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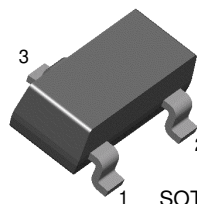


# KSC2757

KSC2757

## Mixer Oscillator for VHF Tuner

- High Current Gain Bandwidth Product :  $f_T=1100\text{MHz}$  (TYP)



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	15	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	50	mA
$P_C$	Collector Power Dissipation	150	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ +150	$^\circ\text{C}$

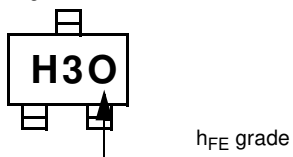
### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=12\text{V}, I_E=0$			0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE}=10\text{V}, I_C=5\text{mA}$	60	120	240	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}, I_C=5\text{mA}$	800	1100		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			1.5	pF
$C_{c-rbb'}$	Noise Figure	$V_{CE}=10\text{V}, I_C=5\text{mA}$ $f=31.9\text{MHz}$		10	1.5	ps

### $h_{FE}$ Classification

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

Marking



# Typical Characteristics

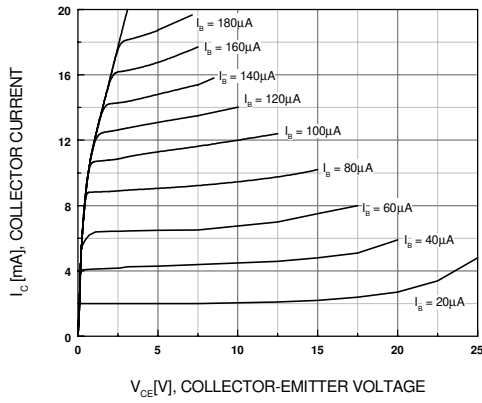


Figure 1. Static Characteristics

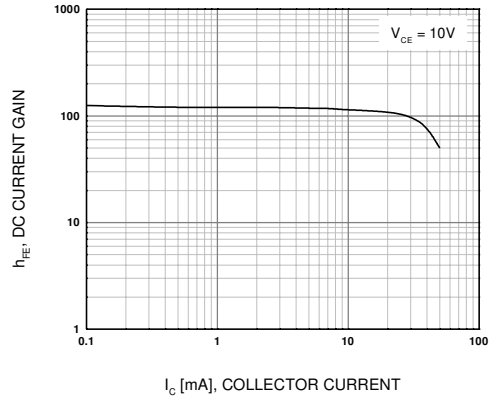


Figure 2. DC Current Gain

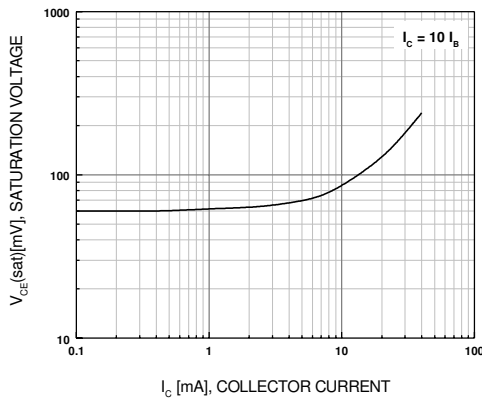


Figure 3. Collector-Emitter Saturation Voltage

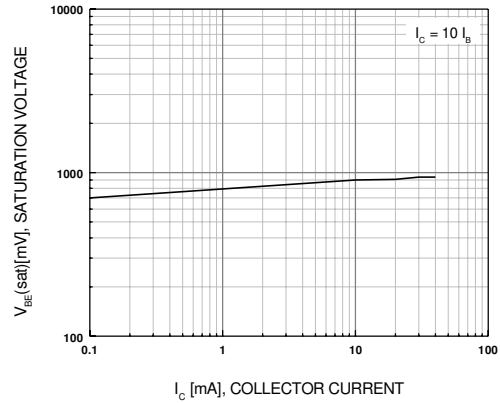


Figure 4. Base-Emitter Saturation Voltage

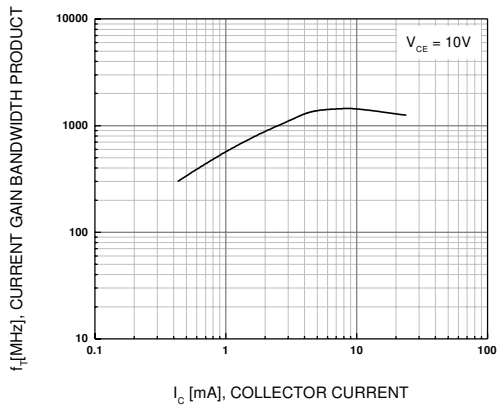


Figure 5.  $f_T - I_C$

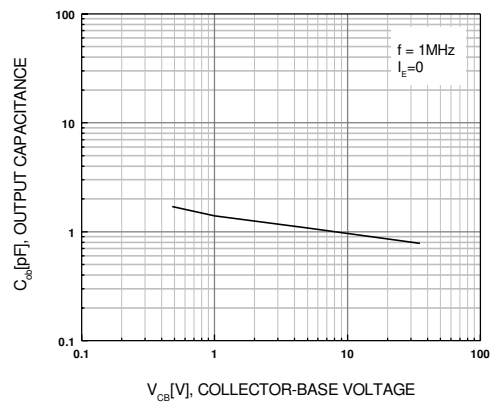


Figure 6. Output Capacitance

# Typical Characteristics (Continued)

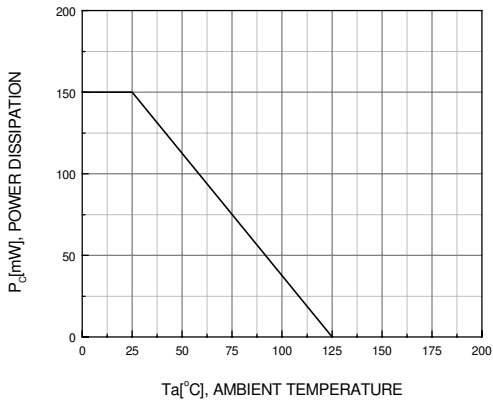


Figure 7. Power Derating

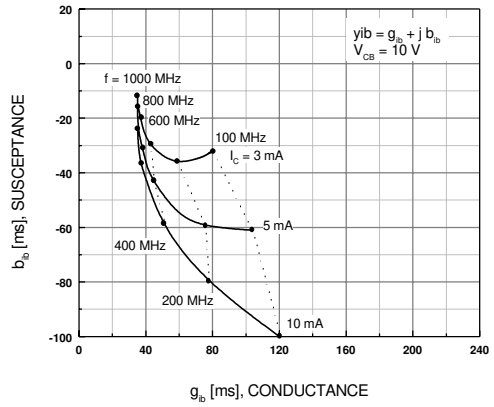


Figure 8.  $y_{ib} - f$

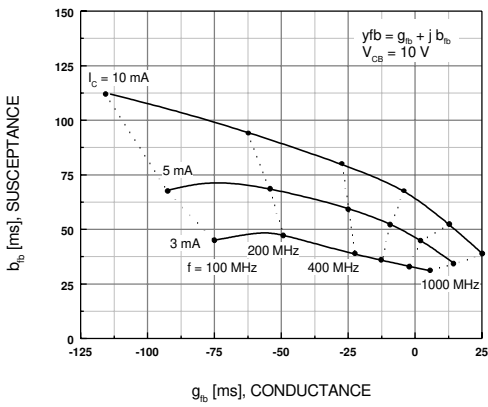


Figure 9.  $y_{fb} - f$

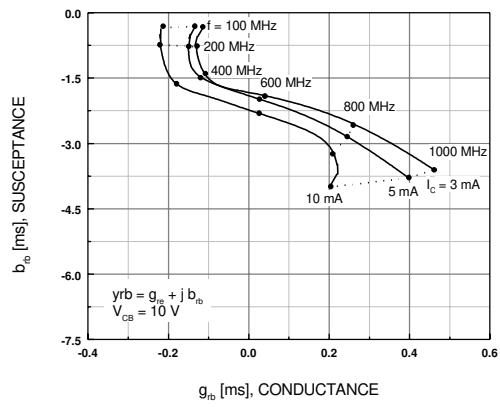


Figure 10.  $y_{rb} - f$

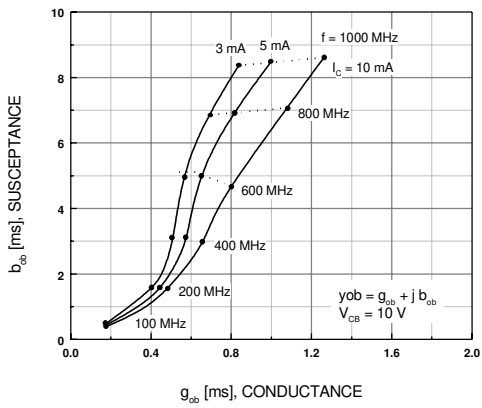
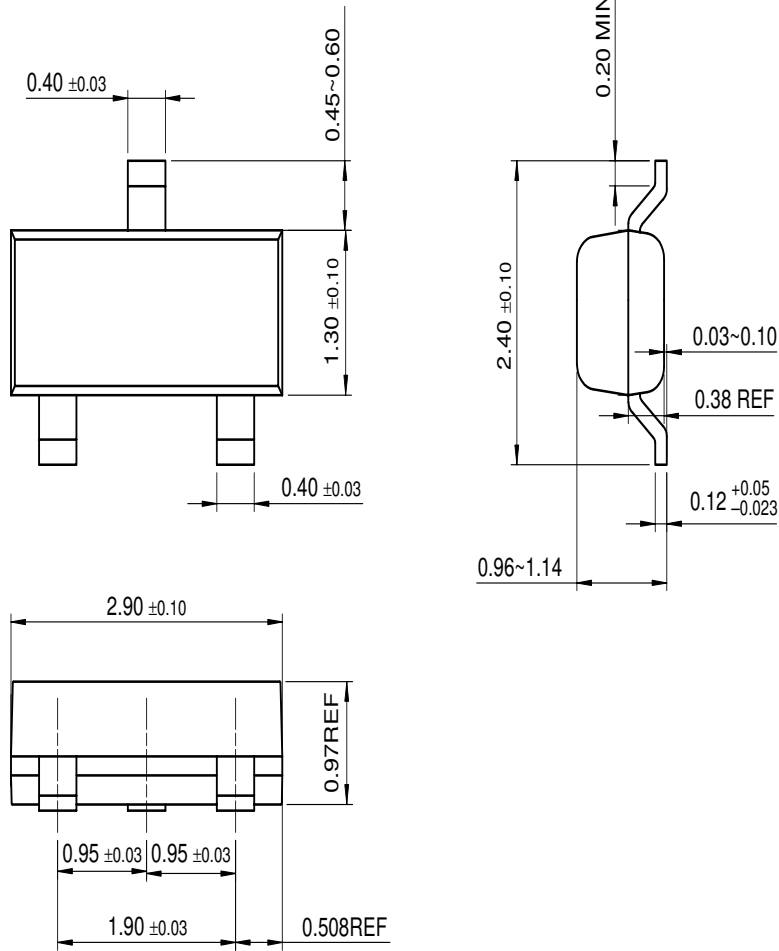


Figure 11.  $y_{ob} - f$

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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Bottomless™	FAST®	LittleFET™	Power247™	SuperSOT™-3
CoolFET™	FAST <sub>r</sub> ™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOL™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I <sup>2</sup> C™	OCX™	RapidConfigure™	UHC™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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