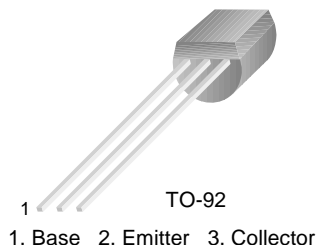


# KSP24

## VHF Transistor



## 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	40	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$I_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Collector Current	100	mA
$P_C$	Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	350	mW
	Derate Above $25^\circ\text{C}$	2.8	mW/ $^\circ\text{C}$
$T_J$	Junction Temperature	135	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55~150	$^\circ\text{C}$
$R_{TH(j-a)}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$	40			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$	30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}, I_C=0$	4.0			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=15\text{V}, I_E=0$			50	nA
$h_{FE}$	DC Current Gain	$V_{CE}=10\text{V}, I_C=8\text{mA}$	30			
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}, I_C=8\text{mA}, f=100\text{MHz}$	400	620		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		0.25	0.36	pF
$G_{CE}$	Conversion Gain (213 to 45MHz)	$V_{CC}=20\text{V}, I_C=8\text{mA}$ Oscillator Injection=150mV	19	24		dB
$G_{CE}$	Conversion Gain (60 to 45MHz)	$V_{CC}=20\text{V}, I_C=8\text{mA}$ Oscillator Injection=150mV	24	29		dB

# Typical Characteristics

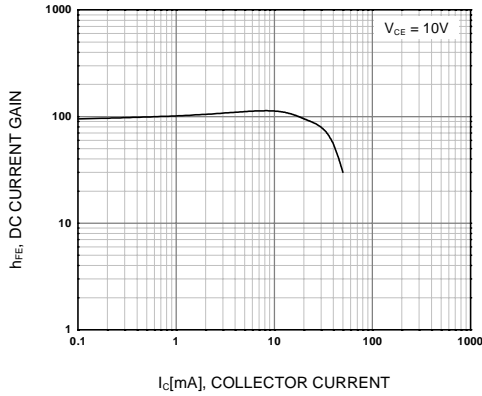


Figure 1. DC current Gain

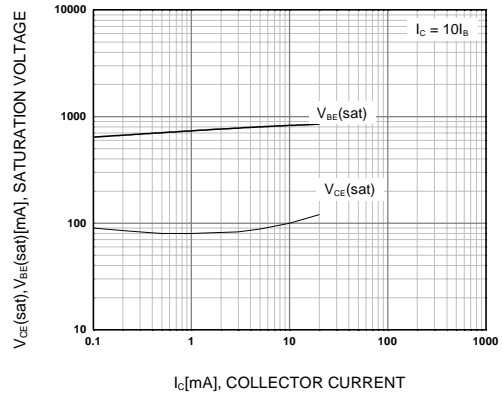


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

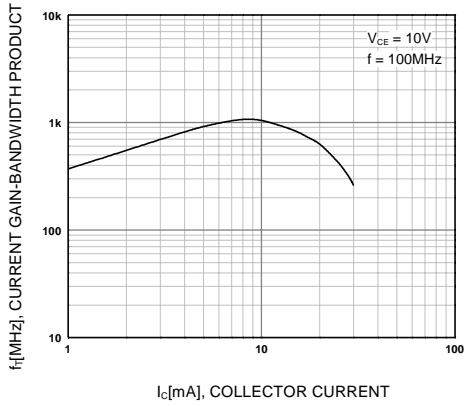


Figure 3. Current Gain Bandwidth Product

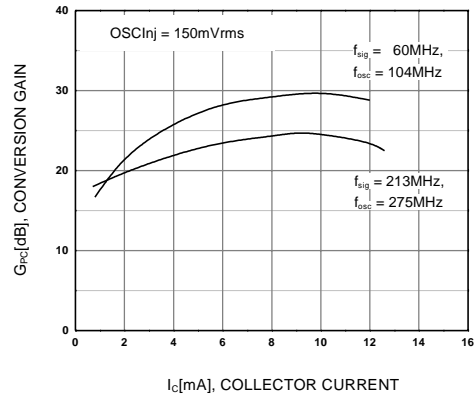


Figure 4. Conversion Gain versus Collector Current

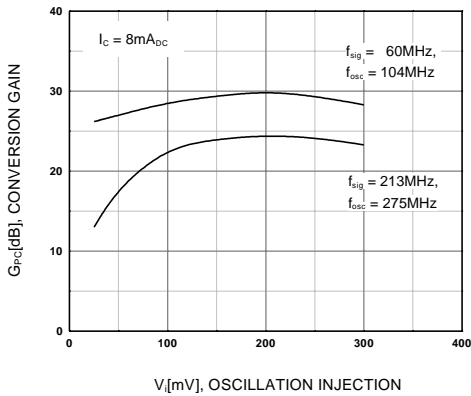


Figure 5. Conversion Gain versus Injection Level

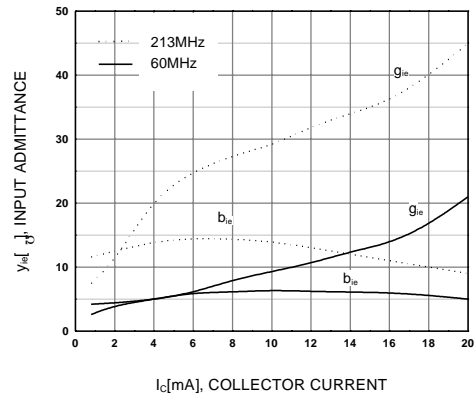


Figure 6. Input Admittance

Typical Characteristics (Continued)

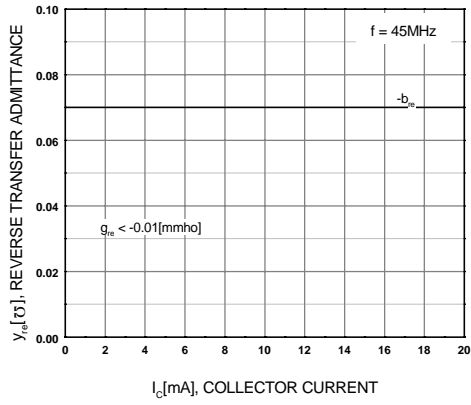


Figure 7. Reverse Transfer Admittance

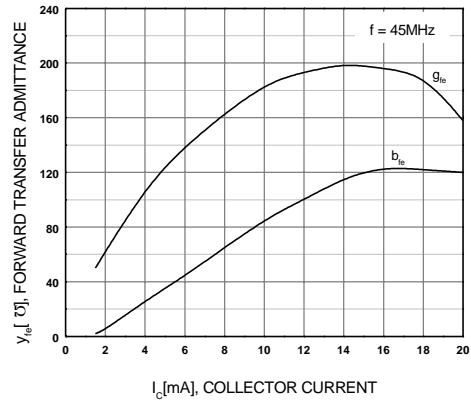


Figure 8. Forward Transfer Admittance

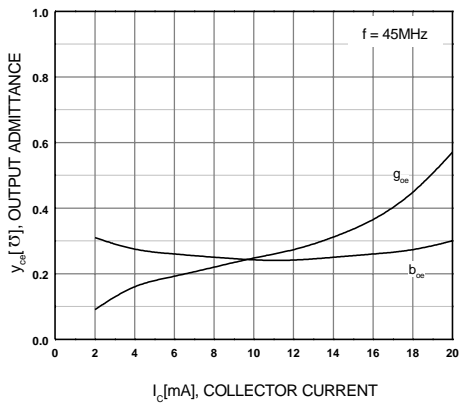
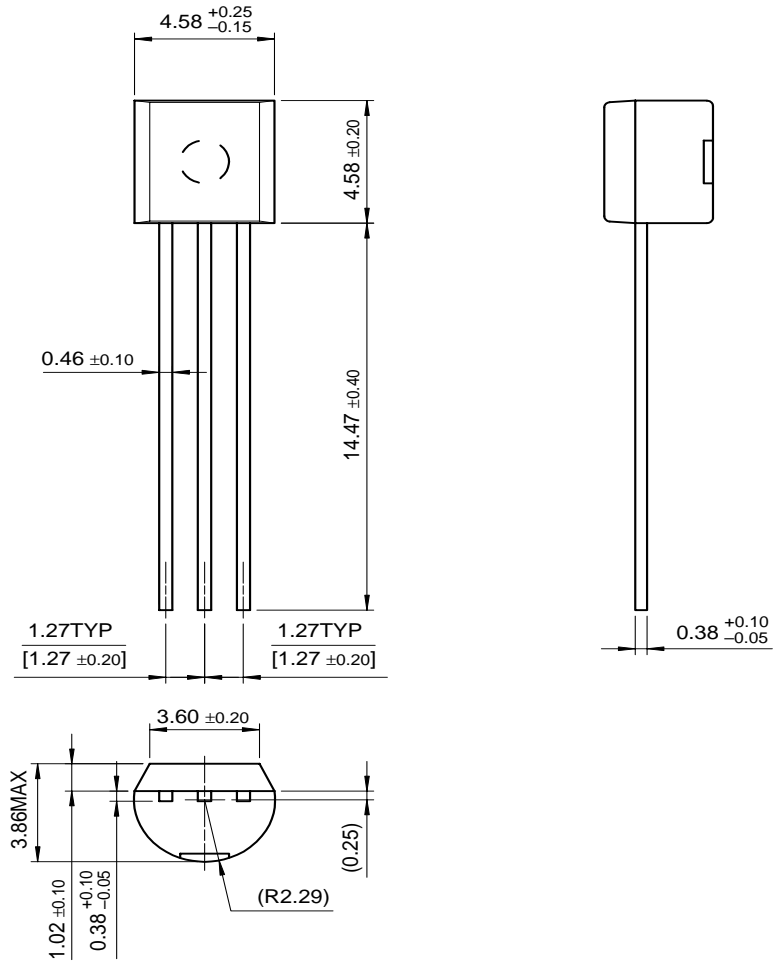


Figure 9. Output Admittance

# Package Dimensions

## TO-92



Dimensions in Millimeters

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