〈SMALL-SIGNAL TRANSISTOR〉

2SC5634

FOR HIGH FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC5634 is a super mini package resin sealed silicon NPN epitaxial Transistor. It is designed for high frequency application.

FEATURE

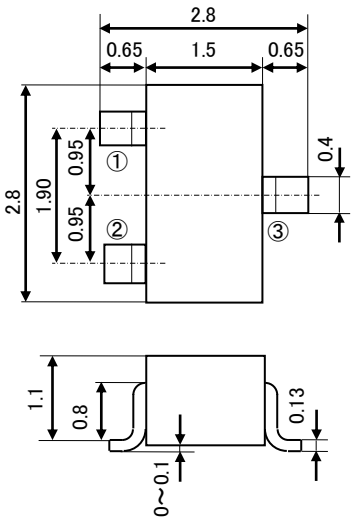
- High gain bandwidth product.
  fT=8.0GHz
- High gain, low noise.
- Can operate at low voltage.
- Super mini package for easy mounting.

APPLICATION

For TV tuners, high frequency amplifier, cellular phone system.

OUTLINE DRAWING

Unit:mm



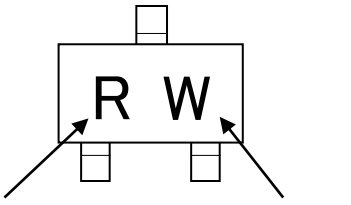
TERMINAL CONNECTER
①:BASE
②:EMITTER
③:COLLECTOR

JEITA:SC-59
JEDEC:Similar to TO-236

MAXIMUM RATINGS(Ta=25℃)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	15	V
V_{CEO}	Collector to Emitter voltage	6	V
V_{EBO}	Emitter to Base voltage	1.5	V
I_C	Collector current	50	mA
P_C	Collector dissipation	150	mW
Tj	Junction temperature	+150	℃
Tstg	Storage temperature	−55～+150	℃

MARKING



ELECTRICAL CHARACTERISTICS(Ta=25℃)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{CBO}	Collector cut off current	V_{CB}=10V, I_E=0	−	−	1.0	μA
I_{EBO}	Emitter cut off current	V_{EB}=1V, I_C=0	−	−	1.0	μA
h_{FE}	DC forward current gain	V_{CE}=5V, I_C=10mA	50	−	250	−
f_T	Gain bandwidth product	V_{CE}=5V, I_E=10mA	5.0	8.0	−	GHz
Cob	Collector output capacitance	V_{CB}=5V, I_E=0, f=1MHz	−	1.0	−	pF
$\|S21\|^2$	Insertion power gain	V_{CE}=5V, I_C=10mA, f=1GHz	9.0	12.0	−	dB
NF	Noise figure	V_{CE}=5V, I_E=5mA, f=1GHz	−	1.4	−	dB

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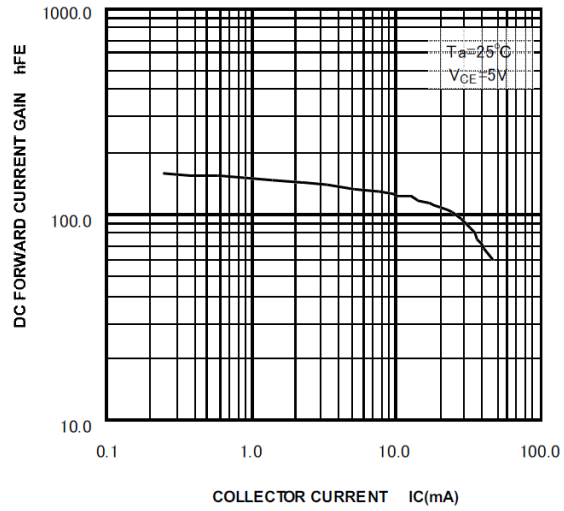
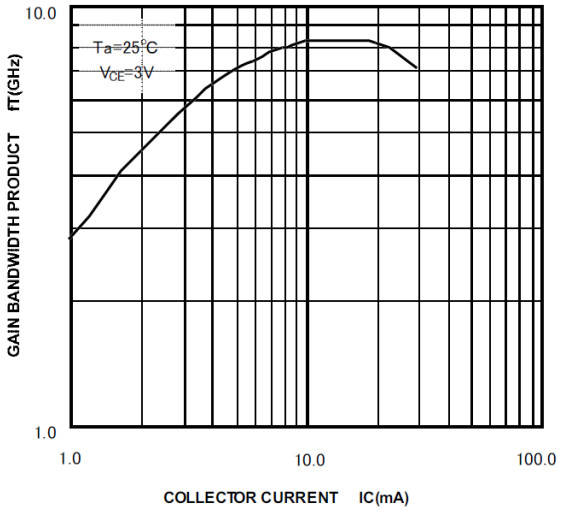
TYPICAL CHARACTERISTICS

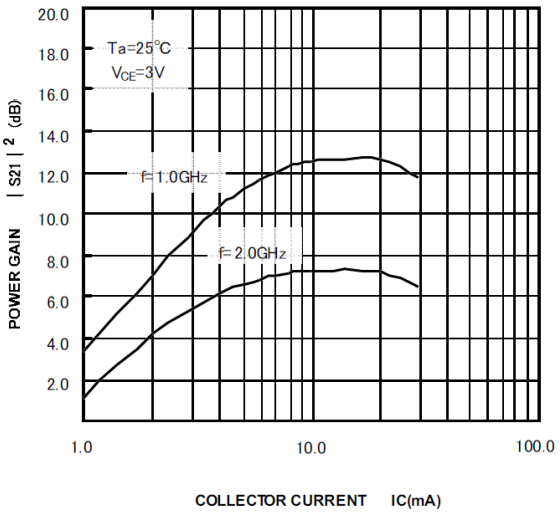
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



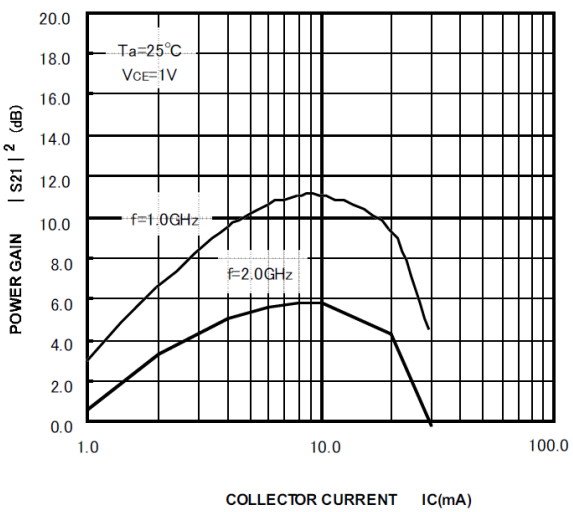
GAIN BANDWIDTH PRODUCT
VS. COLLECTOR CURRENT



POWER GAIN VS. COLLECTOR CURRENT



POWER GAIN VS. COLLECTOR CURRENT



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FOR HIGH FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

S PARAMETER

V_{CE}=1V,I_C=10mA

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.462	−121.3	6.597	102.5	0.087	48.1	0.352	−84.5
600	0.440	−131.7	5.854	97.0	0.094	48.9	0.320	−87.7
700	0.434	−143.9	5.029	91.8	0.102	48.7	0.278	−100.6
800	0.423	−149.9	4.569	88.0	0.109	49.7	0.254	−101.8
900	0.413	−155.5	4.031	84.1	0.117	51.0	0.233	−107.1
1000	0.407	−159.7	3.685	82.1	0.124	51.3	0.220	−109.7
1100	0.407	−164.6	3.367	78.5	0.133	51.8	0.211	−114.9
1200	0.397	−167.5	3.141	76.4	0.140	52.3	0.201	−116.5
1300	0.395	−171.3	2.880	73.7	0.150	52.8	0.192	−120.3
1400	0.393	−173.3	2.712	72.2	0.157	53.0	0.187	−122.0
1500	0.389	−175.7	2.574	69.9	0.164	53.2	0.181	−122.4
1600	0.392	−179.0	2.435	67.0	0.173	53.2	0.176	−124.9
1700	0.384	179.1	2.307	65.3	0.180	53.0	0.178	−126.3
1800	0.386	177.0	2.178	63.8	0.189	52.8	0.174	−128.4
1900	0.383	174.5	2.089	61.8	0.197	52.8	0.175	−130.4
2000	0.379	173.1	2.011	60.4	0.204	52.4	0.177	−131.1

V_{CE}=3V,I_C=10mA

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.473	−102.1	7.745	108.2	0.076	52.4	0.420	−60.1
600	0.434	−113.7	6.955	102.1	0.082	53.1	0.389	−62.1
700	0.410	−127.8	6.038	95.9	0.089	52.5	0.325	−69.8
800	0.391	−134.7	5.488	92.5	0.096	53.4	0.302	−69.2
900	0.375	−141.5	4.872	87.9	0.104	54.4	0.273	−71.5
1000	0.365	−146.5	4.457	85.6	0.110	54.7	0.258	−71.7
1100	0.361	−152.6	4.073	82.1	0.118	55.1	0.242	−74.8
1200	0.350	−155.8	3.805	79.7	0.125	55.7	0.232	−74.9
1300	0.345	−160.2	3.486	77.1	0.133	56.0	0.219	−76.7
1400	0.342	−162.7	3.279	75.5	0.140	56.1	0.213	−77.0
1500	0.337	−165.4	3.106	73.8	0.147	56.4	0.211	−77.1
1600	0.337	−169.4	2.928	70.3	0.155	56.2	0.205	−78.4
1700	0.330	−171.3	2.772	69.2	0.161	56.2	0.205	−79.9
1800	0.332	−174.0	2.617	67.0	0.170	56.3	0.198	−80.6
1900	0.328	−176.5	2.511	65.2	0.176	56.0	0.197	−82.2
2000	0.325	−178.4	2.413	63.4	0.184	55.6	0.200	−84.2

V_{CE}=5V,I_C=10mA

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.483	−94.6	8.003	110.1	0.071	54.4	0.458	−52.0
600	0.436	−106.1	7.231	104.2	0.077	54.8	0.428	−52.8
700	0.405	−120.3	6.321	97.7	0.085	54.0	0.360	−59.2
800	0.381	−127.6	5.738	94.0	0.091	54.8	0.340	−58.2
900	0.361	−134.6	5.103	89.6	0.099	55.8	0.312	−59.8
1000	0.349	−139.9	4.683	87.0	0.104	56.3	0.297	−59.2
1100	0.342	−146.3	4.290	83.4	0.112	56.5	0.280	−61.4
1200	0.330	−149.6	3.990	81.2	0.119	57.0	0.270	−61.6
1300	0.323	−154.5	3.669	78.4	0.126	57.5	0.256	−61.7
1400	0.321	−157.2	3.455	76.2	0.133	57.4	0.254	−62.9
1500	0.314	−160.0	3.273	74.3	0.140	57.6	0.252	−62.7
1600	0.313	−164.3	3.086	71.2	0.147	57.8	0.245	−63.3
1700	0.305	−166.2	2.915	70.4	0.153	57.4	0.244	−65.4
1800	0.308	−169.1	2.765	67.9	0.162	57.4	0.240	−66.2
1900	0.304	−171.9	2.648	65.9	0.169	57.3	0.237	−67.3
2000	0.299	−173.6	2.538	64.7	0.175	57.0	0.239	−69.1

Keep safety first in your circuit designs!

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