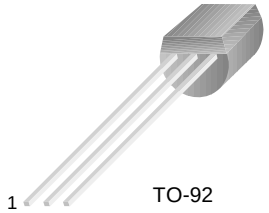
FAIRCHILD SEMICONDUCTOR™

KSC1394

TV VHF Tuner Mixer

- High Current Gain Bandwidth Product : f_T=700MHz
- High Power Gain : G_{PE}=20dB (MIN.) at f=200MHz
- Low Noise Figure : NF=3.5dB (MAX.) at f=200MHz



TO-92

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°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 Dissipation	250	mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C=10μA, I_E=0	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=5mA, I_B=0	30			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=10μA, I_C=0	4			V
I_{CBO}	Collector Cut-off Current	V_{CB}=20V, I_E=0			0.1	μA
h_{FE}	DC Current Gain	V_{CE}=10V, I_C=2mA	40		180	
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C=10mA, I_B=1mA			0.7	V
f_T	Current Gain Bandwidth Product	V_{CE}=10V, I_C=3mA	400	700		MHz
C_{RE}	Reverse Transfer Capacitance	V_{CB}=10V, I_E=0, f=1MHz,		0.35	0.5	pF
G_{PE}	Power Gain	V_{CE}=6V, I_C=3mA f=200MHz	20			dB
NF	Noise Figure	V_{CE}=6V, I_C=3mA R_S=50Ω,f=200MHz			3.5	dB

h_{FE} Classification

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

Typical Characteristics

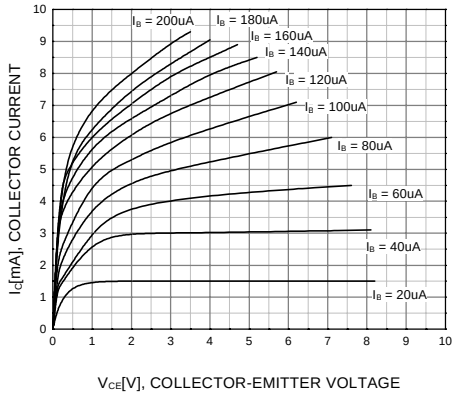


Figure 1. Static Characteristic

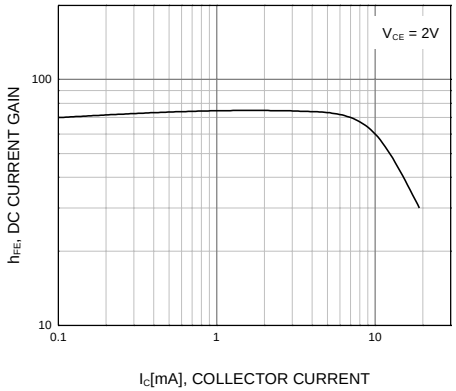


Figure 2. DC current Gain

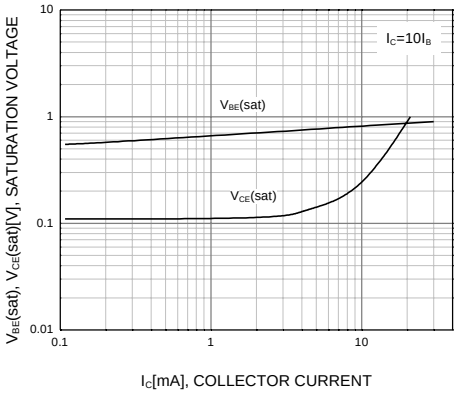


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

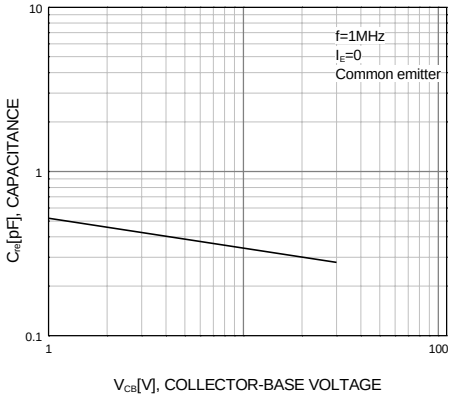


Figure 4. Reverse Capacitance

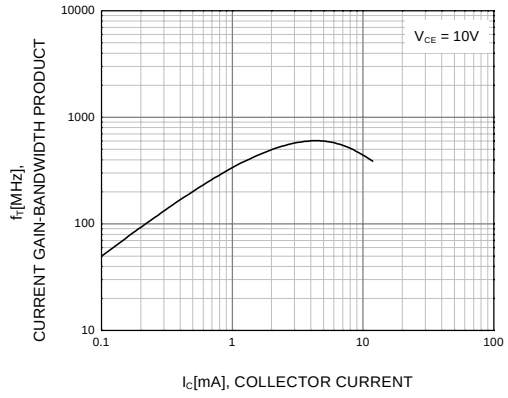


Figure 5. Current Gain Bandwidth Product

Package Demensions

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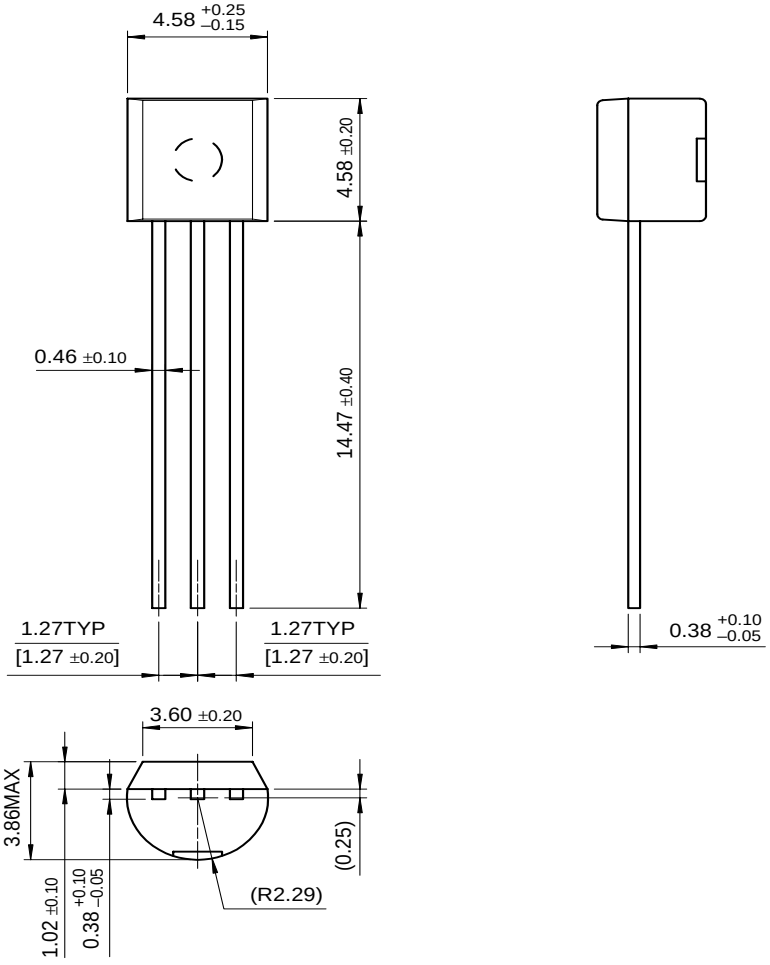

Dimensions in Millimeters

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POP™
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SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
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