〈SMALL-SIGNAL TRANSISTOR〉

2SC5883

FOR HIGH FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC5883 is a ultra super mini package resin sealed silicon NPN epitaxial transistor,
It is designed for high frequency application.
Since it is a super-thin flat lead type package,a high-density mounting are possible.

FEATURE

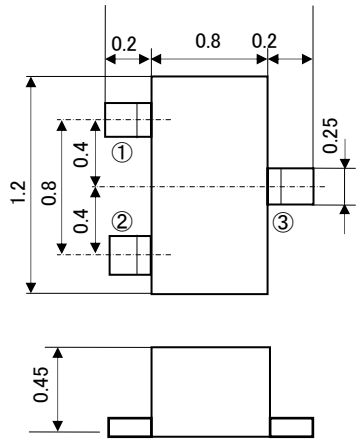
- Super-thin flat lead type package.
  t=0.45mm
- High gain bandwidth product.
  fT=8.0GHz
- High gain, low noise.
- Can operate at low voltage.

APPLICATION

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

OUTLINE DRAWING

Unit:mm



JEITA:

TERMINAL CONNECTER
①:BASE
②:EMITTER
③:COLLECTOR

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_O	Collector current	50	mA
P_c	Collector dissipation	80	mW
T_j	Junction temperature	+125	℃
T_{stg}	Storage temperature	−55～+125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
Collector cut off current	ICBO	V_{CB}=10V, I_E=0mA	−	−	1.0	μA
Emitter cut off current	IEBO	V_{EB}=1V, I_C=0mA	−	−	1.0	μA
DC forward current gain	hFE	V_{CE}=5V, I_C=10mA	50	−	250	
Gain bandwidth product	fT	V_{CE}=5V, I_E=10mA	5.0	8.0	−	GHz
Collector output capacitance	Cob	V_{CB}=5V, I_E=0mA,f=1MHz	−	0.8	−	pF
Insertion power gain	$\|S_{21}\|^2$	V_{CE}=5V, I_C=10mA,f=1GHz	9.0	12.0	−	dB
Noise figure	NF	V_{CE}=5V, I_C=5mA,f=1GHz	−	1.4	−	dB

<Transistor>

2SC5883

for high frequency amplify application

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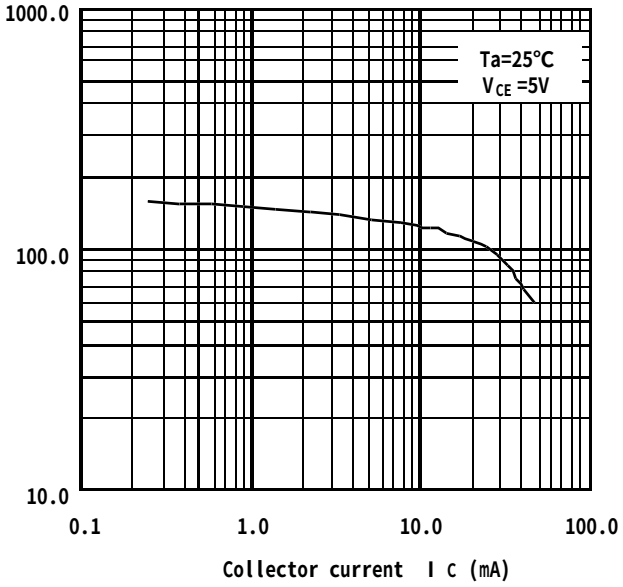
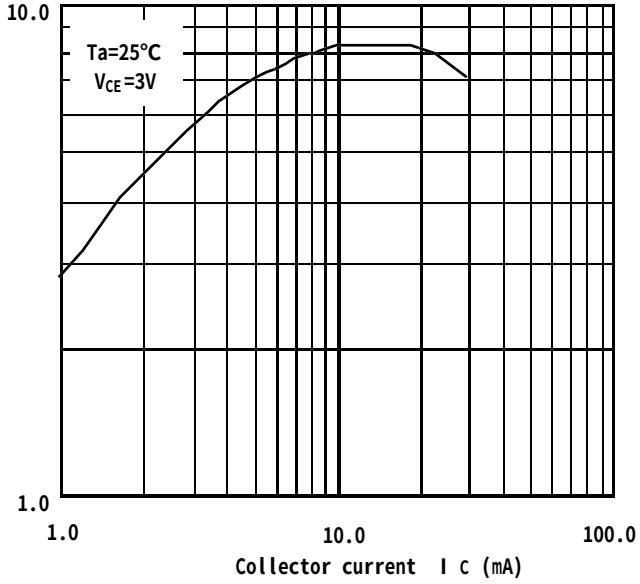
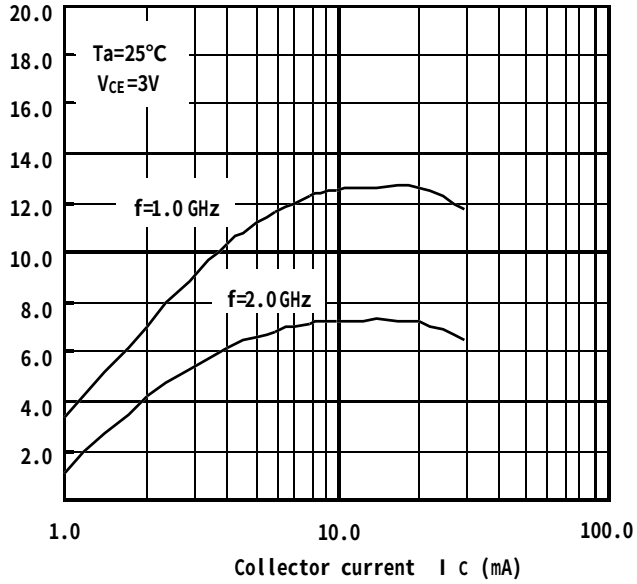
DC forward current gain—Collector current



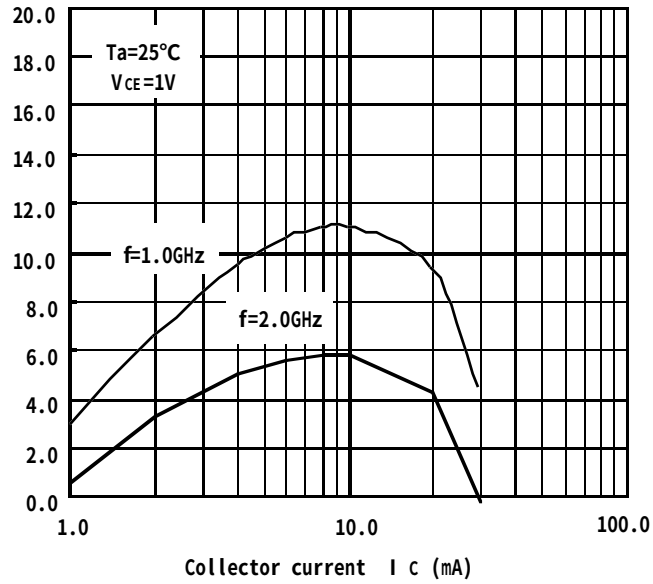
Gain Bandwidth product—Collector current



power gain—Collector current



power gain—Collector current



<Transistor>

2SC5883

for high frequency amplify application

Silicon NPN epitaxial type

S PARAMETER

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

FREQUENCY	S_{11}		S_{21}		S_{12}		S_{22}	
(MHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.481	-111.7	6.886	107.3	0.081	49.6	0.417	-64.4
600	0.456	-122.3	6.192	101.6	0.088	50.0	0.384	-67.1
700	0.446	-134.9	5.386	96.3	0.095	49.6	0.321	-75.8
800	0.433	-141.1	4.911	92.2	0.100	50.3	0.298	-76.4
900	0.422	-147.1	4.365	88.0	0.108	51.3	0.269	-79.9
1000	0.415	-151.7	4.009	85.4	0.114	51.8	0.253	-80.4
1100	0.414	-156.8	3.675	81.9	0.121	52.3	0.237	-84.3
1200	0.404	-159.7	3.424	79.8	0.128	52.9	0.226	-84.9
1300	0.402	-163.7	3.151	76.5	0.135	53.5	0.211	-86.8
1400	0.399	-165.7	2.963	75.0	0.142	53.7	0.206	-88.0
1500	0.394	-168.0	2.808	73.3	0.148	54.2	0.201	-87.8
1600	0.396	-171.6	2.655	69.6	0.156	54.3	0.194	-89.5
1700	0.389	-173.2	2.512	68.8	0.162	54.4	0.194	-91.3
1800	0.391	-175.6	2.383	66.5	0.171	54.4	0.190	-93.1
1900	0.389	-177.7	2.286	64.8	0.177	54.3	0.186	-94.8
2000	0.384	-179.1	2.195	63.2	0.183	54.1	0.189	-96.4

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

FREQUENCY	S_{11}		S_{21}		S_{12}		S_{22}	
(MHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.501	-94.6	7.997	112.3	0.070	53.9	0.500	-48.9
600	0.459	-106.1	7.245	106.3	0.075	54.2	0.468	-50.4
700	0.432	-120.2	6.356	100.3	0.082	53.0	0.397	-56.4
800	0.412	-127.5	5.802	95.8	0.087	54.0	0.374	-55.7
900	0.392	-134.3	5.152	92.3	0.095	54.6	0.345	-57.6
1000	0.383	-139.6	4.740	89.0	0.100	55.3	0.328	-57.3
1100	0.376	-145.8	4.337	85.6	0.107	55.7	0.309	-59.3
1200	0.366	-149.1	4.054	82.6	0.112	56.2	0.298	-59.4
1300	0.359	-153.6	3.715	80.4	0.119	56.8	0.286	-60.6
1400	0.357	-156.2	3.501	78.1	0.125	57.3	0.279	-60.5
1500	0.350	-158.8	3.309	76.4	0.131	57.6	0.276	-60.3
1600	0.350	-162.8	3.127	72.9	0.138	57.7	0.269	-61.5
1700	0.343	-164.6	2.960	71.8	0.144	57.5	0.268	-63.4
1800	0.344	-167.2	2.802	69.7	0.151	57.8	0.263	-63.8
1900	0.341	-169.7	2.681	67.9	0.157	57.9	0.260	-65.0
2000	0.336	-171.4	2.570	66.3	0.163	57.6	0.261	-66.6

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

FREQUENCY	S_{11}		S_{21}		S_{12}		S_{22}	
(MHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.514	-87.0	8.190	114.6	0.065	55.8	0.539	-42.7
600	0.465	-98.3	7.470	108.7	0.071	55.8	0.511	-44.5
700	0.431	-112.3	6.605	101.8	0.077	54.7	0.437	-48.9
800	0.406	-119.8	6.053	97.7	0.083	55.6	0.416	-48.0
900	0.382	-127.2	5.394	93.1	0.089	56.2	0.387	-49.6
1000	0.369	-132.6	4.953	90.3	0.094	56.5	0.372	-49.1
1100	0.360	-139.2	4.550	86.4	0.101	57.0	0.354	-51.0
1200	0.347	-142.6	4.241	84.0	0.107	57.4	0.344	-51.2
1300	0.338	-147.5	3.896	81.3	0.114	58.1	0.329	-51.6
1400	0.335	-150.1	3.672	79.6	0.119	58.4	0.327	-52.4
1500	0.328	-153.0	3.475	77.4	0.125	58.7	0.324	-52.2
1600	0.327	-157.2	3.276	74.4	0.131	58.8	0.315	-52.6
1700	0.319	-159.2	3.108	72.7	0.137	58.7	0.314	-54.7
1800	0.320	-162.1	2.938	70.5	0.144	59.0	0.310	-55.2
1900	0.316	-164.5	2.807	69.1	0.150	59.0	0.306	-56.7
2000	0.312	-166.4	2.691	67.7	0.156	59.0	0.307	-57.7

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