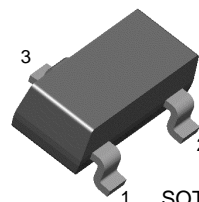


# KSC3123

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	$^\circ\text{C}$

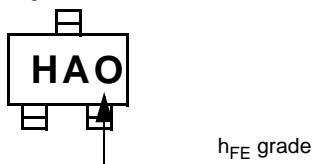
### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

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	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=3\text{V}, I_C=0$			1	$\mu\text{A}$
$h_{FE}$	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

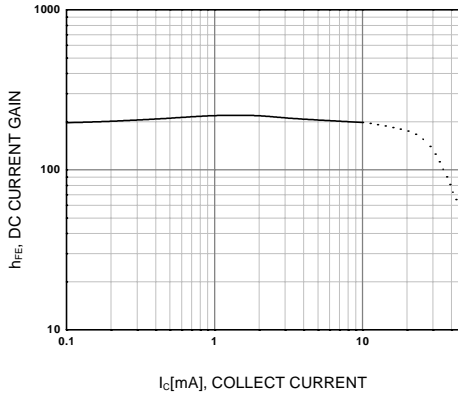


Figure 1. DC current Gain

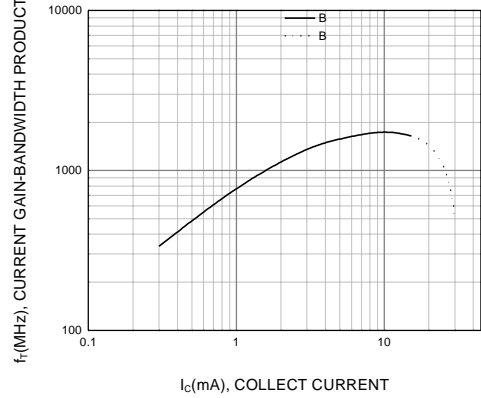


Figure 2. Current Gain Bandwidth Product

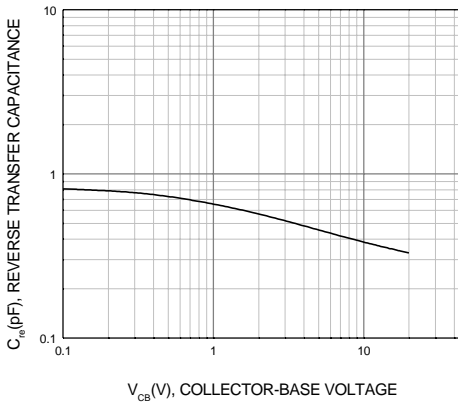


Figure 3.  $C_{RE}$ - $V_{CB}$

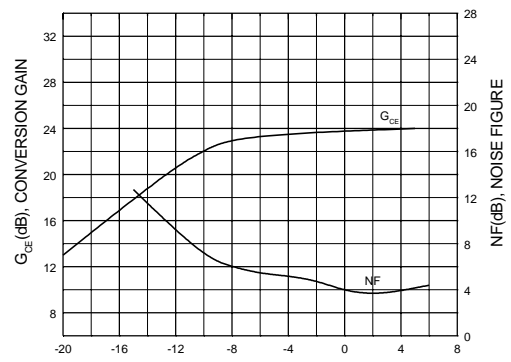


Figure 4.  $G_{CE}$ , NF-

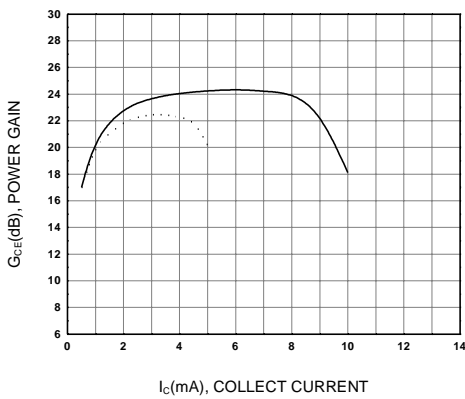


Figure 5.  $G_{CE}$ - $I_C$

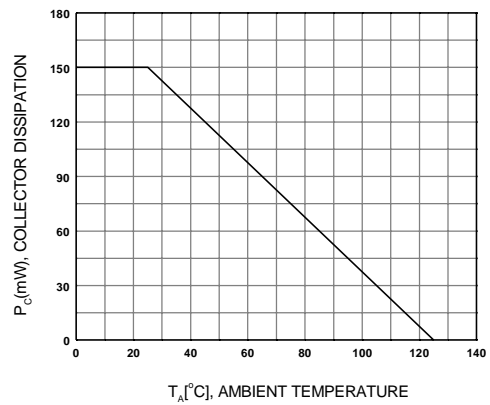


Figure 6.  $P_C$ - $T_A$

Typical Characteristics (Continued)

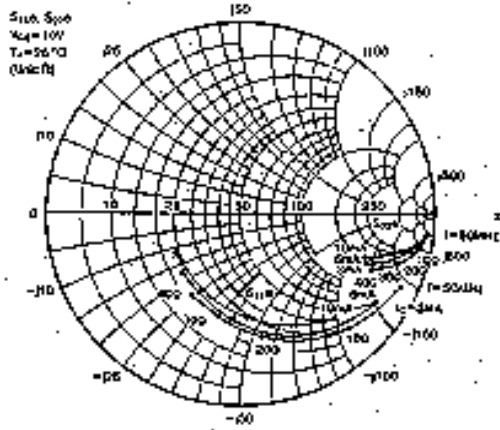


Figure 7.

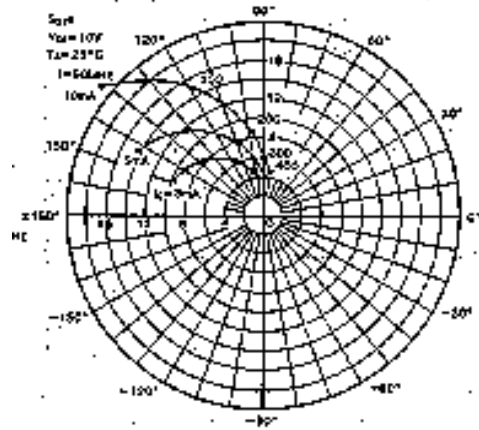


Figure 8.

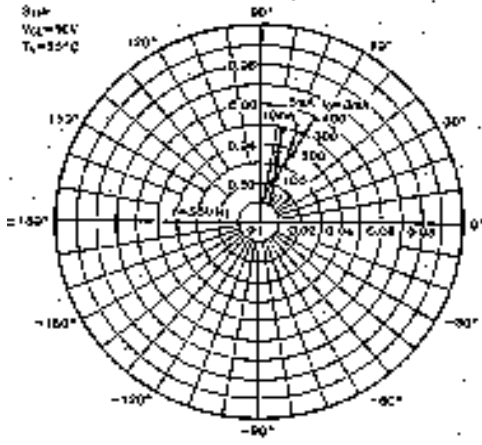


Figure 9.

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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