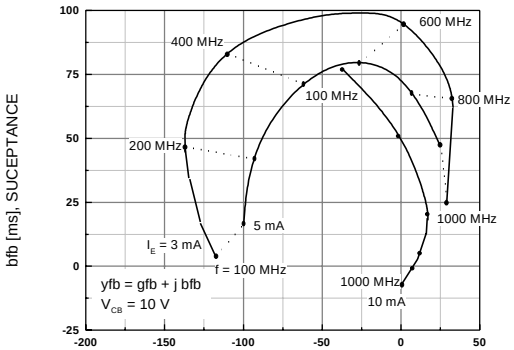

Figure 10. yfb - f

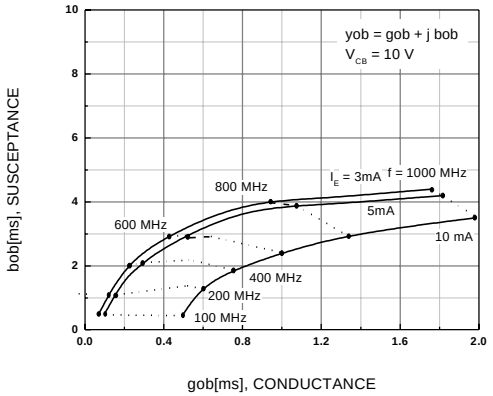

Figure 11. yob - f

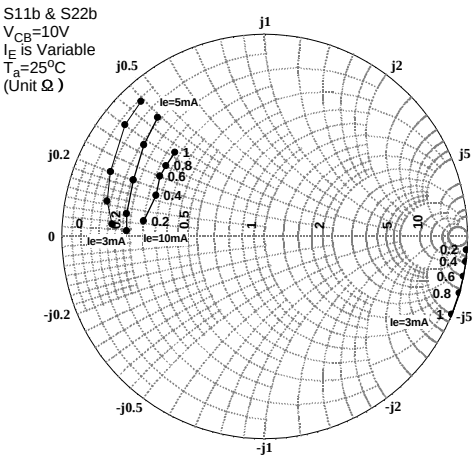

Figure 12. S11 & S22

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Typical Characteristics (Continued)

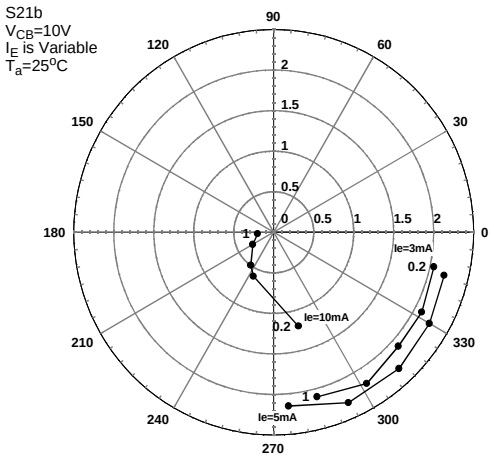

Figure 13. S21

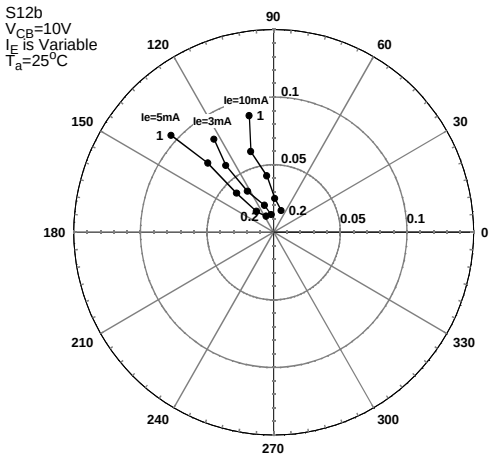

Figure 14. S12

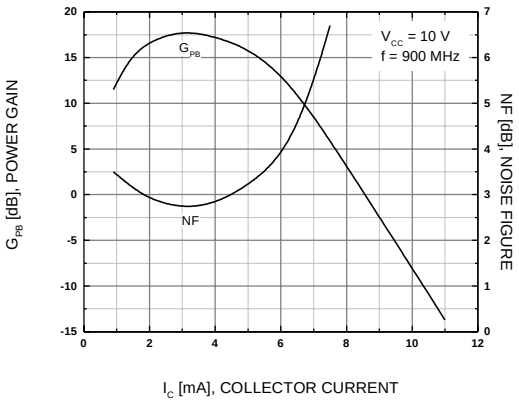

Figure 15. Power Gain & NF

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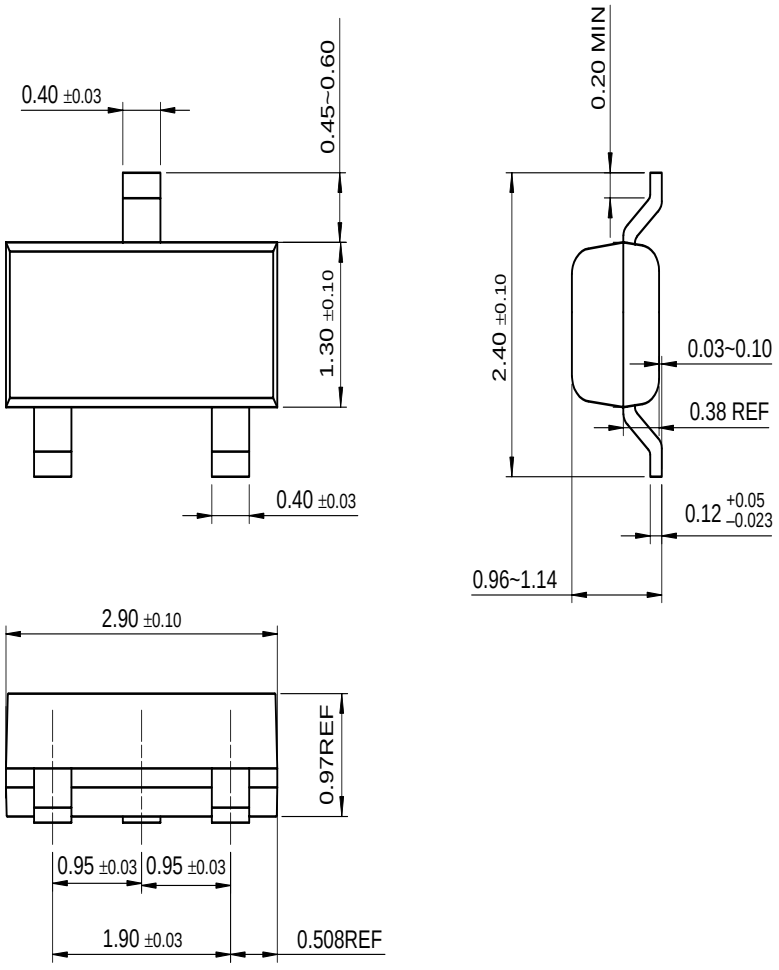
Package Demensions

SOT-23



Dimensions in Millimeters

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