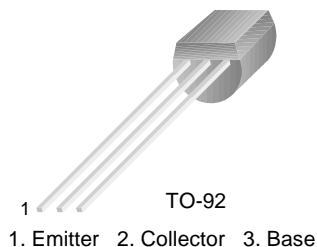


# KSC1730

## TV VHF, UHF Tuner Oscillator

- High Current Gain Bandwidth Product :  $f_T=1100\text{MHz}$
- Output Capacitance :  $C_{OB}=1.5\text{pF (MAX.)}$



## 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	250	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
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}, I_E=0$	30			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}, I_B=0$	15			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}, I_C=0$	5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=12\text{V}, I_E=0$			0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE}=10\text{V}, I_C=5\text{mA}$	40		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
$C_{c-rbb'}$	Collector-Base Time Constant	$V_{CE}=10\text{V}, I_E=5\text{mA}, f=31.9\text{MHz}$		10	20	ps

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE}$	40 ~ 80	70 ~ 140	120 ~ 240

# Typical Characteristics

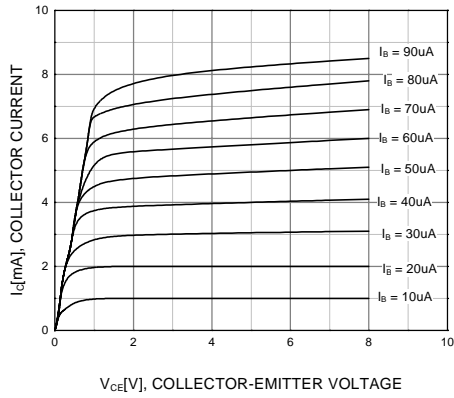


Figure 1. Static Characteristic

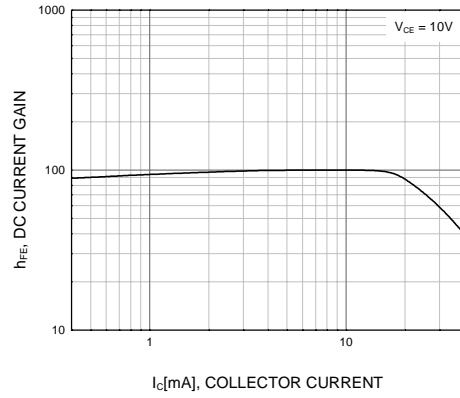


Figure 2. DC current Gain

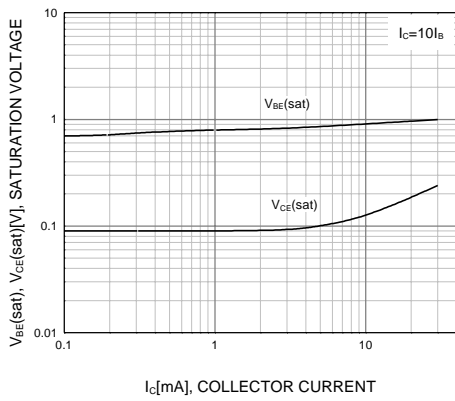


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

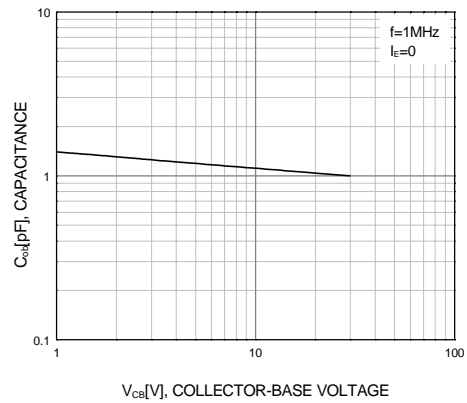


Figure 4. Collector Output Capacitance

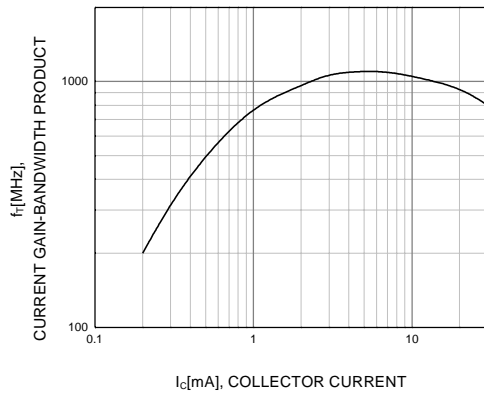


Figure 5. Current Gain Bandwidth Product

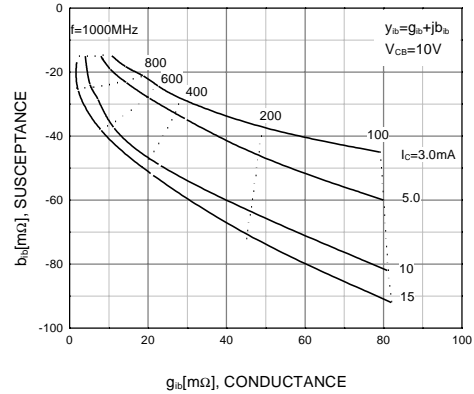


Figure 6. Input Admittance ( $y_{ib}$ ) vs. Frequency

Typical Characteristics (Continued)

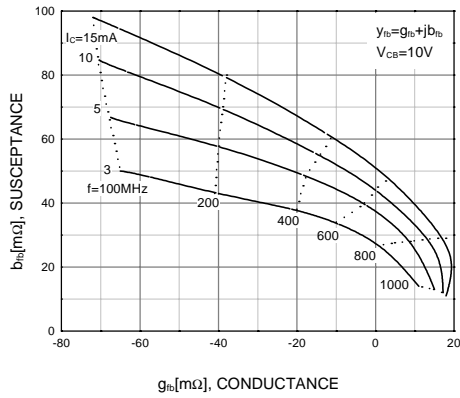


Figure 7. Forward Transfer Admittance ( $y_{fb}$ ) vs. Frequency

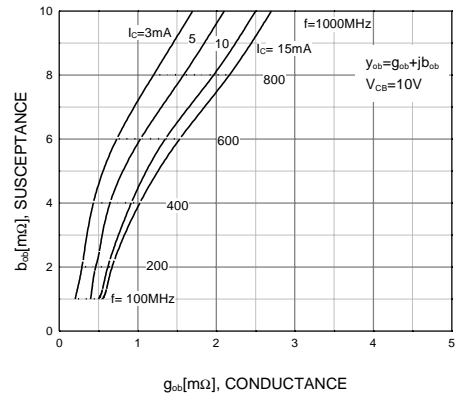


Figure 8. Output Admittance ( $y_{ob}$ ) vs. Frequency

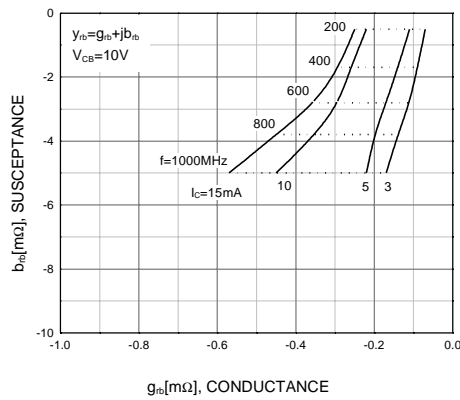
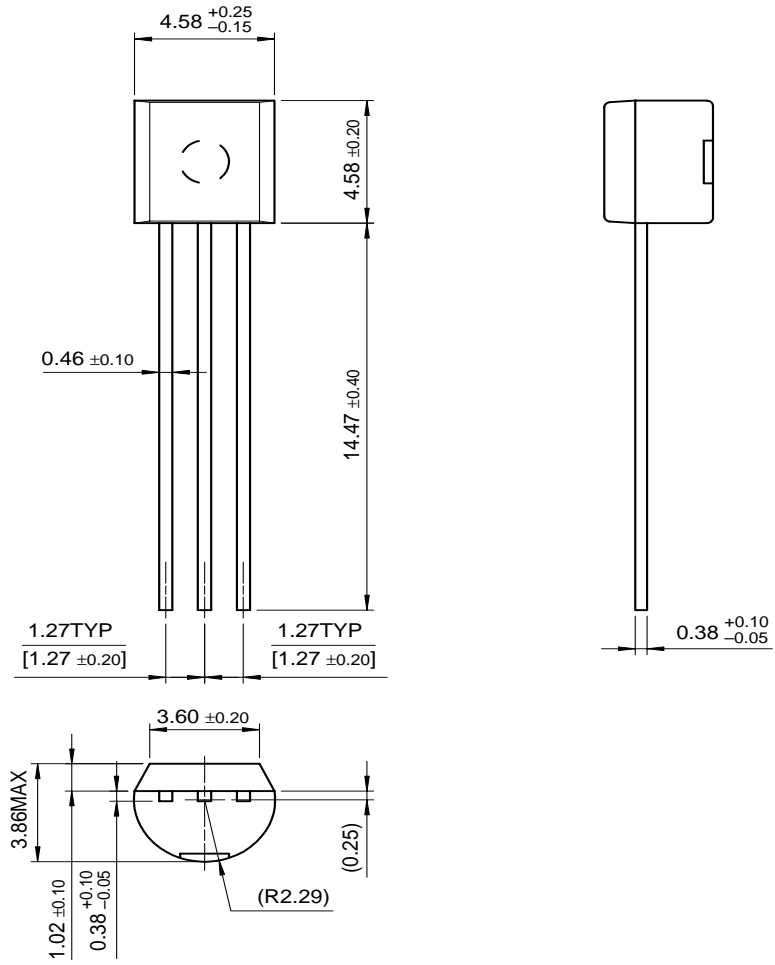


Figure 9. Reverse Transfer Admittance ( $y_{rb}$ ) vs. Frequency

# Package Dimensions

## TO-92



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

### Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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KSC1730  
NPN Epitaxial Silicon Transistor

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Features

- High Current Gain Bandwidth Product :  
 $f_T=1100\text{MHz}$
- Output Capacitance :  $C_{OB}=1.5\text{pF}$   
(MAX.)

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Applications

**TV VHF,UHF Tuner Oscillator**

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSC1730OBU	Full Production	\$0.053	<a href="#">TO-92</a>	3	BULK
KSC1730YTA	Full Production	\$0.053	<a href="#">TO-92</a>	3	TAPE REEL
KSC1730YBU	Full Production	\$0.053	<a href="#">TO-92</a>	3	BULK
KSC1730OTA	Full Production	\$0.053	<a href="#">TO-92</a>	3	TAPE REEL

\* 1,000 piece Budgetary Pricing

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