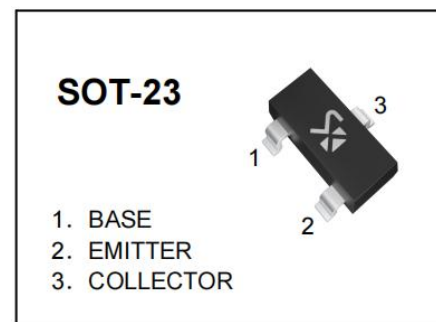


NPN Silicon RF Transistor

- Ultra high frequency low noise transistor
- Silicon epitaxial bipolar process
- High power gain, low noise figure
- High dynamic range and ideal current characteristics
- SOT-23 chip package, mainly used in VHF, UHF and CATV
- High frequency wideband low noise amplifier



Features

- High gain: $|S_{21e}|^2$ TYP. Value is 11.5dB @ $V_{CE}=10V, I_C=20mA, f=1GHz$
- Low noise: NF TYP. Value is 1.3dB @ $V_{CE}=10V, I_C=7mA, f=1GHz$
- f_T TYP. Value is 7GHz @ $V_{CE}=10V, I_C=20mA, f=1GHz$

Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Collector Current -Continuous	I_C	100	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-65~+150	$^\circ C$

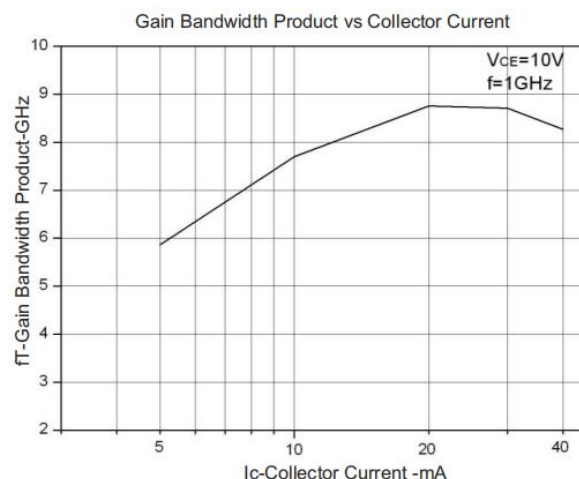
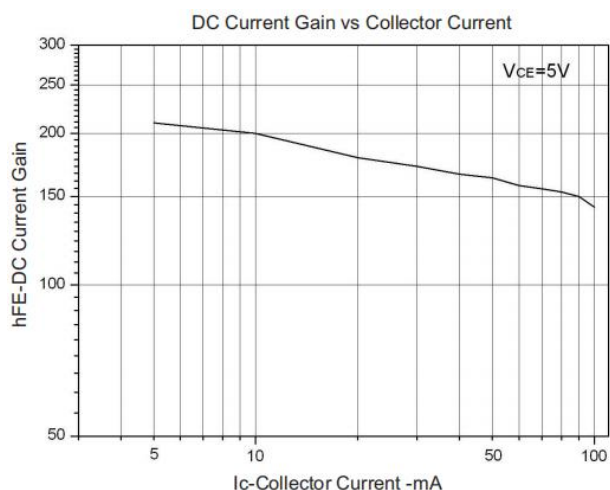
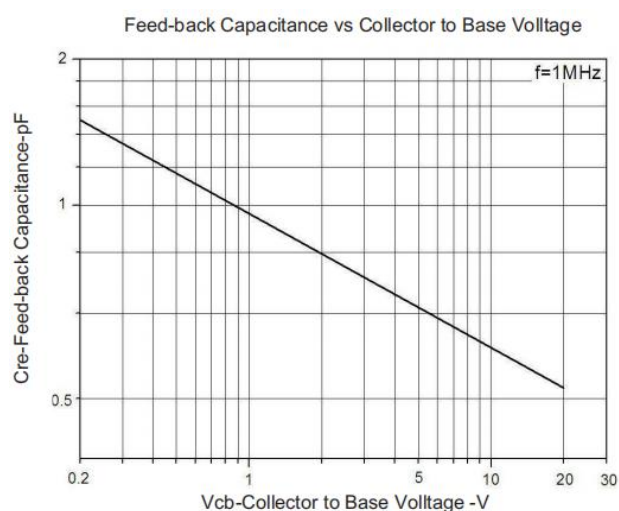
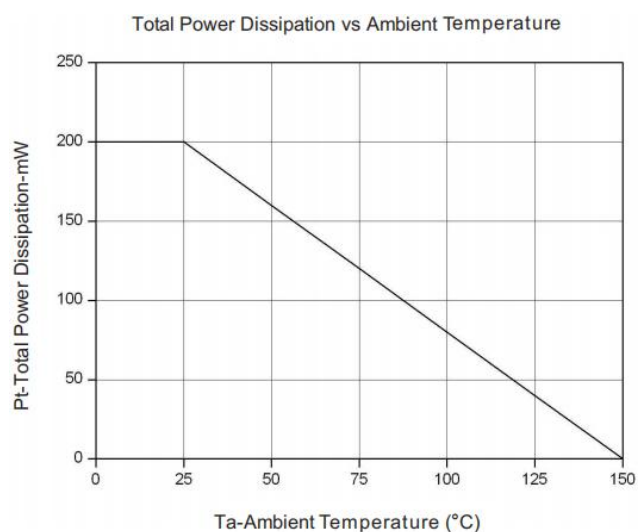
Electrical Characteristics ($T_A=25^\circ C$, unless otherwise specified)

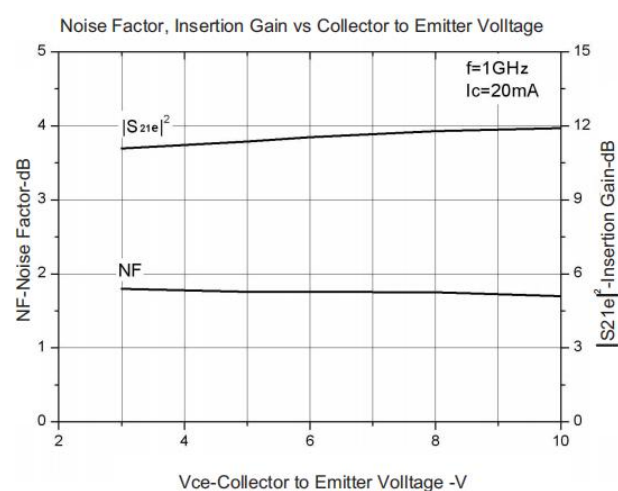
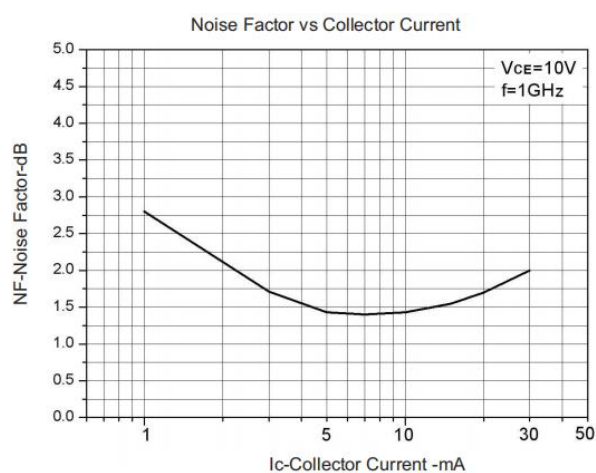
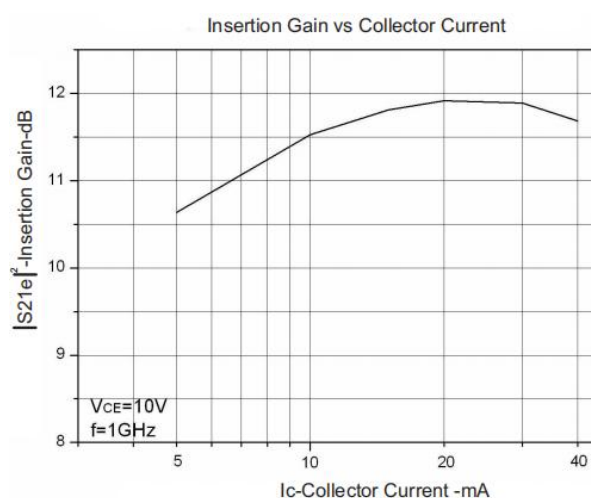
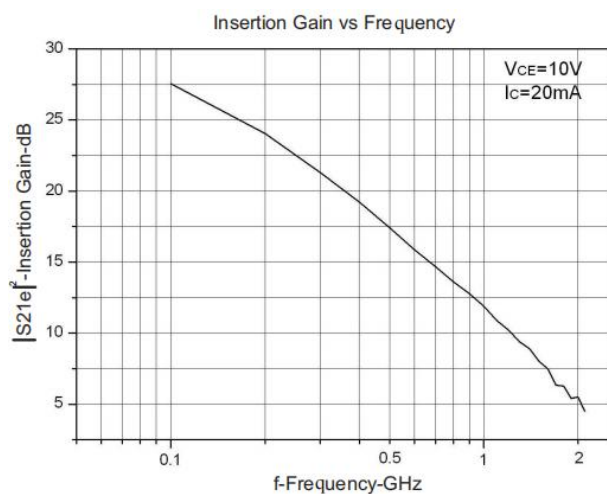
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\mu A, I_E=0$	20			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\mu A, I_B=0$	12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	2.5			V
Collector cut-off current	I_{CBO}	$V_{CB}=10V, I_E=0$			0.1	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=1V, I_C=0$			0.1	nA
DC current gain	h_{FE}	$V_{CE}=10V, I_C=20mA$	90	150	250	
ransition frequency	f_T	$V_{CE}=10V, I_C=20mA$	6	7		GHz
Feed-Back Capacitance	C_{re}	$V_{CB}=10V, I_E=0mA, f=1MHz$		0.65		pF
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE}=10V, I_C=20mA, f=1GHz$	11	11.5		dB
Noise Figure	NF	$V_{CE}=10V, I_C=7mA, f=1GHz$		1.3	1.8	dB

HFE Classification(@ $V_{CE}=10V, I_C=20mA$)

Classification	B	C	D
Marking	R24	R25	
HFE	90-140	120-180	170-250

Typical Characteristics

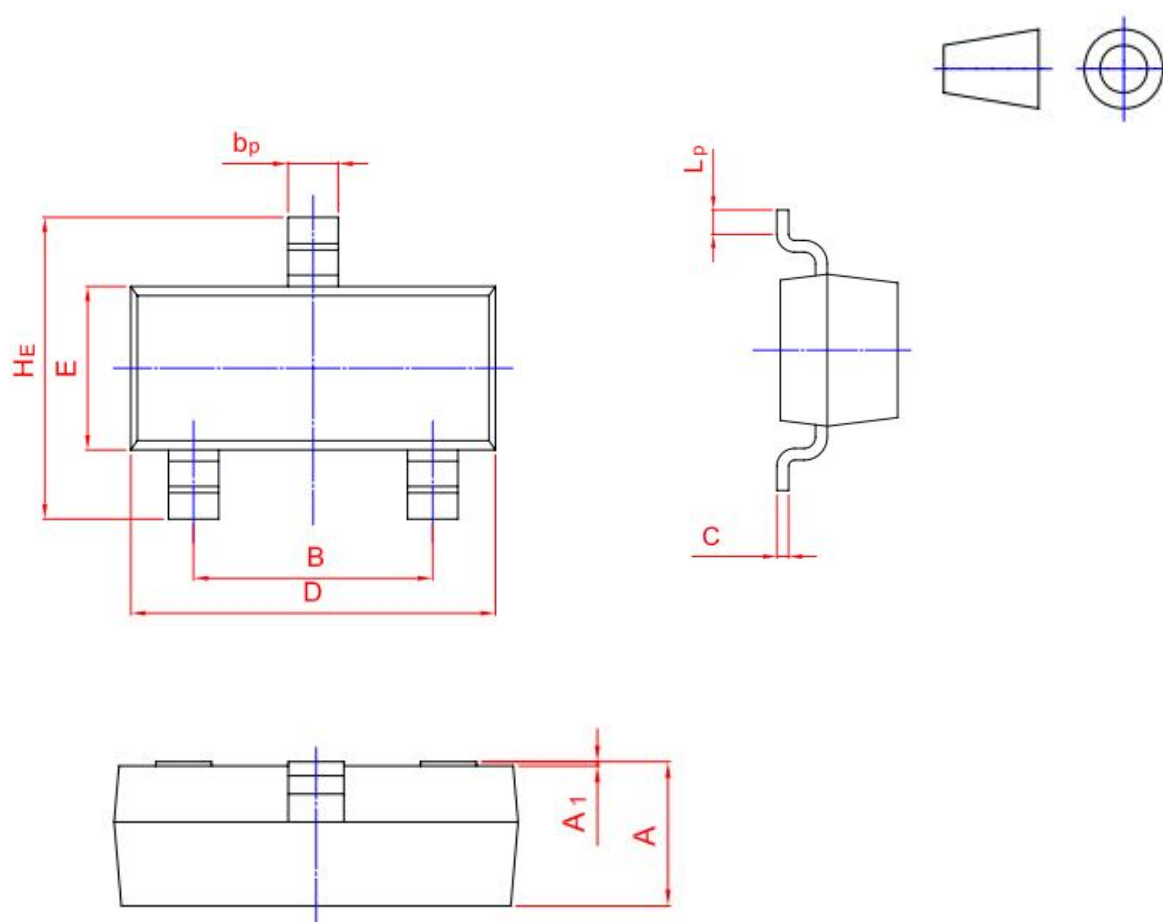




Package Information

SOT-23

Dimensions in mm



UNIT	A	B	bp	C	D	E	HE	A ₁	L _p
Mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.55
	0.95	1.78	0.30	0.08	2.70	1.20	2.20	0.013	0.20