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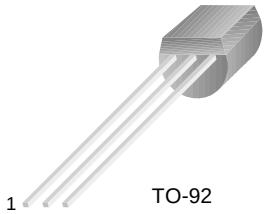
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes 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®

SS9014

Pre-Amplifier, Low Level & Low Noise

- High total power dissipation. (P_T=450mW)
- High h_{FE} and good linearity
- Complementary to SS9015



TO-92

1. Emitter 2. Base 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	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	450	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 =100μA, I_E =0	50			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C =1mA, I_B =0	45			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E =100μA, I_C =0	5			V
I_{CBO}	Collector Cut-off Current	V_{CB} =50V, I_E =0			50	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} =5V, I_C =0			50	nA
h_{FE}	DC Current Gain	V_{CE} =5V, I_C =1mA	60	280	1000	
V_{CE} (sat)	Collector-Base Saturation Voltage	I_C =100mA, I_B =5mA		0.14	0.3	
V_{BE} (sat)	Base-Emitter Saturation Voltage	I_C =100mA, I_B =5mA		0.84	1.0	V
V_{BE} (on)	Base-Emitter On Voltage	V_{CE} =5V, I_C =2mA	0.58	0.63	0.7	V
C_{ob}	Output Capacitance	V_{CB} =10V, I_E =0 f=1MHz		2.2	3.5	pF
f_T	Current Gain Bandwidth Product	V_{CE} =5V, I_C =10mA	150	270		MHz
NF	Noise Figure	V_{CE} =5V, I_C =0.2mA f=1KHz, R_S=2KΩ		0.9	10	dB

h_{FE} Classification

Classification	A	B	C	D
h_{FE}	60 ~ 150	100 ~ 300	200 ~ 600	400 ~ 1000

Typical Characteristics

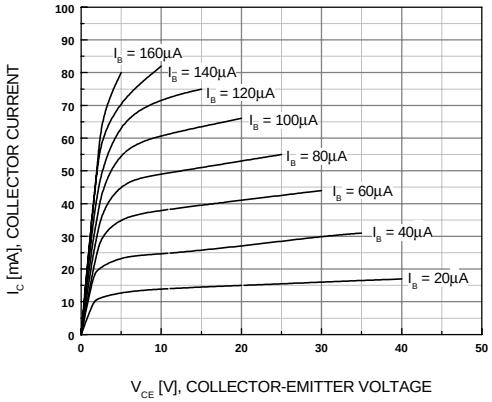


Figure 1. Static Characteristic

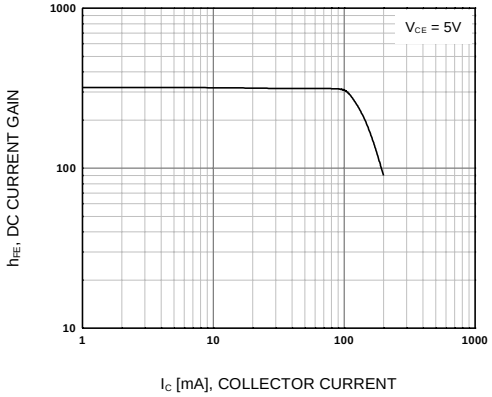


Figure 2. DC current Gain

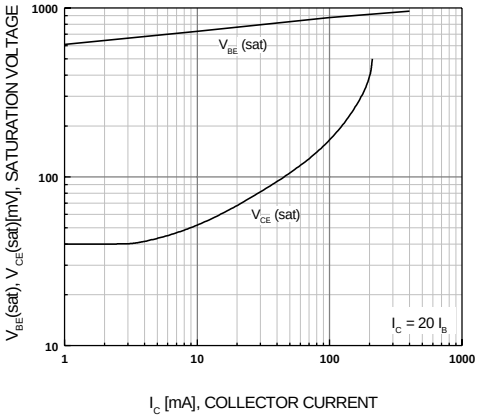


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

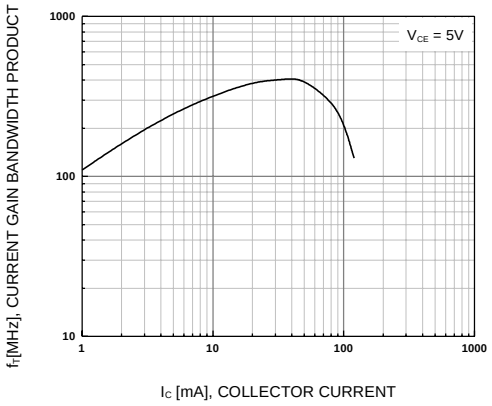
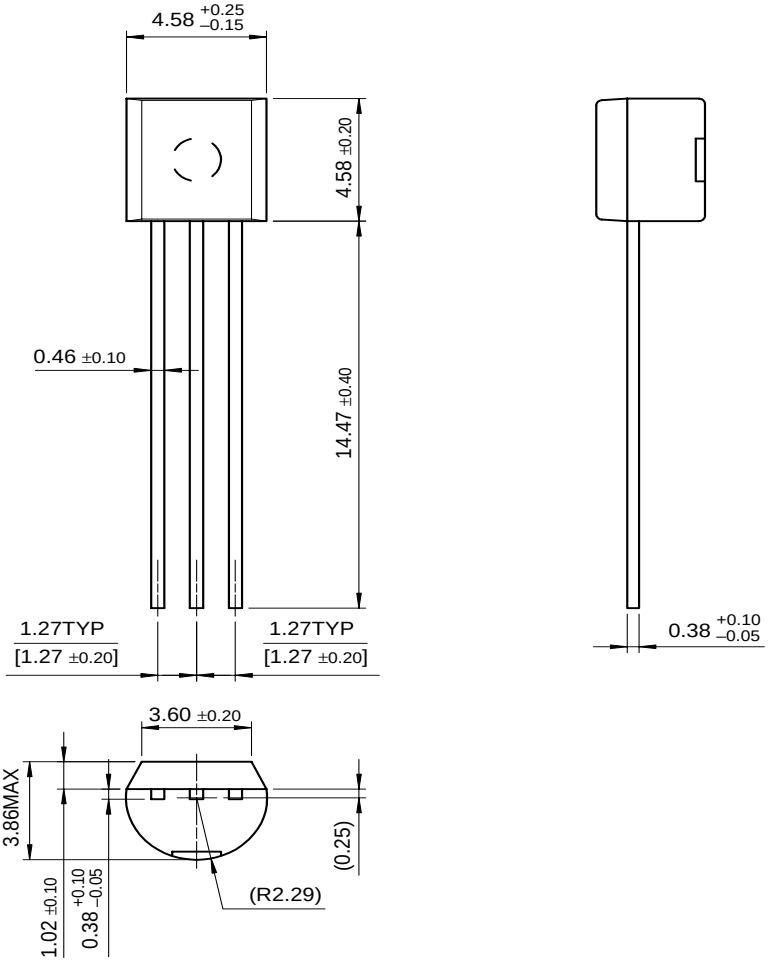


Figure 4. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
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E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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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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