

SS9011

**AM Converter, AM/FM IF Amplifier
General Purpose Transistor**



TO-92
1. Emitter 2. Base 3. Collector

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	30	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	30	A
P_C	Collector Dissipation	400	W
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	$I_C = 1\text{mA}, I_B = 0$	30			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}, I_C = 0$	5			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 50\text{V}, I_E = 0$			100	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			100	nA
h_{FE}	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	28	90	198	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.08	0.3	V
$V_{BE}(\text{on})$	Base-Emitter on Voltage	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	0.65	0.7	0.75	V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$	150	1.5 370		pF
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$		2.0		MHz
NF	Noise Figure	$V_{CE} = 5\text{V}, I_C = 1.0\text{mA}$ $f = 1\text{MHz}, R_S = 500\Omega$			4.0	dB

h_{FE} Classification

Classification	D	E	F	G	H	I
h_{FE}	28 ~ 45	39 ~ 60	54 ~ 80	72 ~ 108	97 ~ 146	132 ~ 198

Typical Characteristics

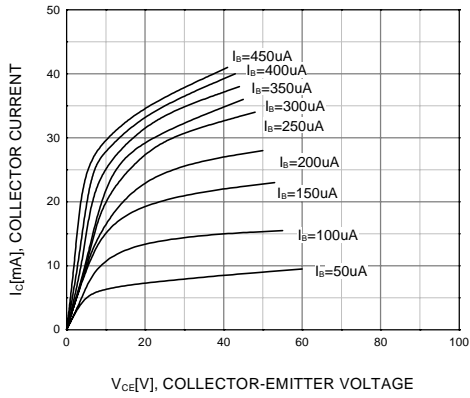


Figure 1. Static Characteristic

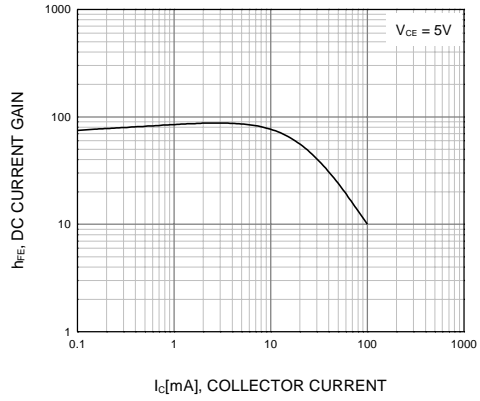


Figure 2. DC current Gain

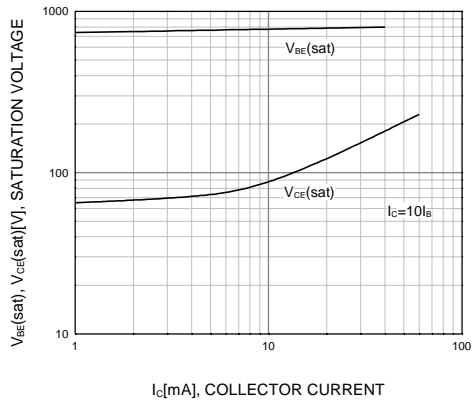


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

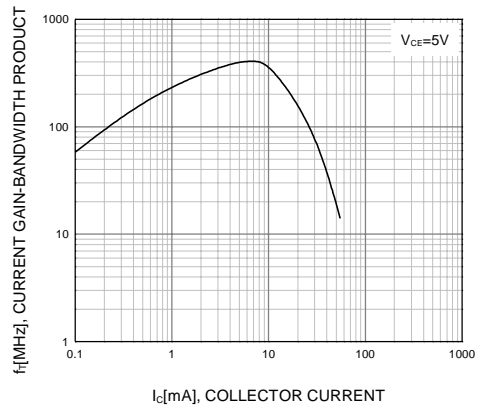
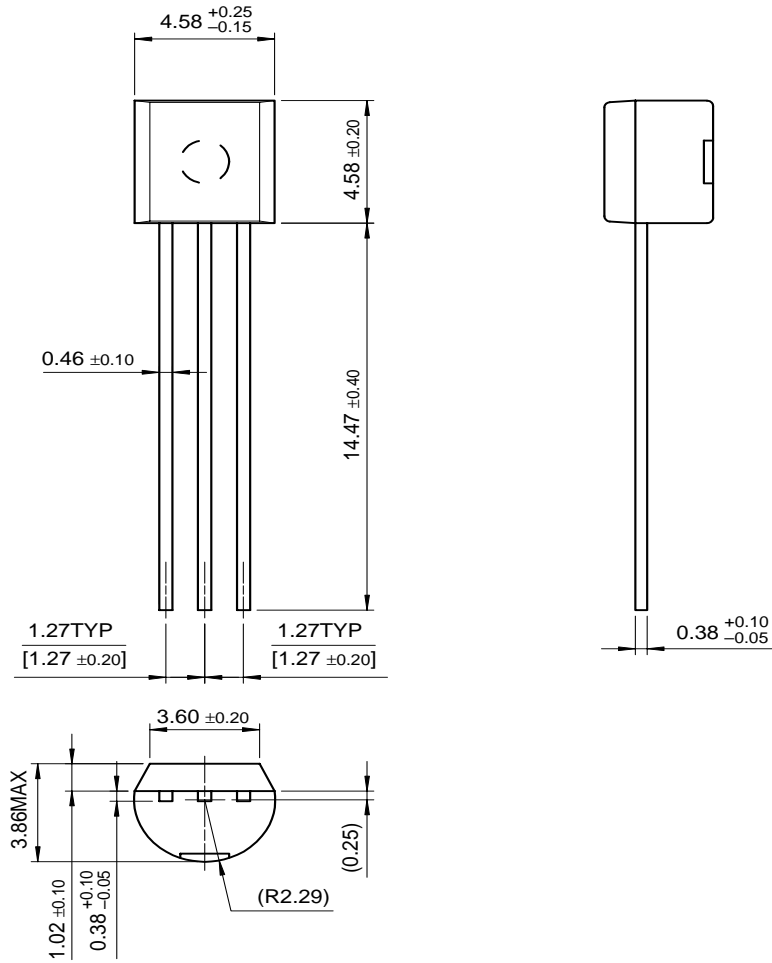


Figure 4. Current Gain Bandwidth Product

Package Dimensions

SS9011

TO-92



Dimensions in Millimeters

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