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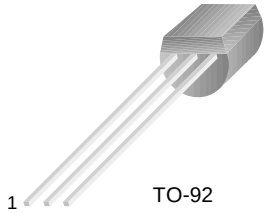
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
SEMICONDUCTOR®

KSC1393

TV VHF Tuner RF Amplifier (Forward AGC)

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



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 Power 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	
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}=10V, I_C=3mA f=200MHz	20	24		dB
I_{AGC}	AGC Current	I_E at G_R= -30dB, f=200MHz		-10	-12	mA
NF	Noise Figure	V_{CE}=10V, I_C= 3mA f=200MHz		2.0	3.0	dB

h_{FE} Classification

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

Typical Characteristics

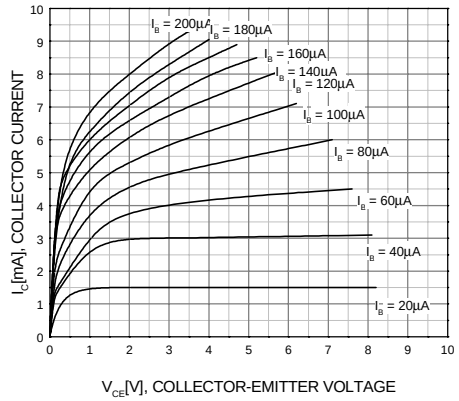


Figure 1. Static Characteristic

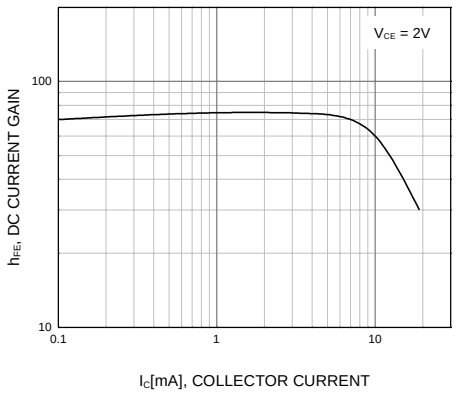


Figure 2. DC current Gain

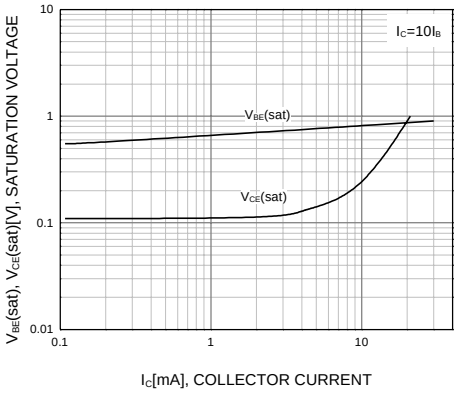


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

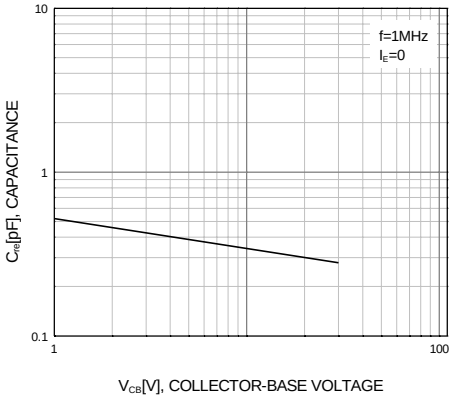


Figure 4. Reverse Capacitance

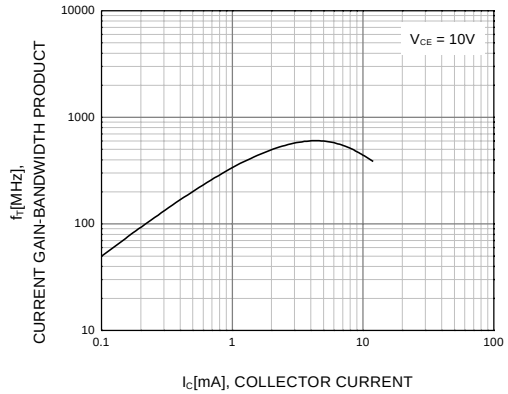
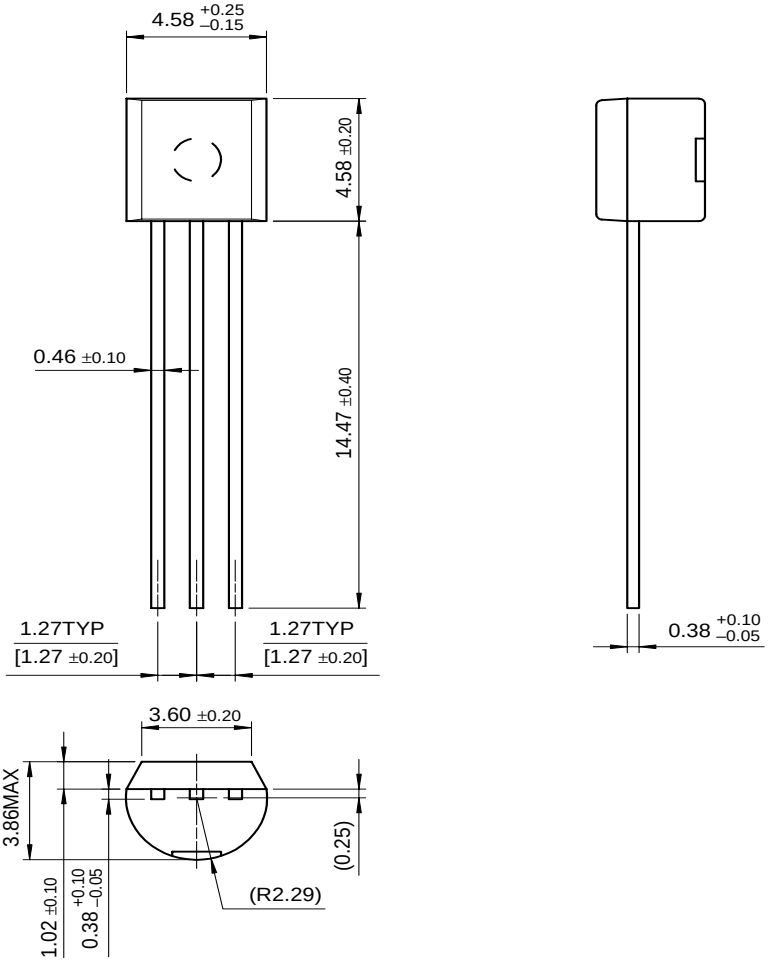


Figure 5. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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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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