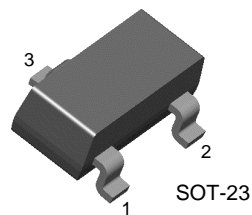


# KSC2758

KSC2758

## RF. Mixer for UHF Tuner

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



SOT-23  
1. Base 2. Emitter 3. Collector

## NPN Epitaxial Silicon Transistor

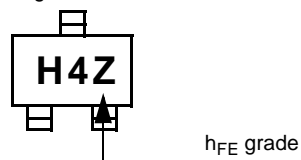
### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

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

Marking



# Typical Characteristics

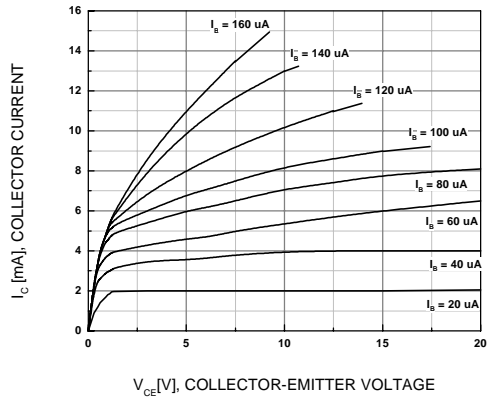


Figure 1. Static Characteristics

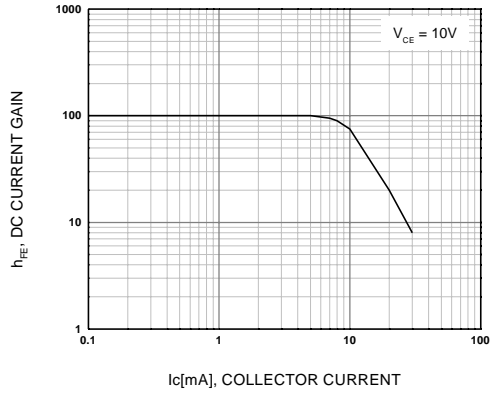


Figure 2. DC Current Gain

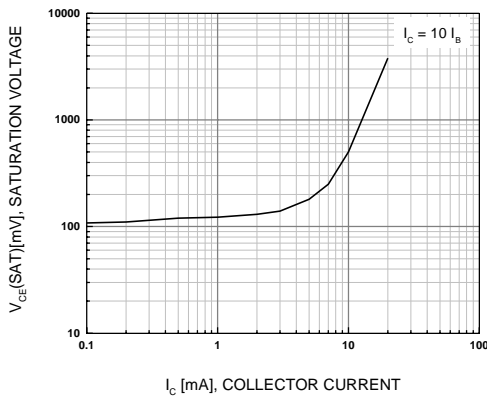


Figure 3. Collector-Emitter Saturation Voltage

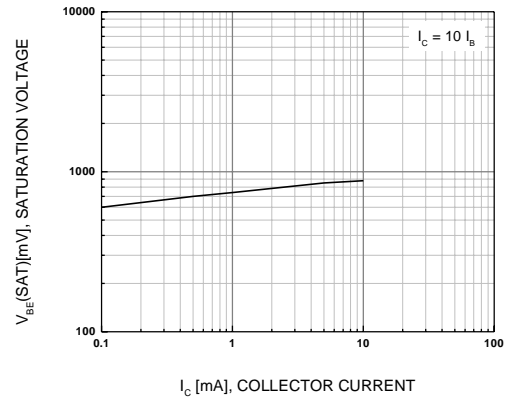


Figure 4. Base-Emitter Saturation Voltage

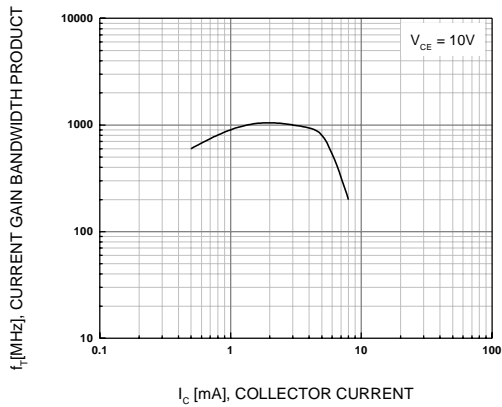


Figure 5.  $f_T - I_C$

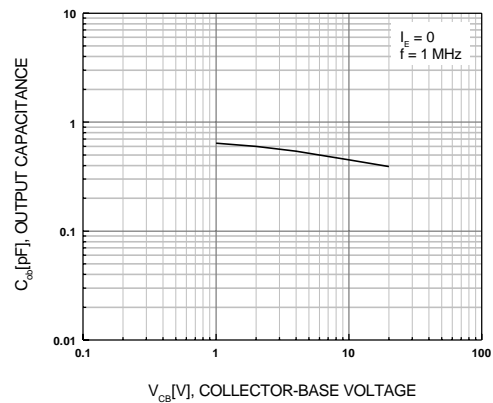


Figure 6. Output Capacitance

Typical Characteristics (Continued)

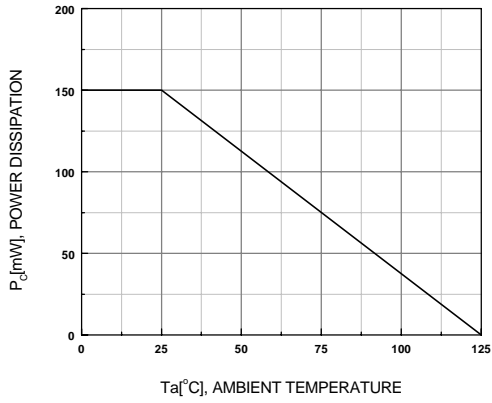


Figure 7. Power Derating

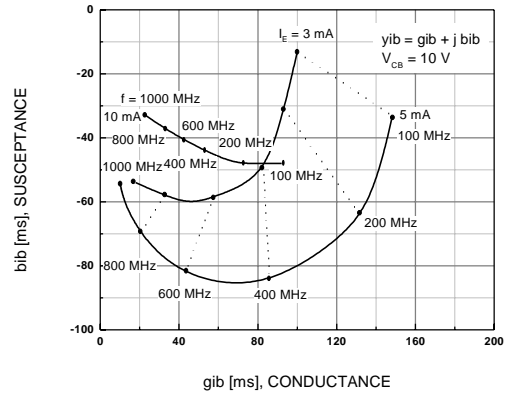


Figure 8.  $y_{ib} - f$

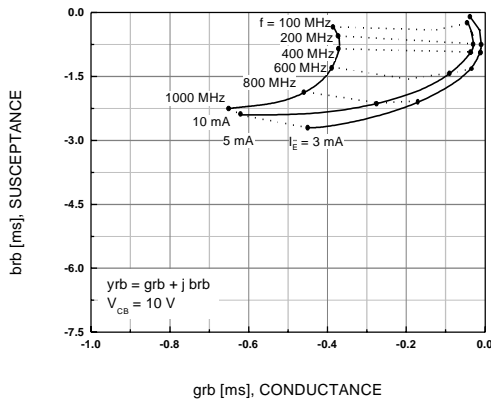


Figure 9.  $y_{rb} - f$

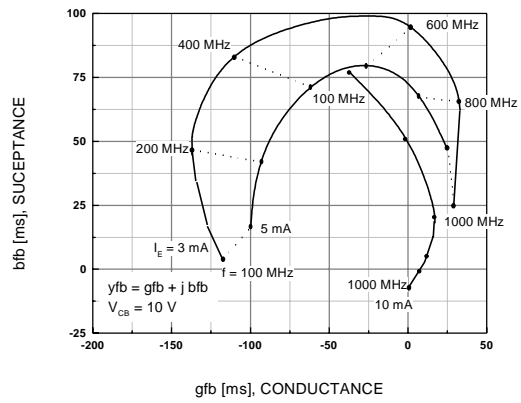


Figure 10.  $y_{fb} - f$

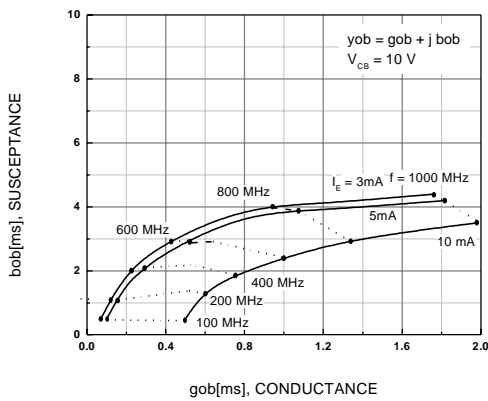


Figure 11.  $y_{ob} - f$

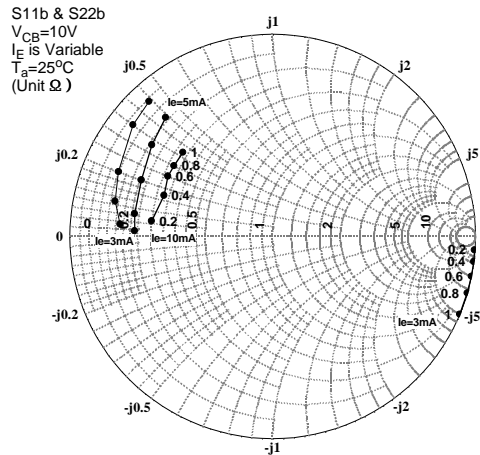


Figure 12.  $S_{11}$  &  $S_{22}$

Typical Characteristics (Continued)

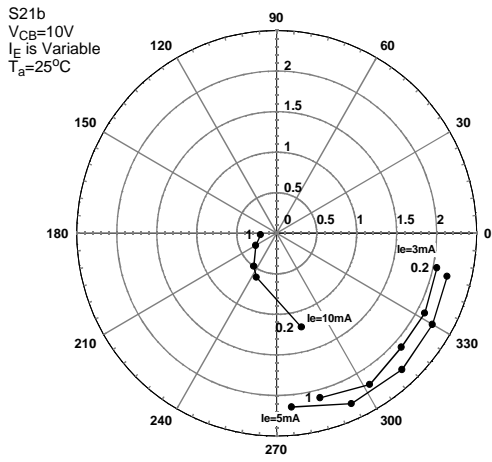


Figure 13. S21

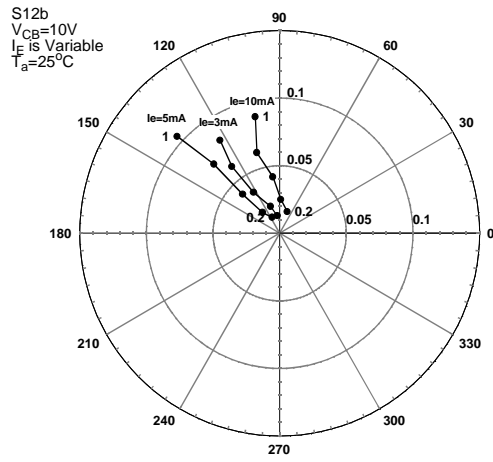


Figure 14. S12

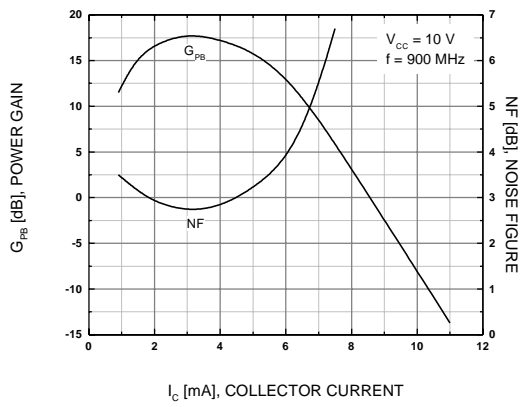
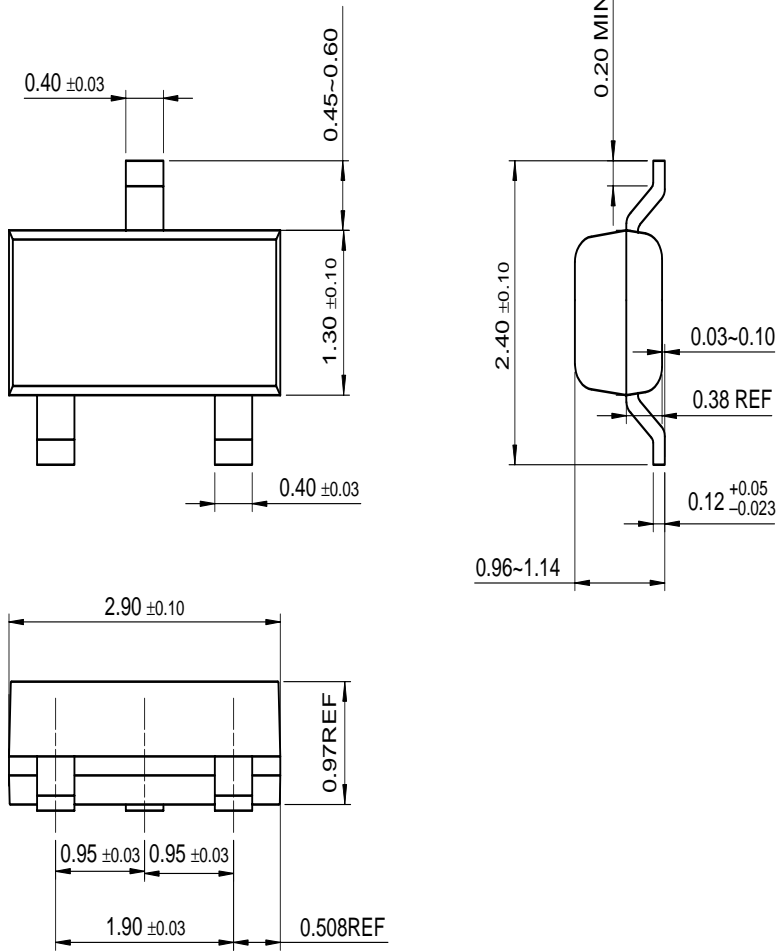


Figure 15. Power Gain & NF

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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