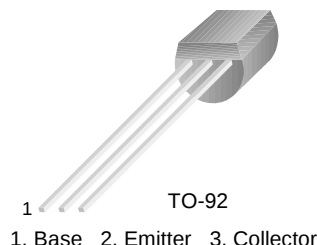


KSC1393

KSC1393

TV VHF Tuner RF Amplifier (Forward AGC)

- High Current Gain Bandwidth Product : $f_T=700\text{MHz}$ (TYP.)
- Low Noise Figure : $NF=3.0\text{dB}$ (MAX.) at $f=200\text{MHz}$
- Low Reverse Transfer Capacitance : $C_{RE}=0.5\text{pF}$ (MAX.)



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	20	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	$I_C=5\text{mA}$, $I_B=0$	30			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}$, $I_C=0$	4			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=20\text{V}$, $I_E=0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE}=10\text{V}$, $I_C=2\text{mA}$	40		180	
f_T	Current Gain Bandwidth Product	$V_{CE}=10\text{V}$, $I_C=3\text{mA}$	400	700		MHz
C_{RE}	Reverse Transfer Capacitance	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		0.35	0.5	pF
G_{PE}	Power Gain	$V_{CE}=10\text{V}$, $I_C=3\text{mA}$ $f=200\text{MHz}$	20	24		dB
I_{AGC}	AGC Current	I_E at $G_R=-30\text{dB}$, $f=200\text{MHz}$		-10	-12	mA
NF	Noise Figure	$V_{CE}=10\text{V}$, $I_C=3\text{mA}$ $f=200\text{MHz}$		2.0	3.0	dB

h_{FE} Classification

Classification	R	O	Y
h_{FE}	40 ~ 80	60 ~ 140	90 ~ 180

Typical Characteristics

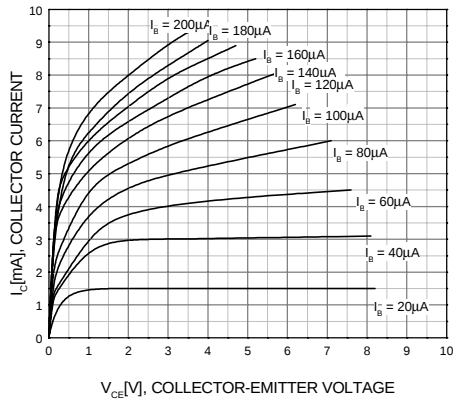


Figure 1. Static Characteristic

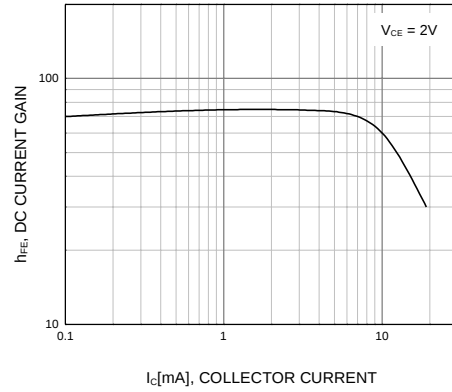


Figure 2. DC current Gain

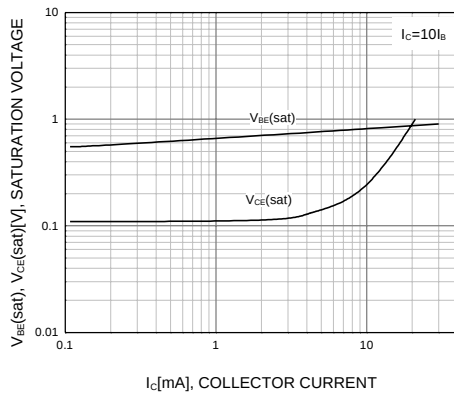


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

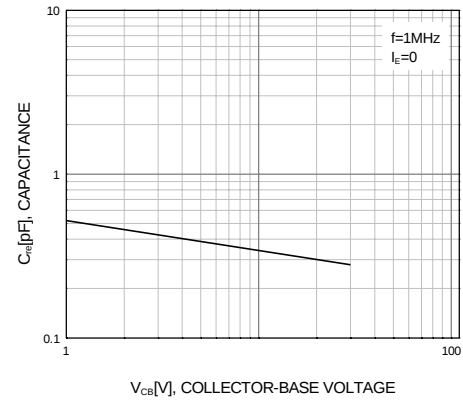


Figure 4. Reverse Capacitance

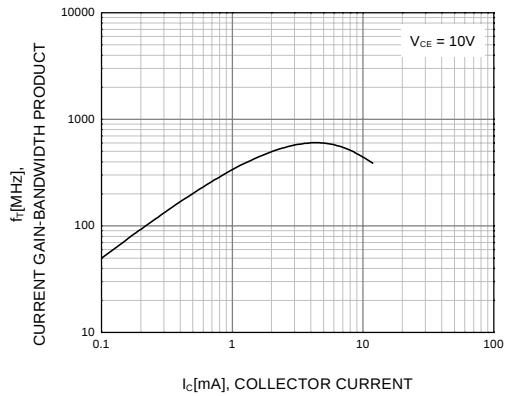


Figure 5. Current Gain Bandwidth Product

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.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

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KSC1393

NPN Epitaxial Silicon Transistor

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Features

- High Current Gain Bandwidth Product $f_T=700\text{MHz}$ (TYP.)
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Applications

TV VHF Tuner RF Amplifier (Forward AGC)

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Product status/pricing/packageing

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Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSC1393OBU	Full Production	Full Production	\$0.025	TO-92	3	BULK	Line 1: C1393 Line 3: O-&3
KSC1393OTA	Full Production	Full Production	\$0.025	TO-92	3	AMMO	Line 1: C1393 Line 3: O-&3

KSC1393RBU	Full Production	 Full Production	\$0.025	TO-92	3	BULK	Line 1: C1393 Line 3: R-&3
KSC1393RTA	Full Production	 Full Production	\$0.025	TO-92	3	AMMO	Line 1: C1393 Line 3: R-&3
KSC1393YBU	Full Production	 Full Production	\$0.025	TO-92	3	BULK	Line 1: C1393 Line 3: Y-&3
KSC1393YTA	Full Production	 Full Production	\$0.025	TO-92	3	AMMO	Line 1: C1393 Line 3: Y-&3

* Fairchild 1,000 piece Budgetary Pricing

** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a [Fairchild distributor](#) to obtain samples



Indicates product with Pb-free second-level interconnect. For more information [click here](#).

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Qualification Support

Click on a product for detailed qualification data

Product
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KSC1393OTA
KSC1393RBU
KSC1393RTA
KSC1393YBU
KSC1393YTA

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