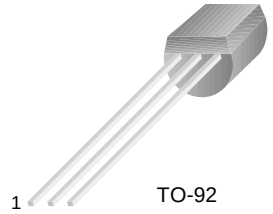
FAIRCHILD SEMICONDUCTOR®

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

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Typical Characteristics

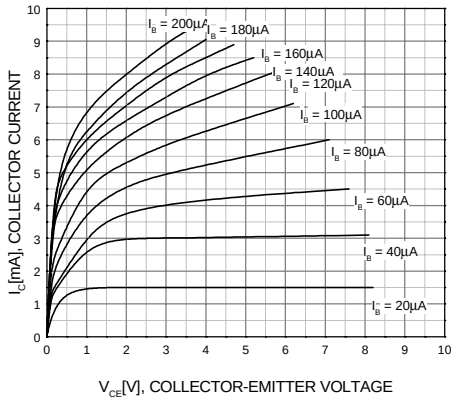

Figure 1. Static Characteristic

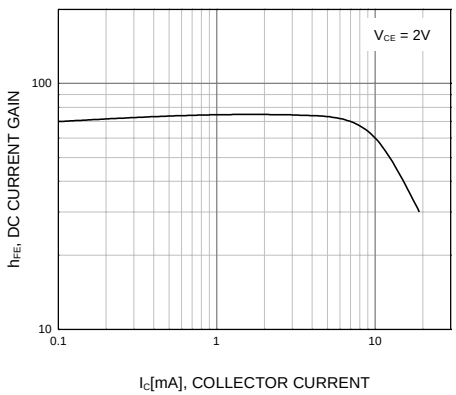

Figure 2. DC current Gain

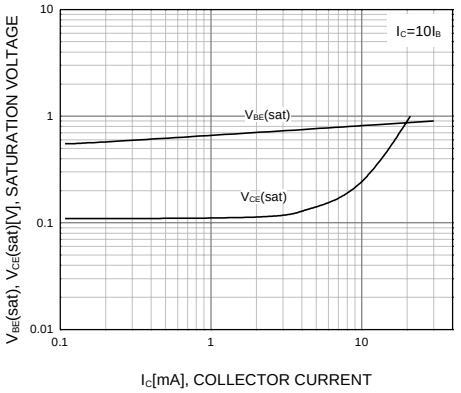

Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

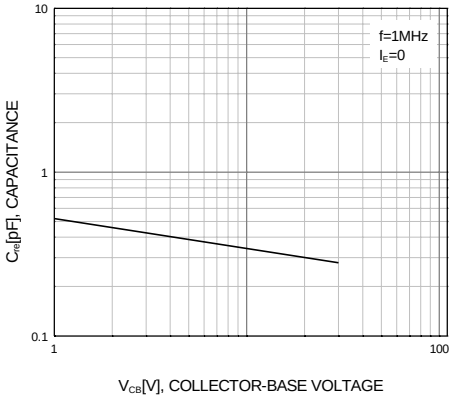

Figure 4. Reverse Capacitance

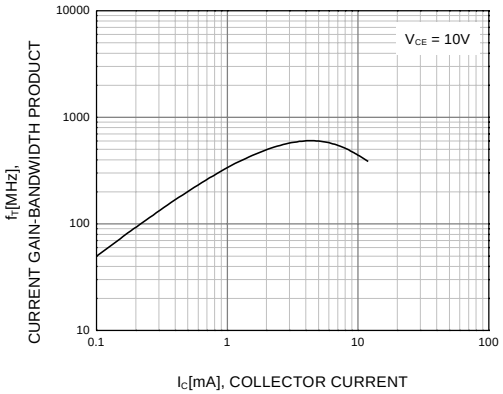

Figure 5. Current Gain Bandwidth Product

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Package Dimensions

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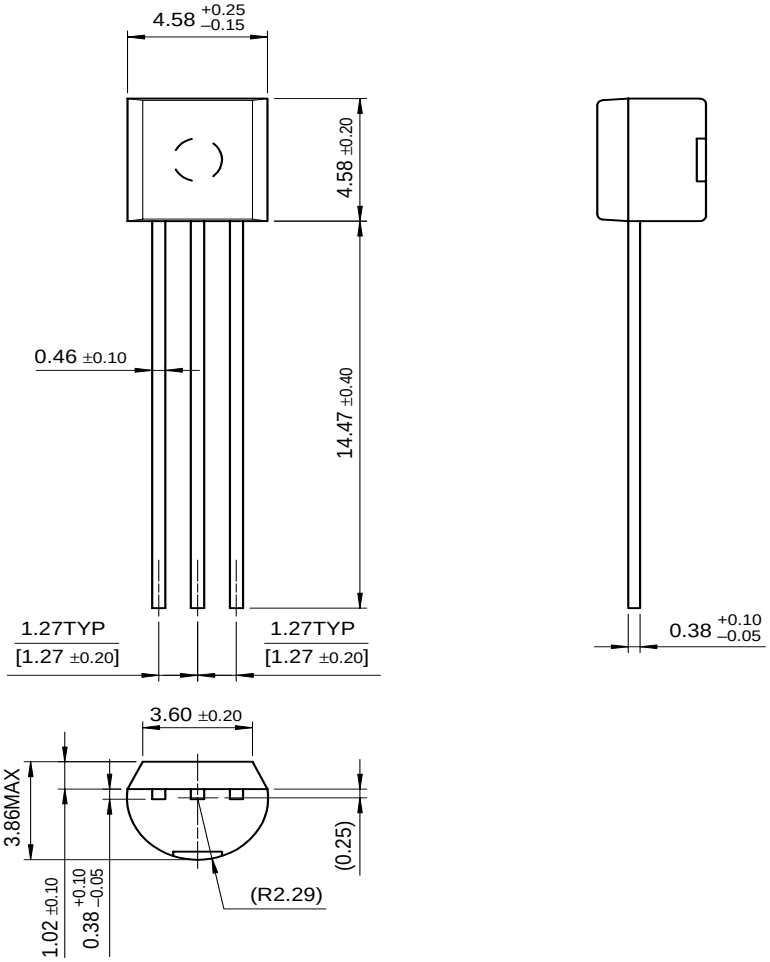

Dimensions in Millimeters

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Bottomless™	FAST®	LittleFET™	Power247™	SuperSOT™-3
CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
Across the board. Around the world.™		OCXPro™	RapidConnect™	UltraFET®
The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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