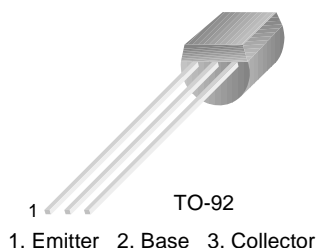


# SS9014

SS9014

## Pre-Amplifier, Low Level & Low Noise

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



## 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	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	$^\circ\text{C}$
$T_{STG}$	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	$I_C=100\mu\text{A}$ , $I_E=0$	50			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}$ , $I_B=0$	45			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=50\text{V}$ , $I_E=0$			50	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=5\text{V}$ , $I_C=0$			50	nA
$h_{FE}$	DC Current Gain	$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$	60	280	1000	
$V_{CE}(\text{sat})$	Collector-Base Saturation Voltage	$I_C=100\text{mA}$ , $I_B=5\text{mA}$		0.14	0.3	
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C=100\text{mA}$ , $I_B=5\text{mA}$		0.84	1.0	V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE}=5\text{V}$ , $I_C=2\text{mA}$	0.58	0.63	0.7	V
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}$ , $I_E=0$ $f=1\text{MHz}$		2.2	3.5	pF
$f_T$	Current Gain Bandwidth Product	$V_{CE}=5\text{V}$ , $I_C=10\text{mA}$	150	270		MHz
NF	Noise Figure	$V_{CE}=5\text{V}$ , $I_C=0.2\text{mA}$ $f=1\text{KHz}$ , $R_S=2\text{K}\Omega$		0.9	10	dB

## $h_{FE}$ Classification

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

## Typical Characteristics

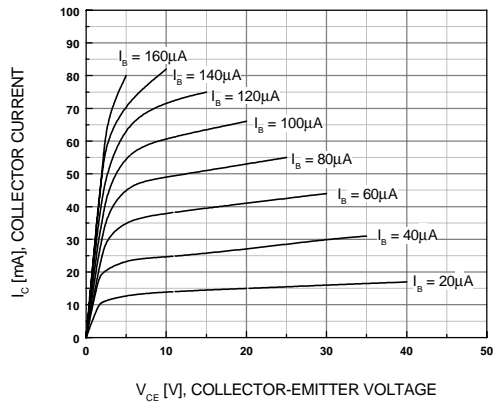


Figure 1. Static Characteristic

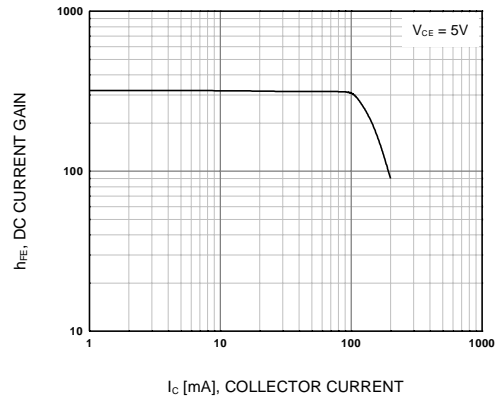


Figure 2. DC current Gain

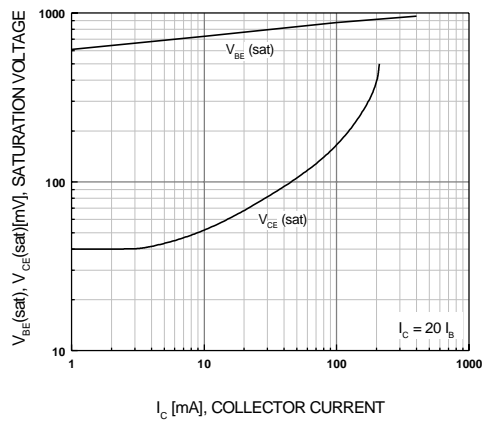


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

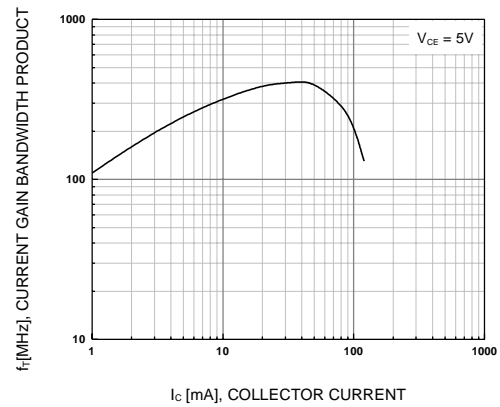
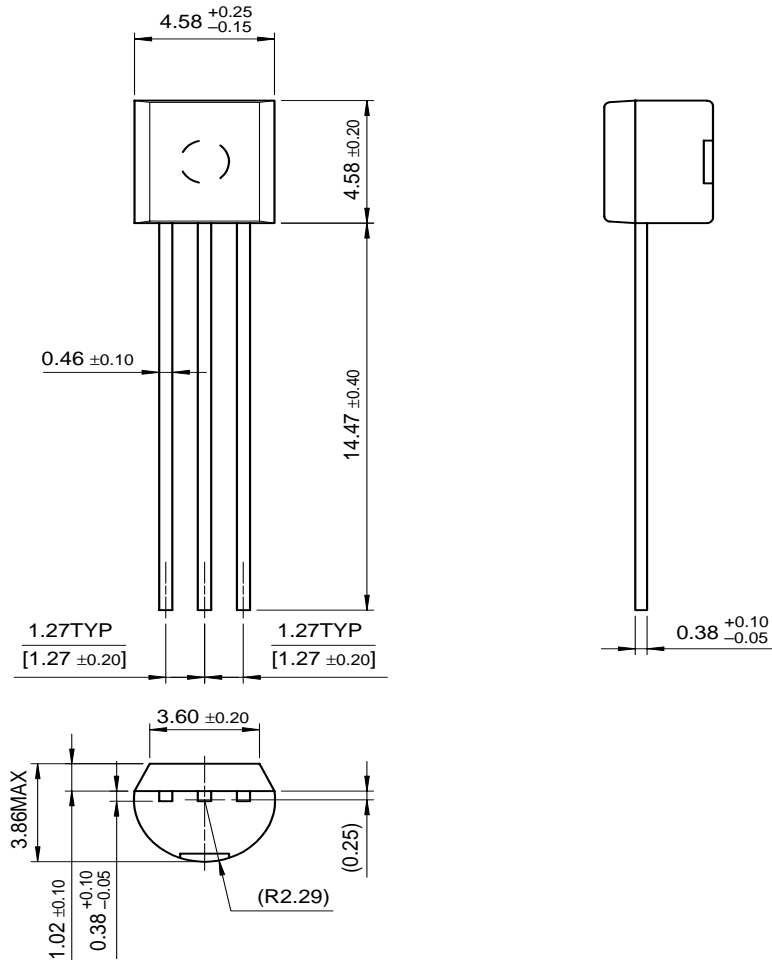


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## TO-92



Dimensions in Millimeters

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EcoSPARK <sup>TM</sup>	I <sup>2</sup> C <sup>TM</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>TM</sup> -6	
E <sup>2</sup> CMOS <sup>TM</sup>	ISOPLANAR <sup>TM</sup>	QFET <sup>TM</sup>	SuperSOT <sup>TM</sup> -8	
EnSigna <sup>TM</sup>	LittleFET <sup>TM</sup>	QS <sup>TM</sup>	SyncFET <sup>TM</sup>	
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