



**THE DATASHEET OF
KSC3123YMTF**

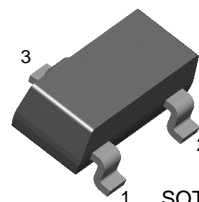


KSC3123

KSC3123

Mixer for UHF TV Tuner

- $G_{CE}=23\text{dB}$
- $C_{RE}=0.4\text{pF}$



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	3	V
I_C	Collector Current	50	mA
I_B	Base Current	25	mA
P_C	Collector Power Dissipation	150	mW
T_J	Junction Temperature	1500	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

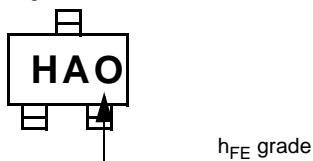
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$	20			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=25\text{V}, I_E=0$			0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=3\text{V}, I_C=0$			1	μA
h_{FE}	DC Current Gain	$V_{CE}=10\text{V}, I_C=5\text{mA}$	60		240	
f_T	Current Gain Bandwidth Product	$V_{CE}=10\text{V}, I_C=5\text{mA}$	900	1400		MHz
C_{RE}	Reverse Transfer Capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		0.4	0.5	pF
G_{CE}	Conversion Gain	$V_{CC}=12\text{V}, f=200\text{MHz}$ $f_L=260\text{MHz}$	20	23		dB
NF	Output Capacitance	$V_{CE}=12\text{V}, f=200\text{MHz}$, $f_L=260\text{MHz}$		3.8	5.5	dB

h_{FE} Classification

Classification	R	O	Y
h_{FE}	60 ~ 120	90 ~ 180	120 ~ 240

Marking



Typical Characteristics

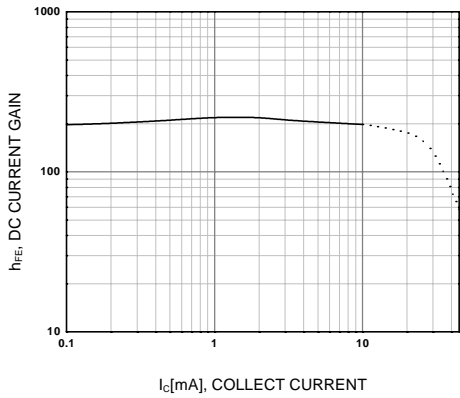


Figure 1. DC current Gain

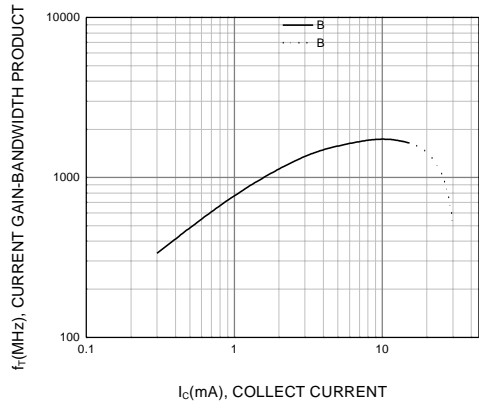


Figure 2. Current Gain Bandwidth Product

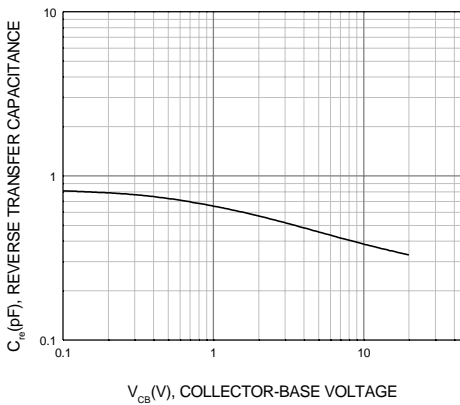


Figure 3. C_{RE} - V_{CB}

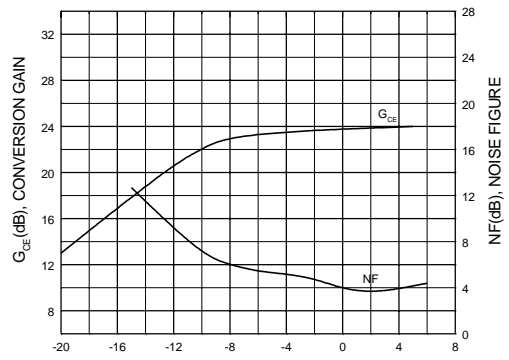


Figure 4. G_{CE} , NF-

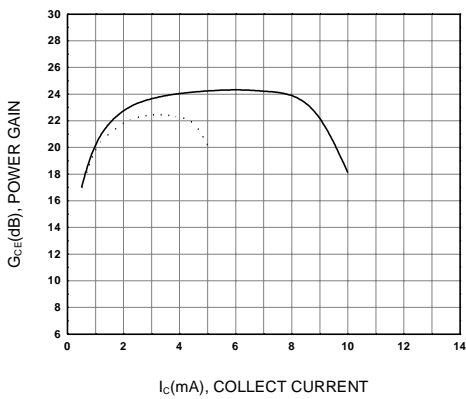


Figure 5. G_{CE} - I_C

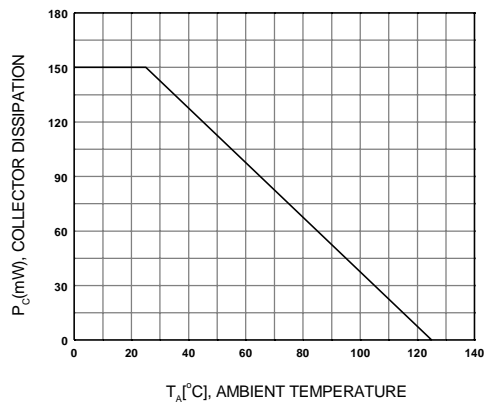


Figure 6. P_C - T_A

Typical Characteristics (Continued)

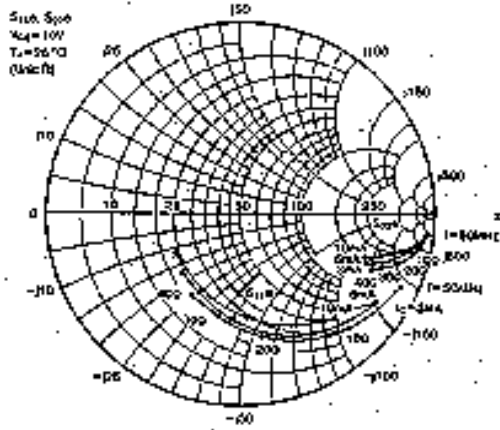


Figure 7.

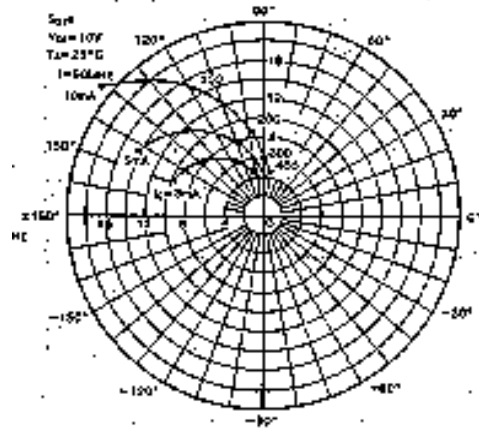


Figure 8.

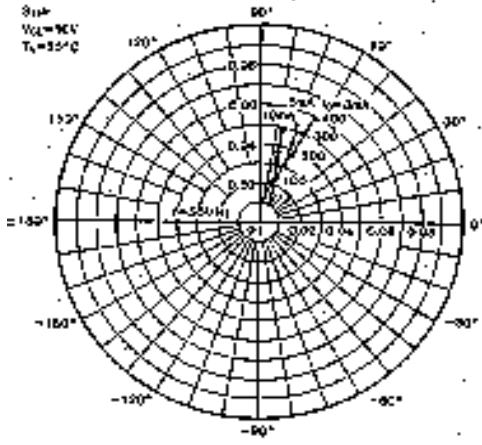
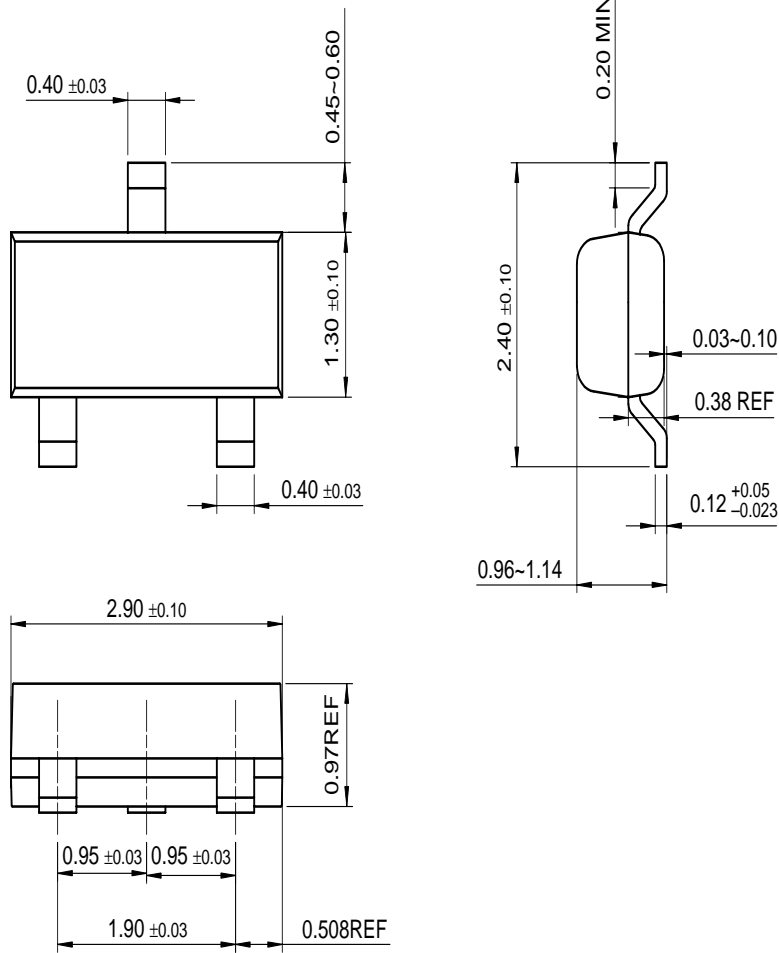


Figure 9.

Package Dimensions

SOT-23



Dimensions in Millimeters

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