

NPN Silicon RF Transistor

Features

- High gain: $|S_{21e}|^2$ TYP.Value is 11dB @ $V_{CE}=3V, I_C=7mA, f=1GHz$
- Low noise:NF TYP.Value is 1.4dB @ $V_{CE}=3V, I_C=7mA, f=1GHz$
- f_T TYP.Value is 4.5GHz @ $V_{CE}=3V, I_C=7mA, f=1GHz$

Description

2SC4226 is an ultra-high frequency low-noise transistor that adopts a planar NPN silicon epitaxial bipolar process and features high powerincrease.It features high efficiency and low noise characteristics. It adopts SOT-323 packaging and is suitable for high-density surface mount installation, mainly used for High-frequency low-noise amplifiers such as VHF, UHF and CATV.



Absolute Maximum Ratings (T_A=25°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	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65~+150	°C

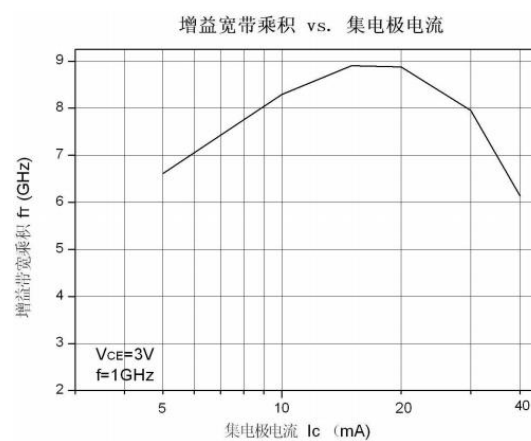
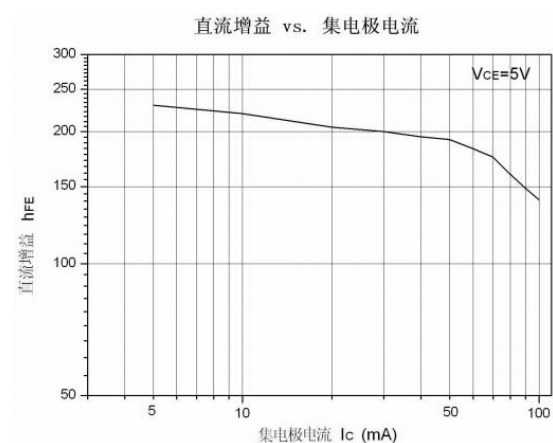
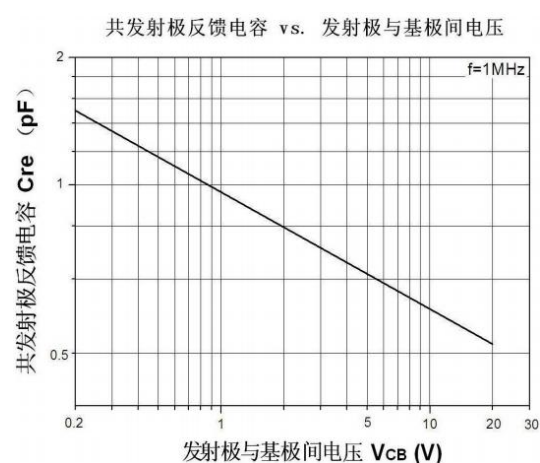
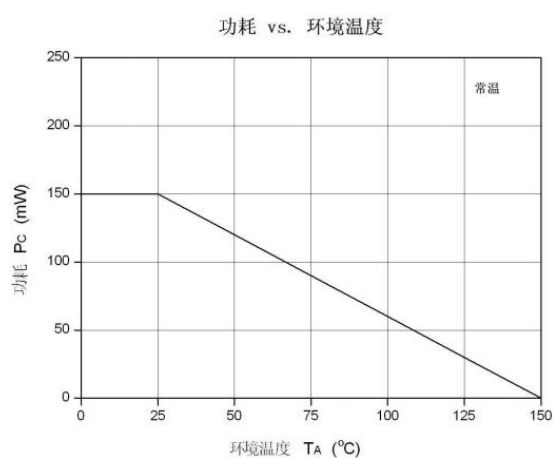
Electrical Characteristics (T_a=25°C, unless otherwise specified)

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	$V_{(BR)CEO}$	$I_C=10\mu A, I_B=0$	12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	2.5			V
Collector cut-off current	I_{CBO}	$V_{CB}=10V, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=1V, I_C=0$			0.1	μA
DC current gain	h_{FE}	$V_{CE}=3V, I_C=7mA$	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	1.0	pF
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE}=3V, I_C=5mA, f=1GHz$		10.7		dB
		$V_{CE}=3V, I_C=7mA, f=1GHz$		11		dB

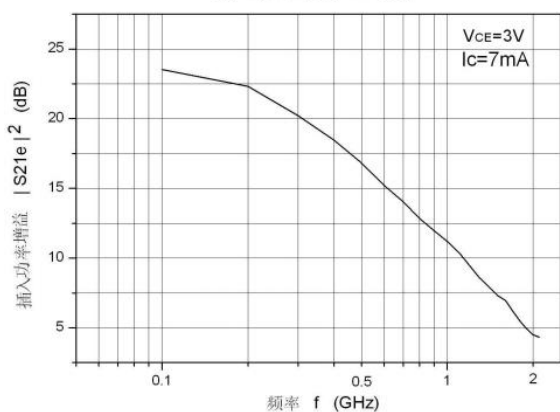
HFE Classification(@ $V_{CE}=3V, I_C=7mA$)

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

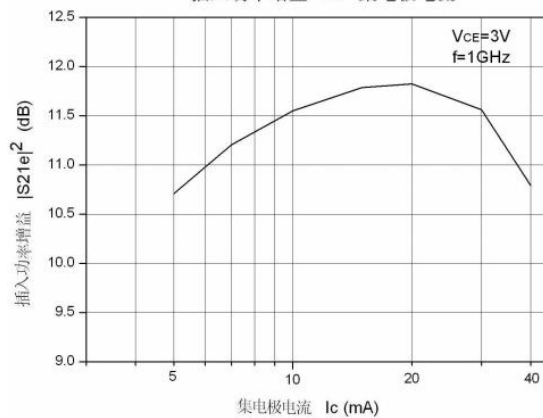
Typical Characteristics



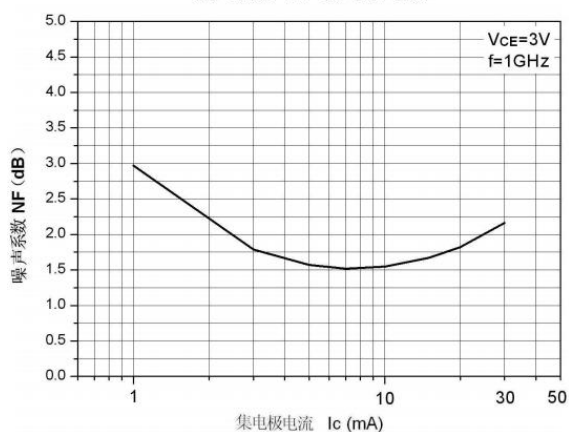
插入功率增益 vs. 频率



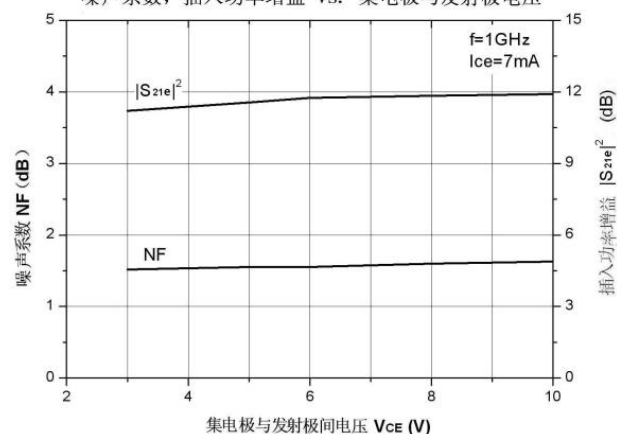
插入功率增益 vs. 集电极电流



噪声系数 vs. 集电极电流



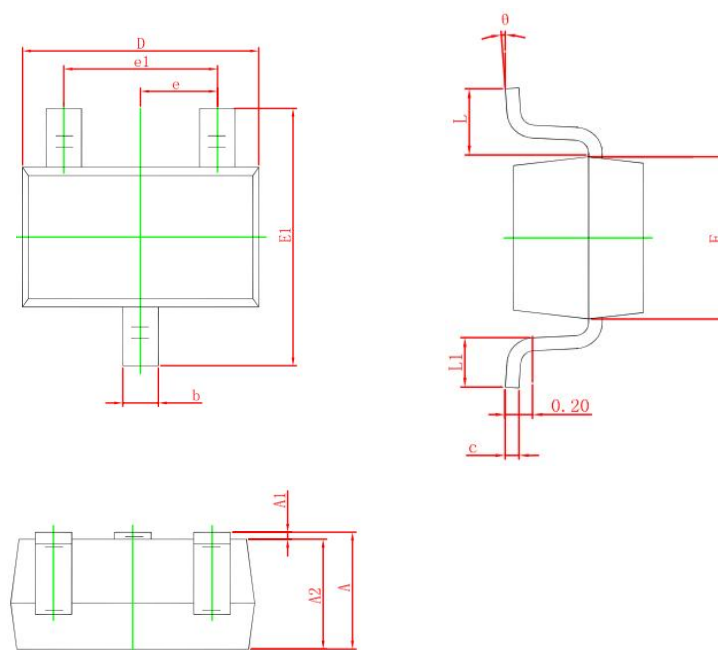
噪声系数, 插入功率增益 vs. 集电极与发射极电压



Package Information

SOT-323

Dimensions in mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°