

2SC5619

FOR HIGH FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC5619 is a super mini package resin sealed silicon NPN epitaxial transistor.

It is designed for high frequency voltage application.

FEATURE

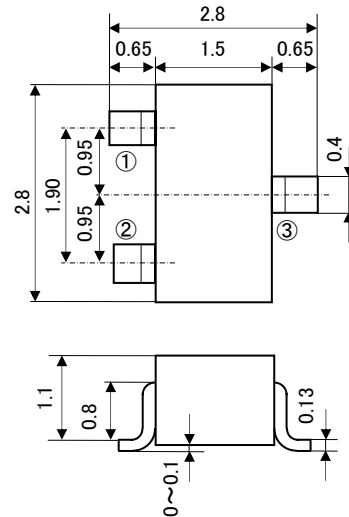
- High gain bandwidth product. $f_T=4.5\text{GHz}$
- High gain, low noise.
- Can operate at low voltage.
- Super mini package for easy mounting.

APPLICATION

For TV tuners, High frequency voltage amplifier,
Cellular phone system

OUTLINE DRAWING

Unit: mm



TERMINAL CONNECTOR

- ①: BASE
- ②: EMITTER
- ③: COLLECTOR

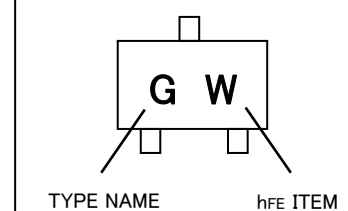
JEITA: SC-59

JEDEC: Similar to TO-236

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Symbol	Parameter	Ratings	Unit
VCBO	Collector to Base voltage	20	V
VCEO	Collector to Emitter voltage	12	V
VEBO	Emitter to Base voltage	3	V
IC	Collector current	50	mA
PC	Collector dissipation	150	mW
Tj	Junction temperature	+150	$^\circ\text{C}$
Tstg	Storage temperature	-55~+150	$^\circ\text{C}$

MARKING



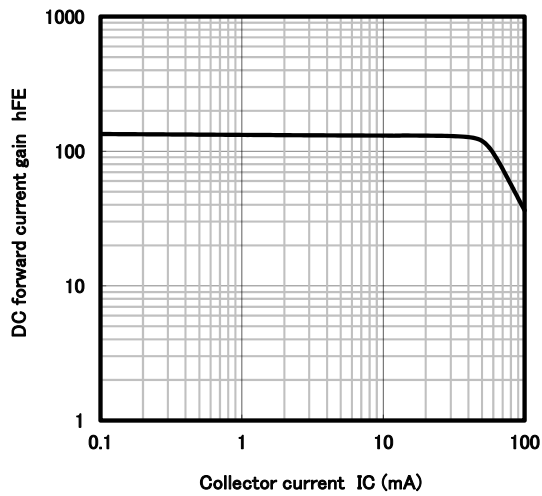
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
ICBO	Collector cut off current	VCB=10V, IE=0mA	-	-	0.5	μA
IEBO	Emitter cut off current	VEB=1V, IC=0mA	-	-	1.0	μA
hFE	DC forward current gain	VCE=5V, IC=20mA	50	-	250	-
fT	Gain bandwidth product	VCE=5V, IE=20mA	-	4.5	-	GHz
Cob	Collector output capacitance	VCB=5V, IE=0mA, f=1MHz	-	1.0	-	pF
S21 ²	Insertion power gain	VCE=5V, IC=20mA, f=1GHz	7.5	9.0	-	dB
NF	Noise figure	VCE=5V, IC=5mA, f=1GHz	-	1.5	-	dB

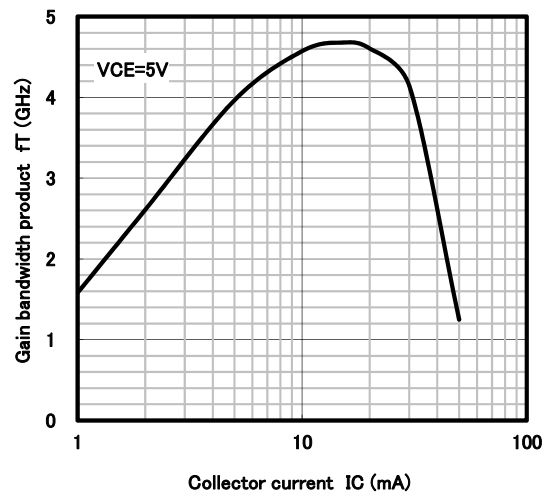
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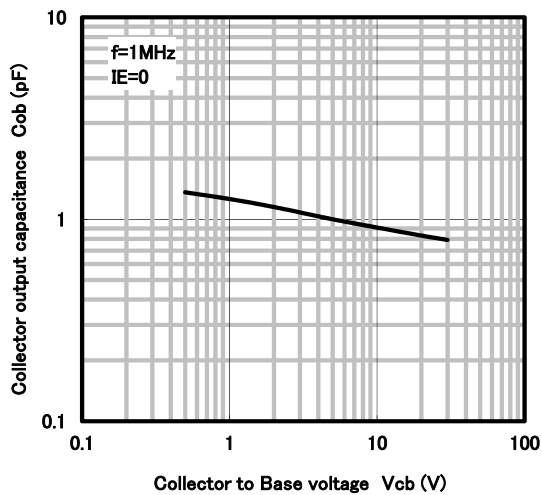
hFE - IC



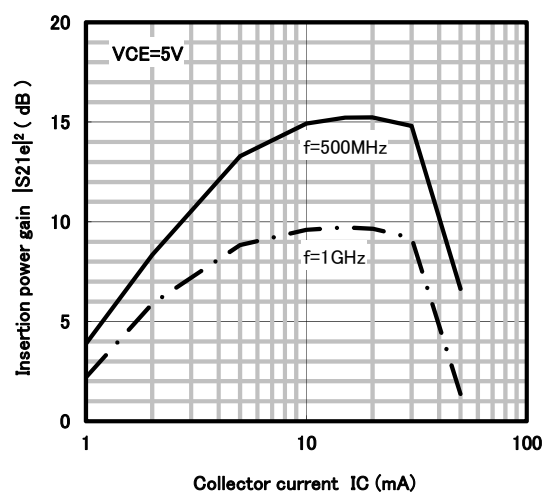
fT - IC



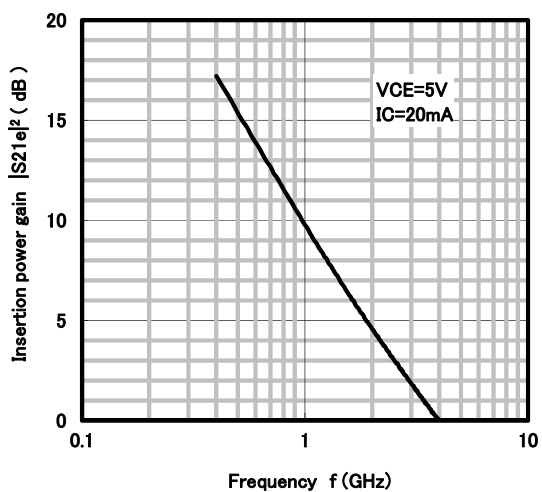
Cob - Vcb



|S21e|^2 - IC



|S21e|^2 - f

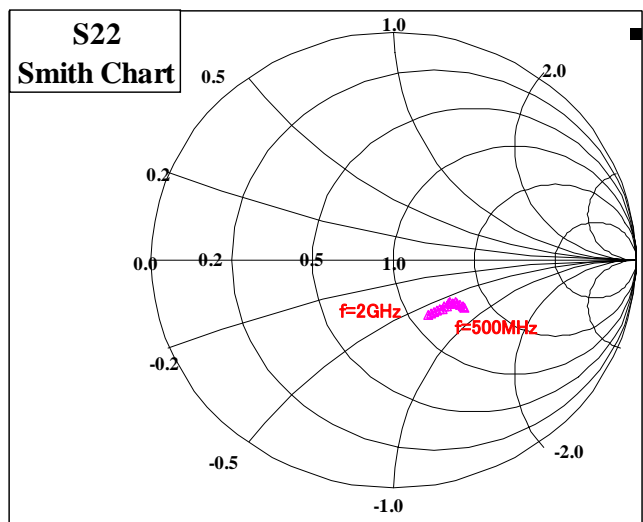
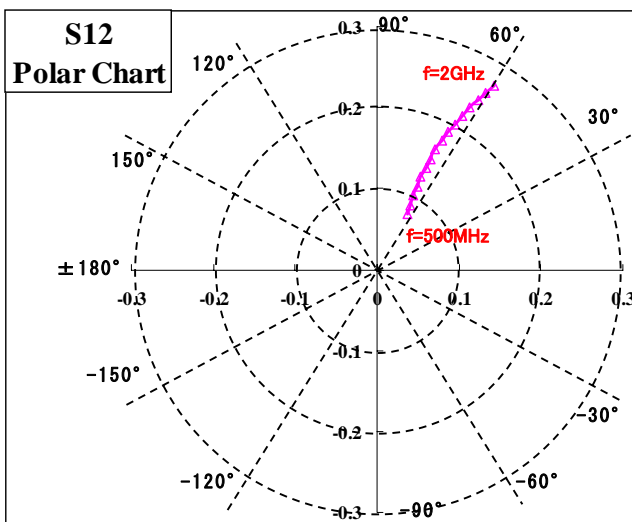
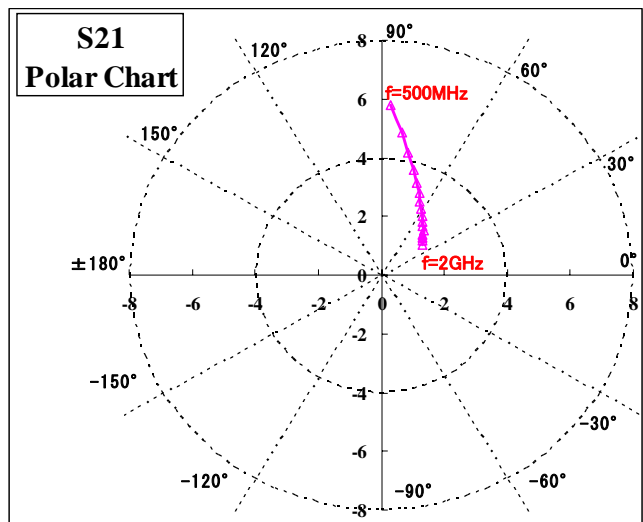
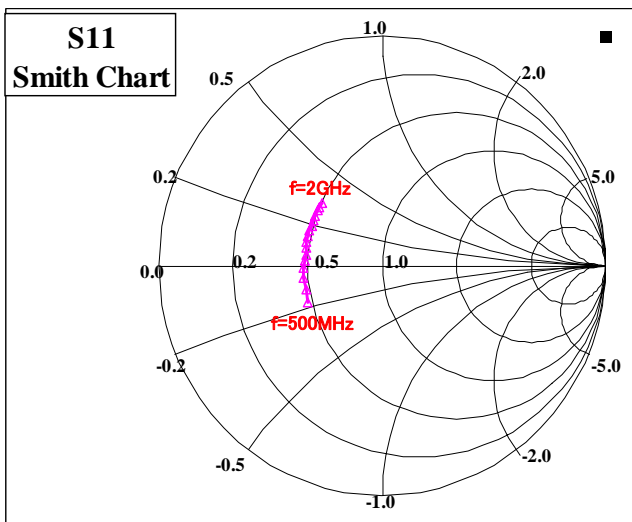


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VCE=5V/IC=20mA

Frequency (MHz)	S11		S21		S12		S22	
	Mag	Ang(deg)	Mag	Ang(deg)	Mag	Ang(deg)	Mag	Ang(deg)
500	0.367	-154.0	5.781	86.8	0.078	62.1	0.357	-35.8
600	0.355	-163.0	4.888	82.1	0.090	63.1	0.349	-35.5
700	0.355	-171.0	4.241	78.2	0.102	63.9	0.337	-35.8
800	0.352	-178.1	3.734	74.0	0.113	64.4	0.321	-36.1
900	0.348	176.8	3.348	70.3	0.126	64.8	0.314	-35.9
1000	0.343	171.7	3.037	66.8	0.139	64.4	0.311	-38.2
1100	0.349	167.0	2.785	63.7	0.151	64.3	0.298	-38.4
1200	0.354	162.8	2.583	60.7	0.164	64.2	0.296	-40.1
1300	0.358	159.1	2.415	57.3	0.178	63.7	0.299	-42.2
1400	0.358	154.8	2.265	54.2	0.190	63.0	0.294	-44.0
1500	0.359	150.9	2.132	51.7	0.203	62.2	0.294	-46.5
1600	0.366	147.6	2.020	48.8	0.217	61.4	0.289	-48.7
1700	0.370	144.7	1.910	46.5	0.229	60.6	0.284	-51.4
1800	0.376	140.7	1.832	43.6	0.243	59.6	0.281	-53.8
1900	0.381	138.1	1.750	41.4	0.255	58.8	0.280	-56.6
2000	0.384	134.8	1.678	38.7	0.268	57.8	0.277	-59.2





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