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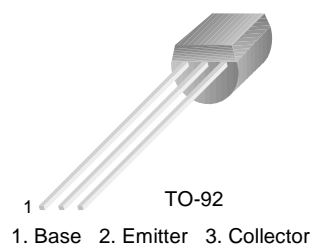
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## KSP24

### 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	$^\circ\text{C}/\text{W}$

#### 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

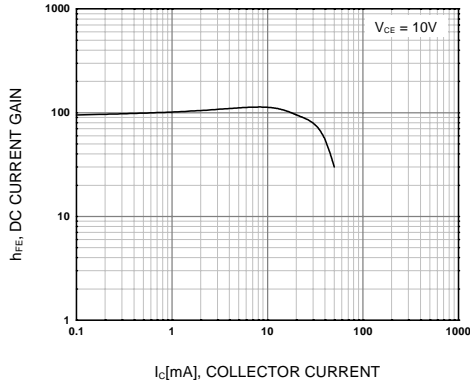


Figure 1. DC current Gain

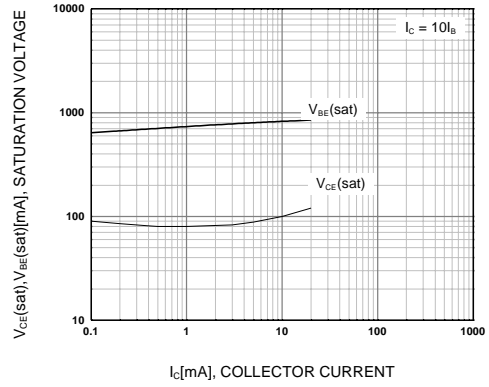


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

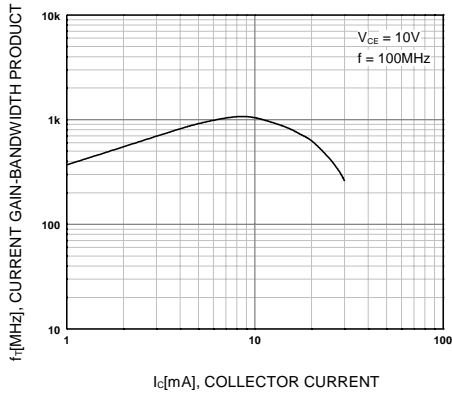


Figure 3. Current Gain Bandwidth Product

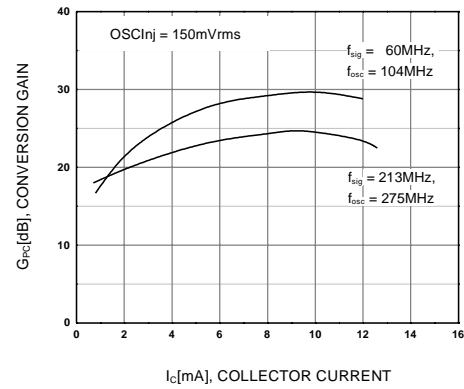


Figure 4. Conversion Gain versus Collector Current

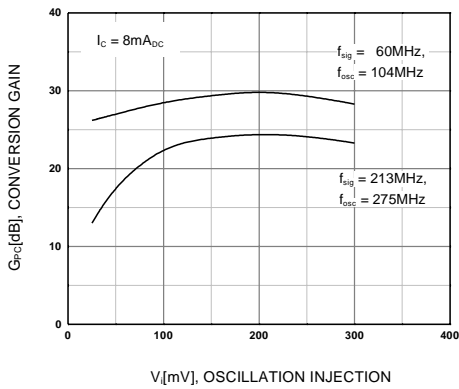


Figure 5. Conversion Gain versus Injection Level

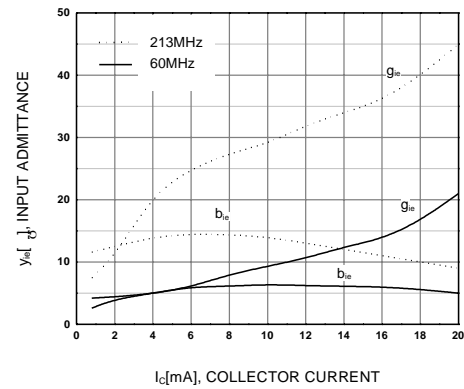
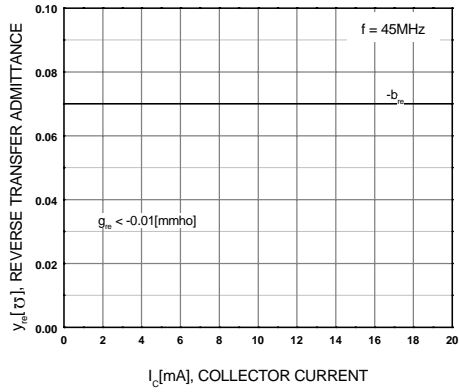
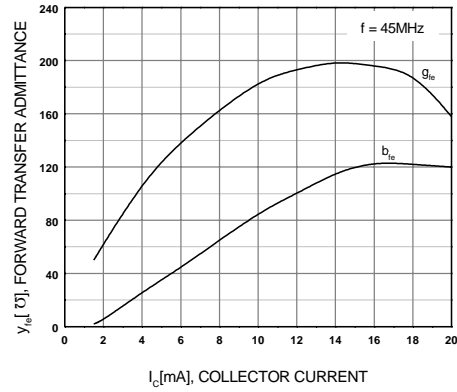


Figure 6. Input Admittance

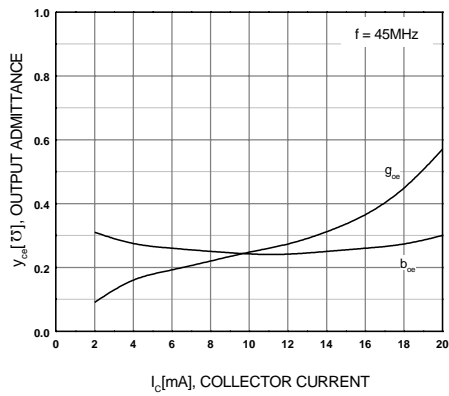
**Typical Characteristics** (Continued)



**Figure 7. Reverse Transfer Admittance**



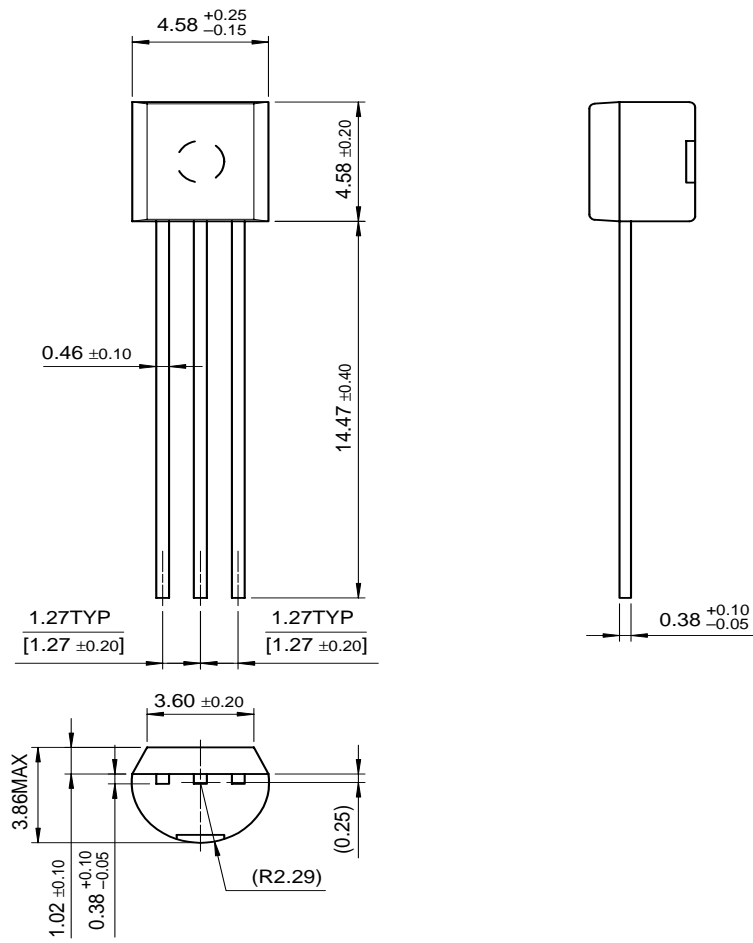
**Figure 8. Forward Transfer Admittance**



**Figure 9. Output Admittance**

**Package Dimensions**

**TO-92**



Dimensions in Millimeters

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