

To our customers,

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## Old Company Name in Catalogs and Other Documents

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On April 1<sup>st</sup>, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
for new design

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# RQG1001UPAQF

NPN Silicon Germanium Transistor  
High Frequency Low Noise Amplifier

REJ03G1551-0100

Rev.1.00

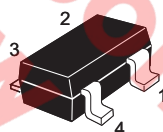
Jul 20, 2007

## Features

- Ideal for LNA applications. e.g. Tuner, Wireless LAN, Cordless phone and etc.
- High gain and low noise.
  - MSG = 25 dB typ., NF = 0.65 dB typ. at  $V_{CE} = 2\text{ V}$ ,  $I_C = 5\text{ mA}$ ,  $f = 0.9\text{ GHz}$
  - MSG = 22 dB typ., NF = 0.75 dB typ. at  $V_{CE} = 2\text{ V}$ ,  $I_C = 5\text{ mA}$ ,  $f = 1.8\text{ GHz}$
  - MSG = 21 dB typ., NF = 0.85 dB typ. at  $V_{CE} = 2\text{ V}$ ,  $I_C = 5\text{ mA}$ ,  $f = 2.4\text{ GHz}$
  - MSG = 15 dB typ., NF = 1.3 dB typ. at  $V_{CE} = 2\text{ V}$ ,  $I_C = 10\text{ mA}$ ,  $f = 5.8\text{ GHz}$
- High transition frequency
  - $f_T = 35\text{ GHz}$  typ.
- CMPAK-4 (2.0 x 1.25 x 1.1(max) mm)

## Outline

RENESAS Package code: PTSP0004ZA-A  
(Package name: CMPAK-4)



1. Emitter
2. Collector
3. Emitter
4. Base

Note: Marking is "UP-".

## Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	8	V
Collector to emitter voltage	$V_{CEO}$	3.5	V
Emitter to base voltage	$V_{EBO}$	1.2	V
Collector current	$I_C$	35	mA
Collector power dissipation	$P_C$	100	mW
	$P_C$	250 <sup>note1</sup>	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Notes: 1. Value on PCB (FR-4 : 40 x 40 x 1.6mm double side)

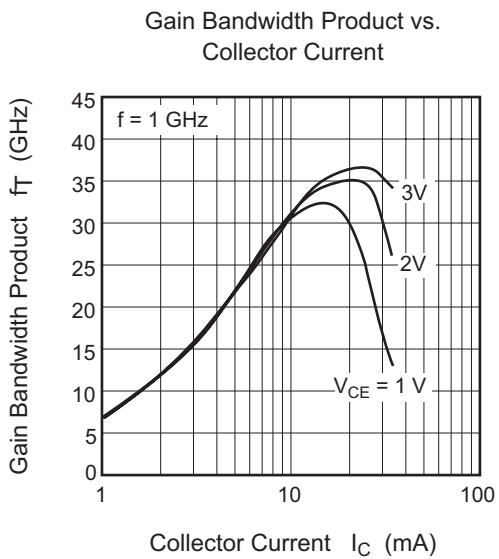
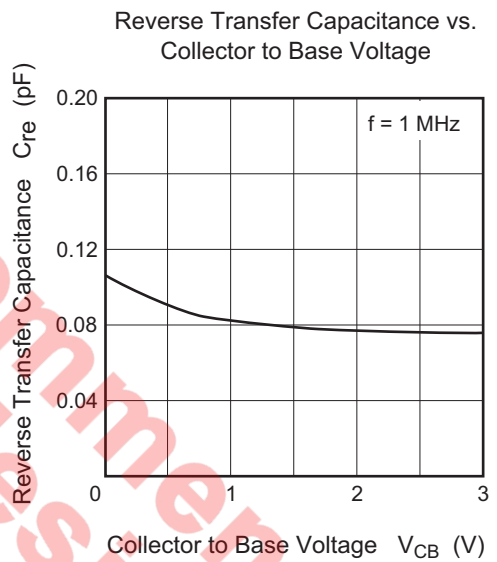
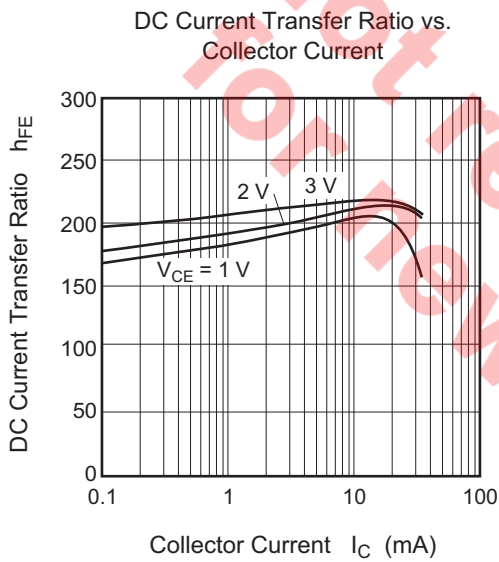
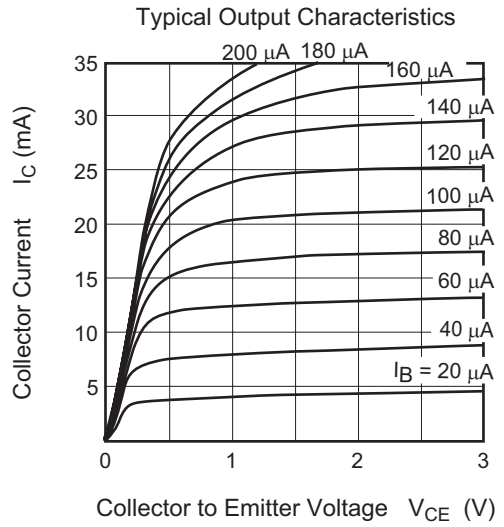
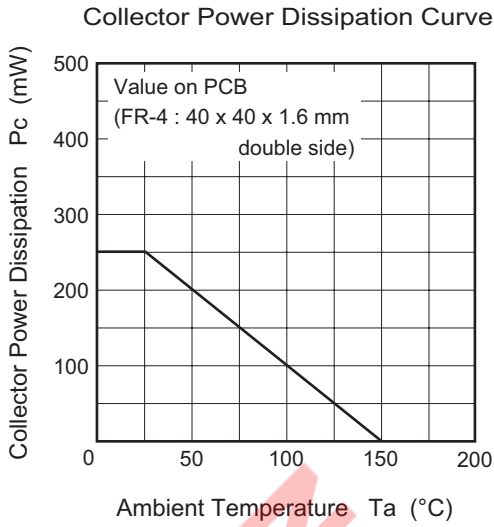
## Electrical Characteristics

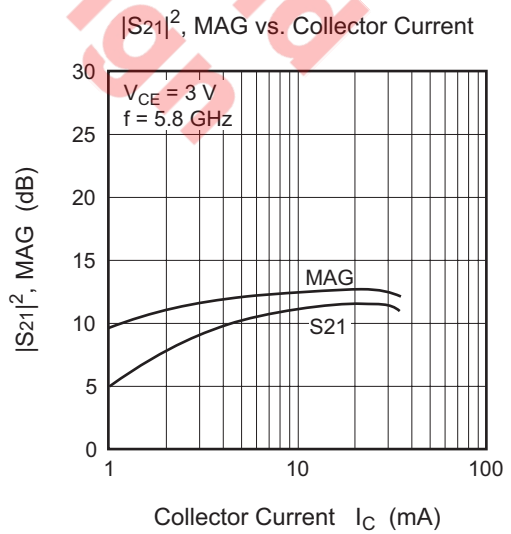
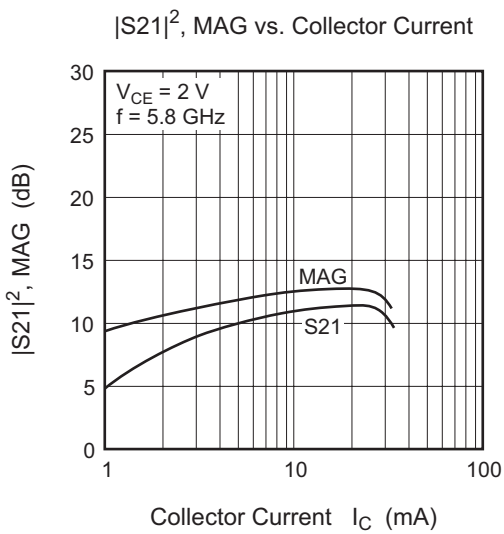
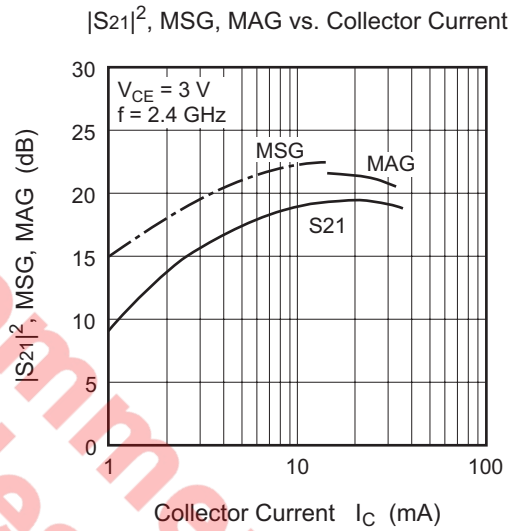
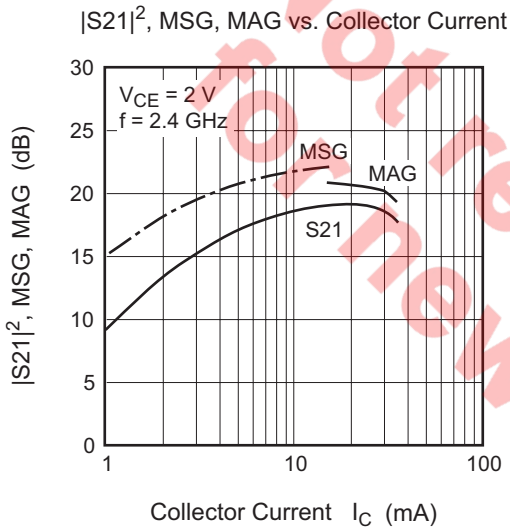
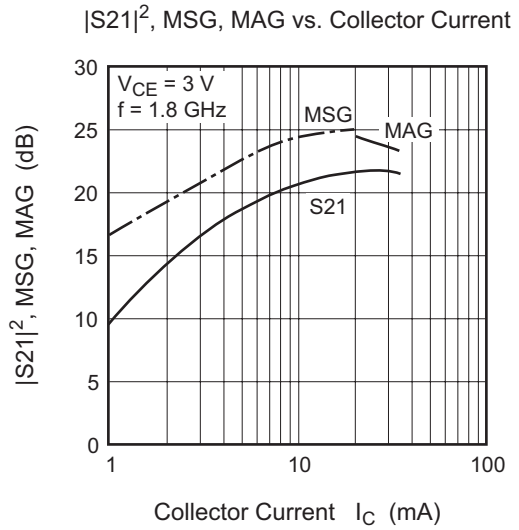
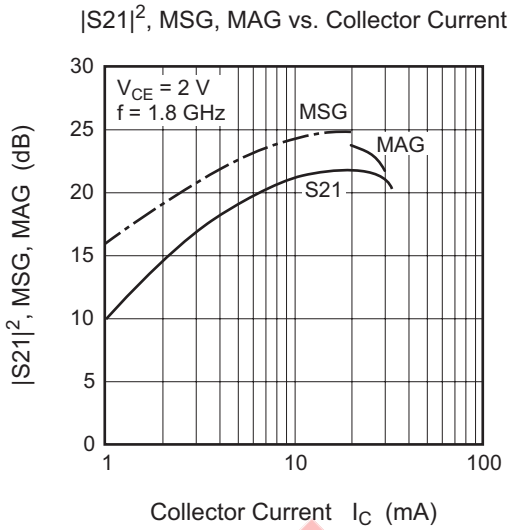
(Ta = 25°C)

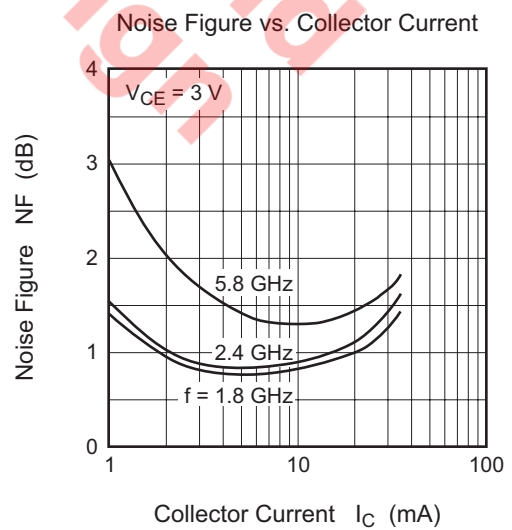
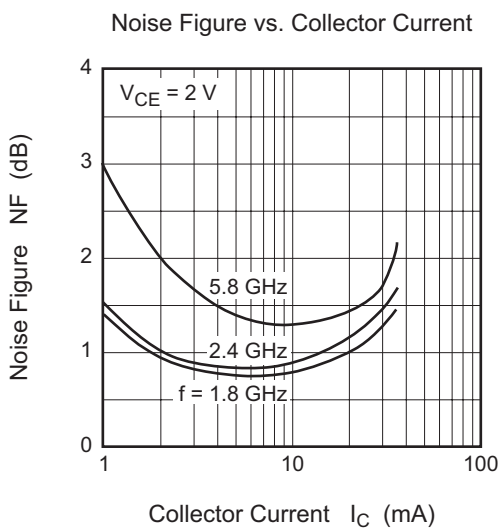
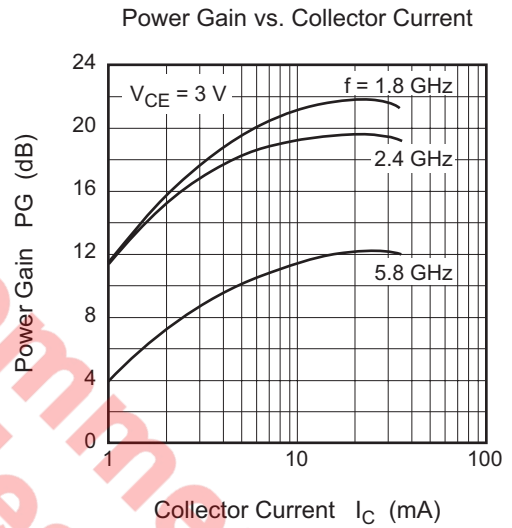
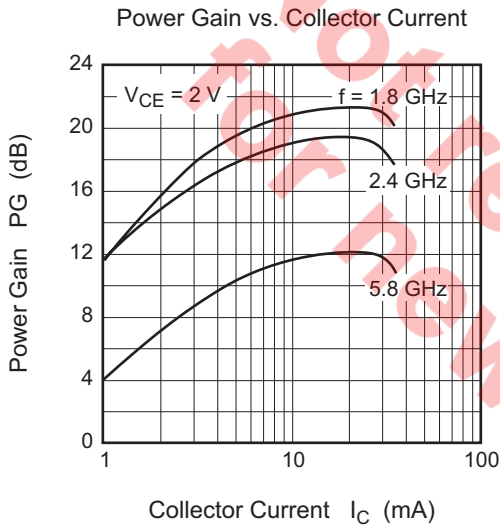
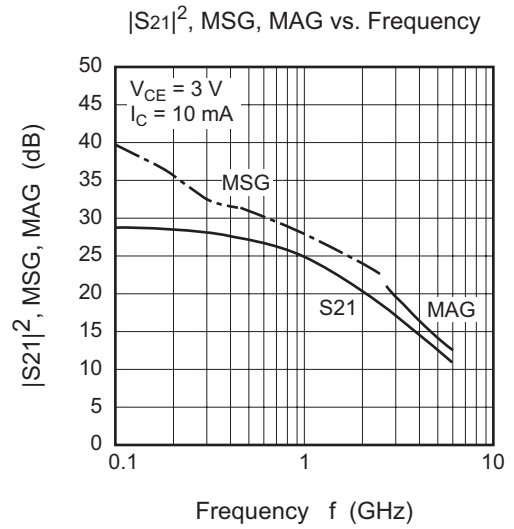
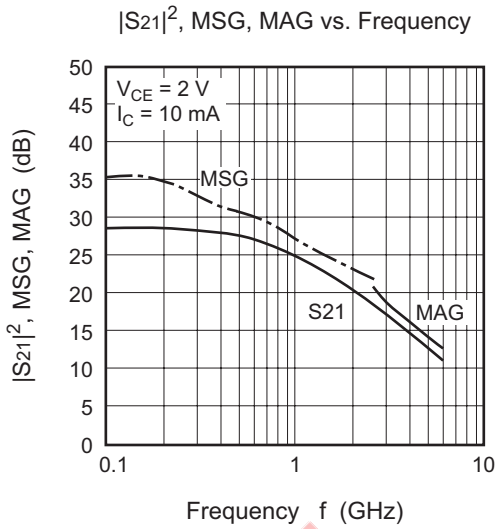
Item	Symbol	Min.	Typ	Max.	Unit	Test Conditions	
DC current transfer ratio	$h_{FE}$	100	200	300	—	$V_{CE} = 2\text{ V}$ , $I_C = 5\text{ mA}$	
Reverse Transfer Capacitance	$C_{re}$	—	0.08	—	pF	$V_{CB} = 2\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$	
Transition Frequency	$f_T$	—	35	—	GHz	$V_{CE} = 2\text{ V}$ , $I_C = f_T\text{ peak}$ , $f = 1\text{ GHz}$	
Forward Transfer Coefficient	0.9 GHz	S <sub>21</sub>   <sup>2</sup>	—	22	—	dB	$V_{CE} = 2\text{ V}$ , $I_C = 5\text{ mA}$
	1.8 GHz		—	19	—		
	2.4 GHz		—	17	—		$V_{CE} = 2\text{ V}$ , $I_C = 10\text{ mA}$
	5.8 GHz		—	11	—		
Maximum Stable Gain Note1	0.9 GHz	MSG	—	25	—	dB	$V_{CE} = 2\text{ V}$ , $I_C = 5\text{ mA}$
	1.8 GHz		—	22	—		
	2.4 GHz		—	21	—		$V_{CE} = 2\text{ V}$ , $I_C = 10\text{ mA}$
	5.8 GHz		—	15	—		
Maximum Available Gain Note2	5.8 GHz	MAG	—	13	—	dB	$V_{CE} = 2\text{ V}$ , $I_C = 10\text{ mA}$
Power Gain	0.9 GHz	PG	—	22	—	dB	$V_{CE} = 2\text{ V}$ , $I_C = 5\text{ mA}$
	1.8 GHz		—	19.5	—		
	2.4 GHz		—	18	—		$V_{CE} = 2\text{ V}$ , $I_C = 10\text{ mA}$
	5.8 GHz		—	11.5	—		
Noise figure	0.9 GHz	NF	—	0.7	—	dB	$V_{CE} = 2\text{ V}$ , $I_C = 5\text{ mA}$
	1.8 GHz		—	0.75	—		
	2.4 GHz		—	0.85	—		$V_{CE} = 2\text{ V}$ , $I_C = 10\text{ mA}$
	5.8 GHz		—	1.3	—		

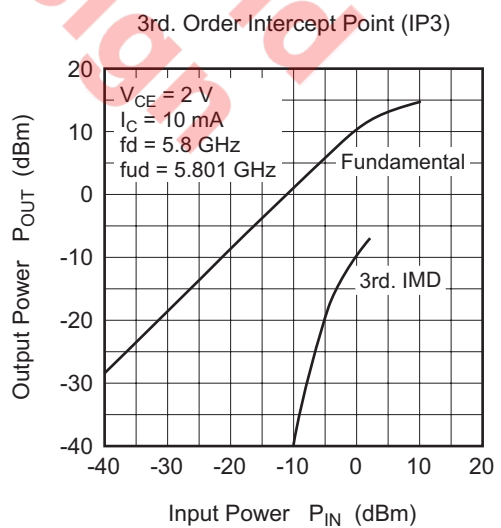
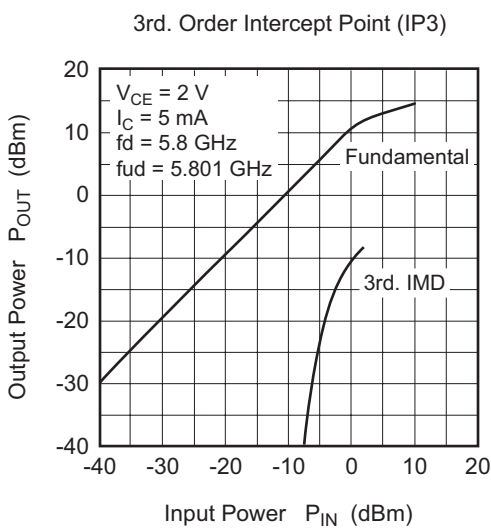
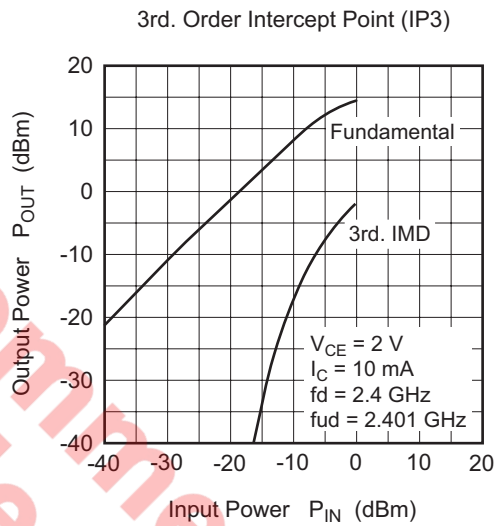
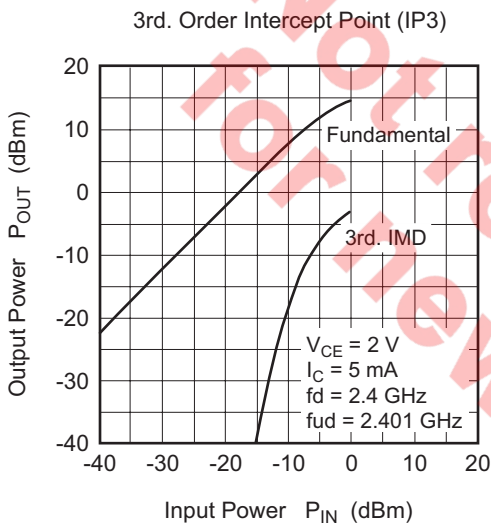
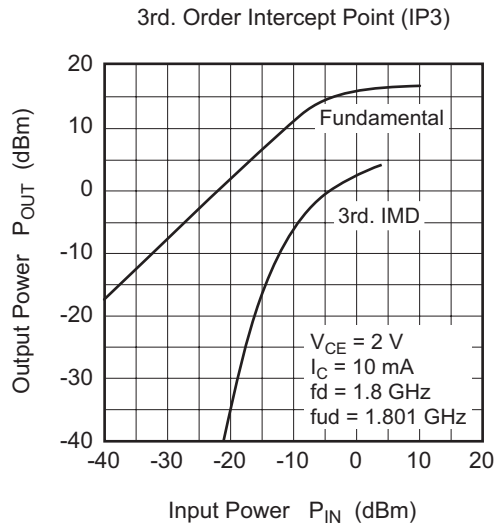
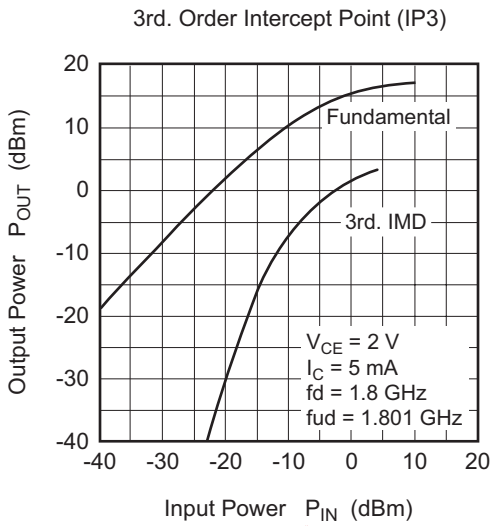
Notes: 1.  $MSG = |S_{21}| / |S_{12}|$ 2.  $MAG = |S_{21}| / |S_{12}|(K - (K^2 - 1)^{1/2})$

Main Characteristics



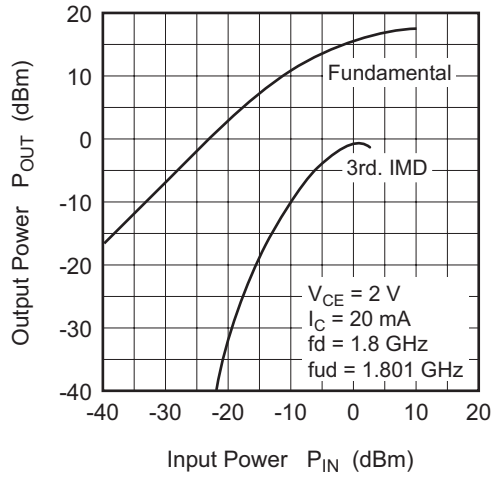




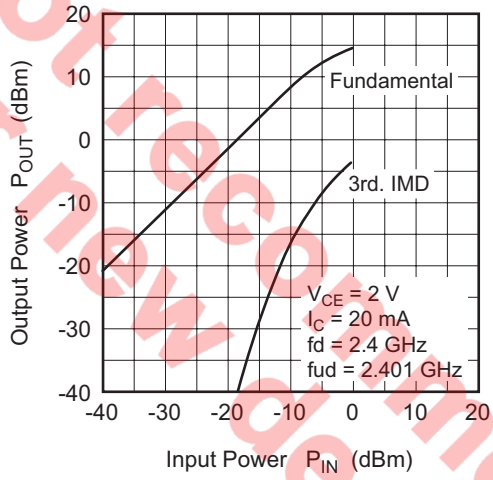




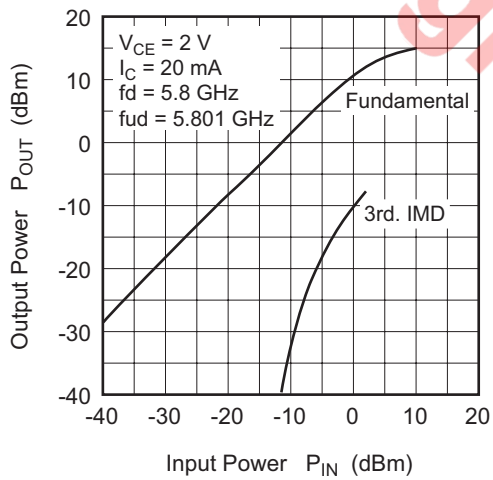
3rd. Order Intercept Point (IP3)



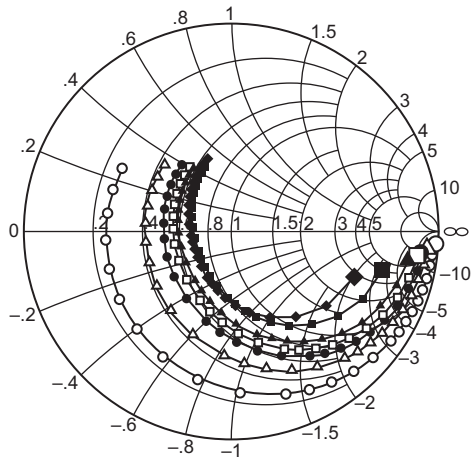
3rd. Order Intercept Point (IP3)



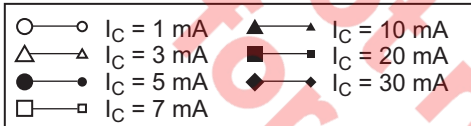
3rd. Order Intercept Point (IP3)



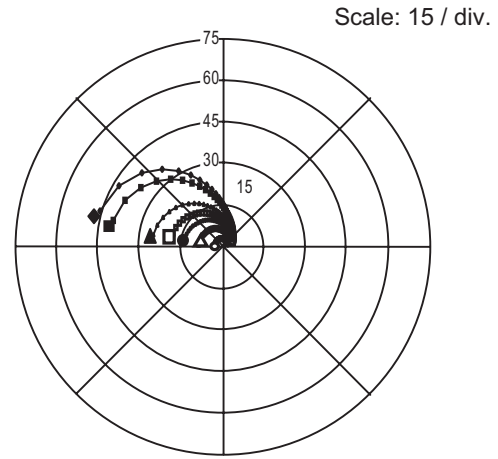
S<sub>11</sub> Parameter vs. Frequency



Condition: V<sub>CE</sub> = 2 V , Z<sub>o</sub> = 50 Ω  
 100 to 1000 MHz (100 MHz step)  
 1000 to 2000 MHz (200 MHz step)  
 2000 to 6000 MHz (400 MHz step)



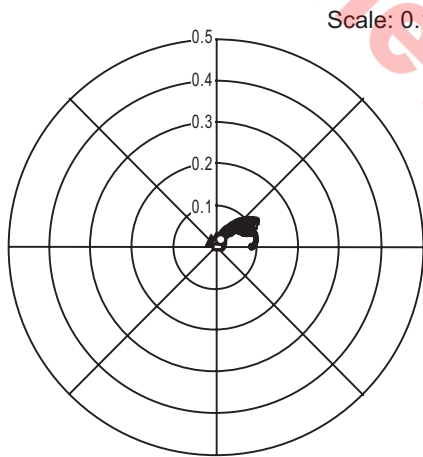
S<sub>21</sub> Parameter vs. Frequency



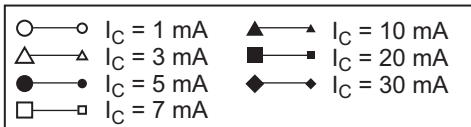
Condition: V<sub>CE</sub> = 2 V , Z<sub>o</sub> = 50 Ω  
 100 to 6000 MHz (100 MHz step)



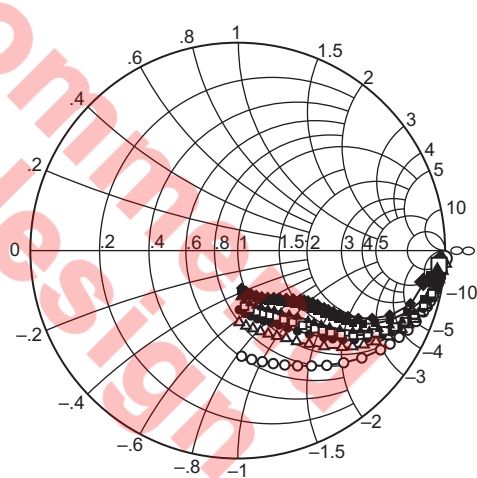
S<sub>12</sub> Parameter vs. Frequency



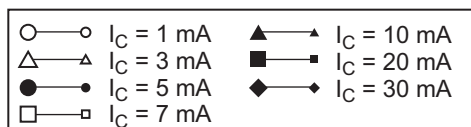
Condition: V<sub>CE</sub> = 2 V , Z<sub>o</sub> = 50 Ω  
 100 to 6000 MHz (100 MHz step)



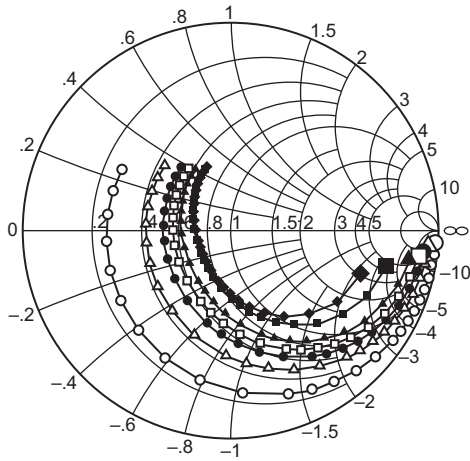
S<sub>22</sub> Parameter vs. Frequency



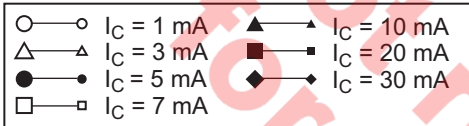
Condition: V<sub>CE</sub> = 2 V , Z<sub>o</sub> = 50 Ω  
 100 to 1000 MHz (100 MHz step)  
 1000 to 2000 MHz (200 MHz step)  
 2000 to 6000 MHz (400 MHz step)



S11 Parameter vs. Frequency

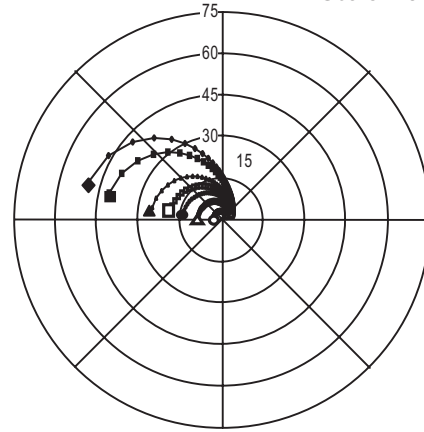


Condition:  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 1000 MHz (100 MHz step)  
 1000 to 2000 MHz (200 MHz step)  
 2000 to 6000 MHz (400 MHz step)



S21 Parameter vs. Frequency

Scale: 15 / div.

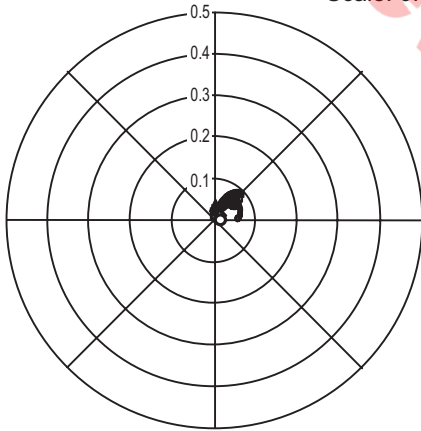


Condition:  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 6000 MHz (100 MHz step)

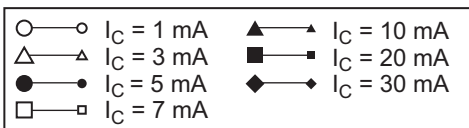


S12 Parameter vs. Frequency

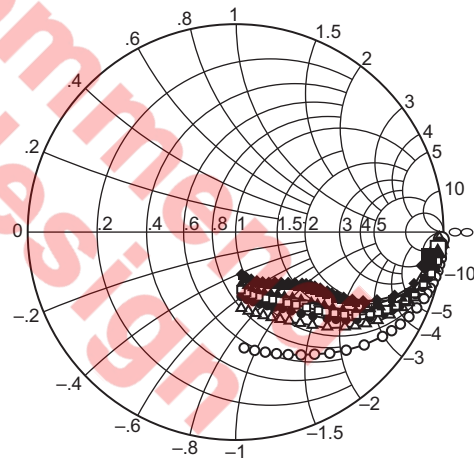
Scale: 0.1 / div.



Condition:  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 6000 MHz (100 MHz step)



S22 Parameter vs. Frequency



Condition:  $V_{CE} = 3\text{ V}$ ,  $Z_o = 50\ \Omega$   
 100 to 1000 MHz (100 MHz step)  
 1000 to 2000 MHz (200 MHz step)  
 2000 to 6000 MHz (400 MHz step)



## S Parameter

 $(V_{CE} = 2\text{ V}, I_C = 5\text{ mA}, Z_O = 50\ \Omega)$ 

f (MHz)	S11		S21		S12		S22	
	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)
100	0.923	-6.2	14.39	173.5	0.0092	34.3	0.979	-3.2
200	0.915	-12.3	14.26	167.6	0.0094	83.2	0.987	-7.1
300	0.896	-18.2	14.03	162.0	0.0144	73.0	0.974	-10.7
400	0.878	-24.5	13.78	156.6	0.0167	76.6	0.956	-14.0
500	0.855	-30.4	13.53	151.5	0.0207	68.8	0.935	-17.2
600	0.828	-36.3	13.22	146.7	0.0254	70.2	0.912	-20.1
700	0.803	-41.8	12.78	142.1	0.0285	65.0	0.887	-23.0
800	0.774	-47.2	12.41	137.6	0.0310	61.7	0.860	-25.6
900	0.743	-52.9	12.15	133.5	0.0340	60.5	0.833	-27.9
1000	0.712	-58.1	11.75	129.1	0.0364	58.8	0.806	-30.1
1100	0.682	-63.2	11.35	125.1	0.0403	56.0	0.781	-32.1
1200	0.650	-68.4	11.01	121.1	0.0400	53.8	0.754	-34.0
1300	0.621	-73.1	10.60	117.5	0.0421	51.7	0.729	-35.8
1400	0.594	-78.0	10.21	114.1	0.0452	50.4	0.707	-37.4
1500	0.566	-82.8	9.87	110.7	0.0464	48.2	0.684	-38.9
1600	0.540	-87.5	9.53	107.4	0.0478	47.9	0.663	-40.2
1700	0.517	-92.1	9.18	104.4	0.0498	46.6	0.644	-41.6
1800	0.495	-96.7	8.85	101.5	0.0508	45.0	0.624	-42.8
1900	0.475	-101.1	8.54	98.7	0.0516	44.5	0.606	-44.1
2000	0.455	-105.8	8.25	96.0	0.0528	43.6	0.589	-45.1
2200	0.423	-114.6	7.69	90.9	0.0556	41.7	0.558	-47.3
2400	0.395	-123.6	7.21	86.0	0.0569	41.1	0.530	-49.3
2600	0.373	-132.2	6.76	81.5	0.0599	38.9	0.504	-51.4
2800	0.357	-141.1	6.36	77.2	0.0616	39.1	0.482	-53.3
3000	0.345	-149.5	5.99	73.1	0.0633	38.3	0.461	-55.1
3200	0.338	-157.6	5.66	69.1	0.0662	37.4	0.443	-57.2
3400	0.332	-165.6	5.36	65.3	0.0680	36.9	0.425	-59.2
3600	0.328	-172.7	5.08	61.7	0.0695	35.7	0.409	-61.0
3800	0.327	-179.6	4.83	58.3	0.0719	35.8	0.396	-62.9
4000	0.330	174.2	4.61	54.9	0.0743	35.2	0.384	-65.0
4200	0.335	168.2	4.40	51.5	0.0772	34.1	0.372	-67.3
4400	0.340	162.6	4.22	48.2	0.0795	33.9	0.361	-69.5
4600	0.346	157.3	4.04	45.0	0.0817	32.9	0.351	-71.7
4800	0.352	152.4	3.88	41.9	0.0849	31.9	0.341	-73.9
5000	0.359	147.7	3.73	38.7	0.0868	31.3	0.331	-76.2
5200	0.366	143.2	3.60	35.6	0.0894	30.5	0.321	-78.6
5400	0.374	139.0	3.46	32.6	0.0931	29.4	0.312	-81.1
5600	0.381	135.1	3.35	29.6	0.0949	28.6	0.304	-83.5
5800	0.388	131.3	3.23	26.6	0.0978	27.0	0.294	-86.0
6000	0.396	127.5	3.13	23.6	0.1013	26.2	0.285	-88.5

## S Parameter

(V<sub>CE</sub> = 2 V, I<sub>C</sub> = 10 mA, Z<sub>O</sub> = 50 Ω)

f (MHz)	S11		S21		S12		S22	
	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)
100	0.864	-9.4	25.72	170.8	0.0082	99.3	0.968	-5.9
200	0.840	-18.0	25.13	162.4	0.0078	94.0	0.967	-10.4
300	0.804	-26.3	24.22	154.7	0.0121	80.8	0.937	-15.0
400	0.769	-34.7	23.24	147.6	0.0174	71.6	0.902	-19.2
500	0.725	-42.4	22.19	141.1	0.0196	68.5	0.863	-23.1
600	0.679	-49.7	21.06	135.0	0.0214	64.0	0.822	-26.1
700	0.636	-56.4	19.83	129.6	0.0247	62.5	0.782	-29.0
800	0.592	-62.7	18.72	124.4	0.0269	59.2	0.744	-31.2
900	0.551	-69.0	17.70	119.9	0.0270	58.5	0.707	-33.0
1000	0.514	-74.6	16.67	115.6	0.0296	55.8	0.678	-34.9
1100	0.478	-80.1	15.71	111.6	0.0319	54.7	0.649	-36.3
1200	0.446	-85.5	14.85	107.9	0.0334	54.7	0.622	-37.5
1300	0.417	-90.3	14.02	104.6	0.0348	54.6	0.597	-38.6
1400	0.392	-95.3	13.27	101.5	0.0368	54.4	0.577	-39.6
1500	0.367	-100.3	12.60	98.6	0.0378	53.4	0.556	-40.6
1600	0.347	-105.1	11.97	95.8	0.0390	53.4	0.538	-41.4
1700	0.329	-110.0	11.39	93.2	0.0414	52.8	0.521	-42.3
1800	0.313	-114.8	10.87	90.7	0.0428	52.3	0.505	-43.0
1900	0.299	-119.8	10.38	88.4	0.0440	52.2	0.491	-43.9
2000	0.286	-124.6	9.93	86.1	0.0444	51.2	0.477	-44.6
2200	0.267	-134.2	9.14	81.8	0.0486	51.2	0.454	-46.1
2400	0.254	-143.7	8.45	77.8	0.0512	50.7	0.432	-47.7
2600	0.244	-153.0	7.85	74.0	0.0541	49.6	0.412	-49.3
2800	0.240	-162.2	7.33	70.4	0.0579	48.6	0.395	-51.0
3000	0.239	-170.3	6.87	66.9	0.0611	48.2	0.380	-52.8
3200	0.241	-178.5	6.46	63.5	0.0630	47.2	0.365	-54.8
3400	0.244	174.3	6.10	60.2	0.0659	46.9	0.351	-56.6
3600	0.249	167.5	5.76	57.1	0.0687	46.0	0.337	-58.3
3800	0.254	162.1	5.47	54.1	0.0722	44.9	0.327	-60.4
4000	0.262	156.8	5.21	51.1	0.0761	44.2	0.318	-62.5
4200	0.270	151.9	4.97	48.1	0.0787	42.6	0.308	-64.8
4400	0.279	147.3	4.75	45.2	0.0831	41.5	0.297	-67.1
4600	0.288	142.9	4.55	42.3	0.0861	40.4	0.289	-69.6
4800	0.296	139.0	4.36	39.4	0.0898	38.9	0.280	-71.9
5000	0.305	135.1	4.19	36.6	0.0925	37.6	0.270	-74.4
5200	0.314	131.7	4.04	33.7	0.0960	36.3	0.261	-76.9
5400	0.323	128.4	3.89	30.9	0.0994	34.8	0.252	-79.5
5600	0.332	125.2	3.76	28.1	0.1020	33.4	0.244	-82.1
5800	0.341	122.0	3.63	25.3	0.1063	31.7	0.235	-84.7
6000	0.349	119.1	3.51	22.5	0.1093	30.2	0.226	-87.3

## S Parameter

 $(V_{CE} = 3 \text{ V}, I_C = 5 \text{ mA}, Z_O = 50 \Omega)$ 

f (MHz)	S11		S21		S12		S22	
	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)
100	0.930	-6.3	14.29	173.6	0.0045	46.5	0.986	-3.6
200	0.918	-12.3	14.19	167.7	0.0087	92.6	0.985	-6.8
300	0.902	-18.0	13.97	162.2	0.0146	67.7	0.976	-10.2
400	0.883	-24.1	13.74	156.9	0.0156	76.6	0.955	-13.3
500	0.859	-30.0	13.50	151.9	0.0205	68.1	0.938	-16.5
600	0.834	-35.8	13.20	147.1	0.0252	68.1	0.916	-19.2
700	0.809	-41.1	12.77	142.5	0.0265	66.6	0.892	-22.0
800	0.781	-46.5	12.42	138.0	0.0302	62.5	0.866	-24.5
900	0.750	-52.3	12.18	134.0	0.0318	61.0	0.840	-26.7
1000	0.719	-57.3	11.78	129.6	0.0353	59.0	0.815	-28.8
1100	0.688	-62.4	11.39	125.6	0.0373	55.2	0.790	-30.8
1200	0.656	-67.5	11.06	121.6	0.0386	54.0	0.766	-32.6
1300	0.627	-72.2	10.65	117.9	0.0411	53.4	0.742	-34.2
1400	0.600	-76.9	10.26	114.6	0.0436	50.7	0.720	-35.8
1500	0.571	-81.7	9.92	111.2	0.0440	48.5	0.698	-37.3
1600	0.544	-86.5	9.58	107.9	0.0456	47.9	0.678	-38.5
1700	0.522	-90.8	9.24	104.9	0.0475	46.6	0.658	-39.8
1800	0.499	-95.4	8.91	102.0	0.0482	46.0	0.640	-41.0
1900	0.479	-99.9	8.60	99.2	0.0495	45.5	0.622	-42.2
2000	0.458	-104.5	8.31	96.4	0.0505	44.1	0.606	-43.3
2200	0.425	-113.2	7.75	91.3	0.0527	42.6	0.576	-45.4
2400	0.397	-122.1	7.26	86.5	0.0549	41.6	0.548	-47.3
2600	0.374	-130.9	6.81	82.0	0.0571	41.2	0.524	-49.2
2800	0.357	-139.6	6.42	77.7	0.0594	41.0	0.503	-51.1
3000	0.343	-147.9	6.05	73.5	0.0609	39.6	0.482	-52.9
3200	0.335	-156.0	5.71	69.6	0.0629	38.2	0.463	-55.0
3400	0.329	-164.1	5.41	65.8	0.0648	37.3	0.447	-56.8
3600	0.324	-171.3	5.13	62.2	0.0662	36.9	0.431	-58.6
3800	0.323	-178.1	4.88	58.8	0.0686	37.1	0.418	-60.4
4000	0.326	175.5	4.66	55.4	0.0713	36.3	0.407	-62.6
4200	0.330	169.4	4.45	52.0	0.0743	35.8	0.395	-64.6
4400	0.334	163.7	4.26	48.7	0.0761	34.9	0.385	-66.8
4600	0.340	158.4	4.09	45.5	0.0788	34.5	0.374	-68.8
4800	0.346	153.2	3.92	42.4	0.0814	33.3	0.364	-71.3
5000	0.353	148.5	3.77	39.3	0.0838	33.1	0.356	-73.3
5200	0.360	144.0	3.64	36.1	0.0865	31.7	0.345	-75.7
5400	0.367	139.9	3.50	33.1	0.0893	31.0	0.337	-78.1
5600	0.375	135.8	3.38	30.1	0.0917	29.9	0.329	-80.4
5800	0.382	131.9	3.27	27.1	0.0937	28.6	0.320	-82.8
6000	0.390	128.2	3.16	24.1	0.0979	27.7	0.311	-85.2

## S Parameter

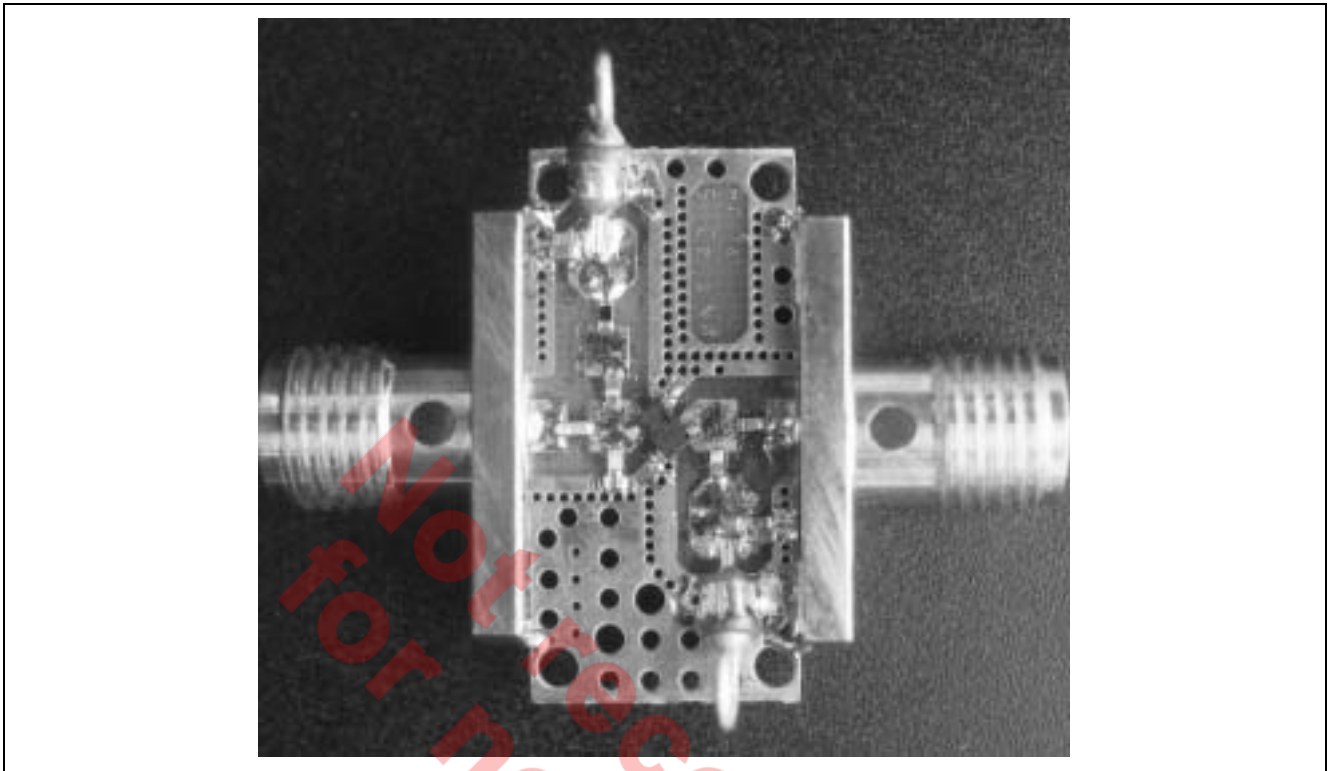
(V<sub>CE</sub> = 3 V, I<sub>C</sub> = 10 mA, Z<sub>O</sub> = 50 Ω)

f (MHz)	S11		S21		S12		S22	
	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)	MAG	ANG(deg.)
100	0.869	-9.2	25.72	170.8	0.0029	161.5	0.979	-6.0
200	0.847	-17.6	25.14	162.6	0.0068	89.6	0.971	-9.8
300	0.814	-25.7	24.24	155.0	0.0133	71.1	0.942	-14.3
400	0.778	-33.9	23.28	148.1	0.0152	73.5	0.906	-18.2
500	0.732	-41.5	22.26	141.5	0.0180	67.2	0.870	-21.9
600	0.686	-48.8	21.13	135.5	0.0209	64.6	0.830	-24.9
700	0.645	-55.3	19.92	130.1	0.0231	63.0	0.791	-27.6
800	0.601	-61.5	18.82	125.0	0.0250	59.1	0.755	-29.8
900	0.558	-67.8	17.81	120.4	0.0271	57.3	0.723	-31.6
1000	0.520	-73.2	16.80	116.1	0.0295	57.6	0.691	-33.2
1100	0.486	-78.5	15.83	112.2	0.0308	56.0	0.663	-34.6
1200	0.452	-83.8	14.98	108.5	0.0319	54.4	0.637	-35.8
1300	0.422	-88.7	14.14	105.1	0.0339	54.4	0.614	-36.9
1400	0.397	-93.6	13.40	102.0	0.0350	55.5	0.592	-37.9
1500	0.373	-98.4	12.72	99.1	0.0366	54.1	0.574	-38.9
1600	0.351	-103.3	12.09	96.3	0.0382	53.1	0.555	-39.5
1700	0.332	-107.9	11.51	93.7	0.0397	52.1	0.540	-40.4
1800	0.315	-112.8	10.98	91.2	0.0401	52.0	0.524	-41.1
1900	0.300	-117.5	10.49	88.9	0.0419	51.5	0.510	-41.9
2000	0.287	-122.3	10.04	86.6	0.0435	52.4	0.497	-42.7
2200	0.266	-131.7	9.24	82.3	0.0464	51.1	0.474	-44.2
2400	0.251	-141.4	8.55	78.3	0.0490	51.3	0.453	-45.8
2600	0.241	-150.6	7.95	74.5	0.0520	50.4	0.433	-47.3
2800	0.235	-159.8	7.42	70.9	0.0554	49.7	0.418	-48.9
3000	0.233	-168.4	6.96	67.4	0.0580	49.0	0.401	-50.5
3200	0.235	-176.3	6.54	64.0	0.0613	47.8	0.388	-52.6
3400	0.238	176.0	6.18	60.7	0.0641	47.2	0.374	-54.3
3600	0.241	169.1	5.84	57.6	0.0668	46.7	0.361	-55.9
3800	0.246	163.4	5.54	54.6	0.0705	46.2	0.350	-57.8
4000	0.255	158.2	5.28	51.6	0.0737	45.0	0.341	-60.0
4200	0.261	153.0	5.03	48.6	0.0770	43.8	0.331	-62.4
4400	0.270	148.1	4.81	45.7	0.0806	42.6	0.321	-64.5
4600	0.279	144.0	4.61	42.8	0.0838	41.7	0.313	-66.9
4800	0.288	139.9	4.42	40.0	0.0860	40.5	0.303	-69.1
5000	0.297	136.1	4.25	37.1	0.0901	39.0	0.294	-71.6
5200	0.306	132.5	4.10	34.3	0.0929	37.6	0.286	-74.0
5400	0.314	129.0	3.95	31.5	0.0967	36.4	0.276	-76.4
5600	0.323	125.8	3.81	28.7	0.0999	34.5	0.269	-78.8
5800	0.331	122.7	3.68	25.9	0.1027	33.1	0.260	-81.4
6000	0.340	119.6	3.56	23.1	0.1058	31.5	0.252	-83.8

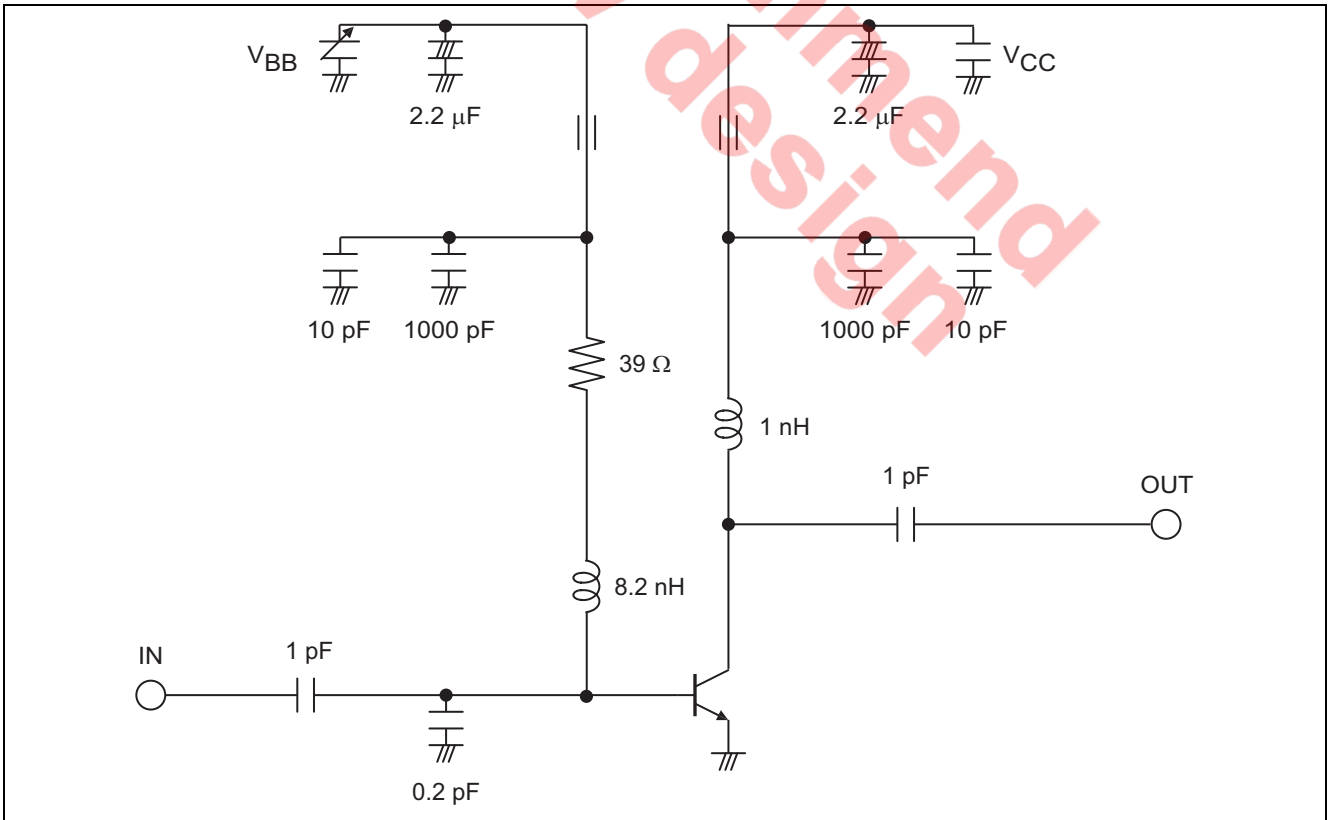


RQG1001 5.8 GHz Evaluation Board

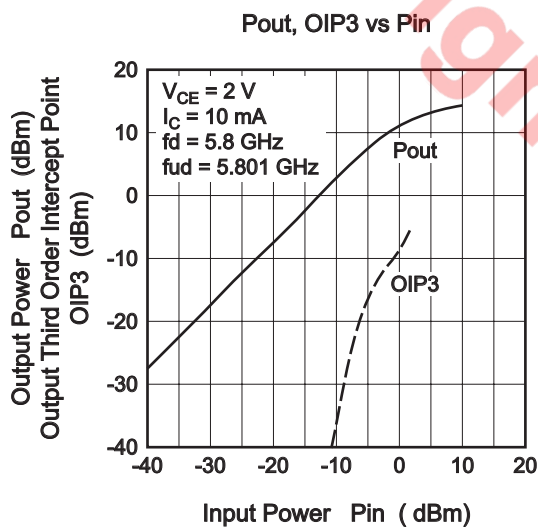
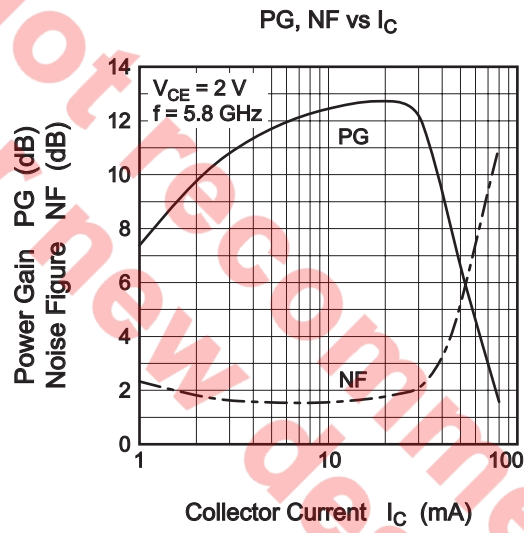
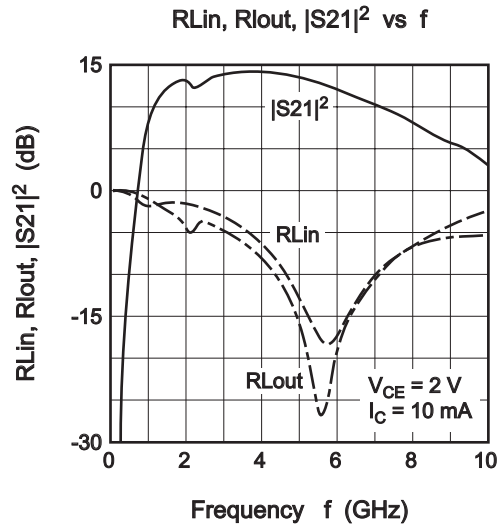
Evaluation Board Pattern Layout



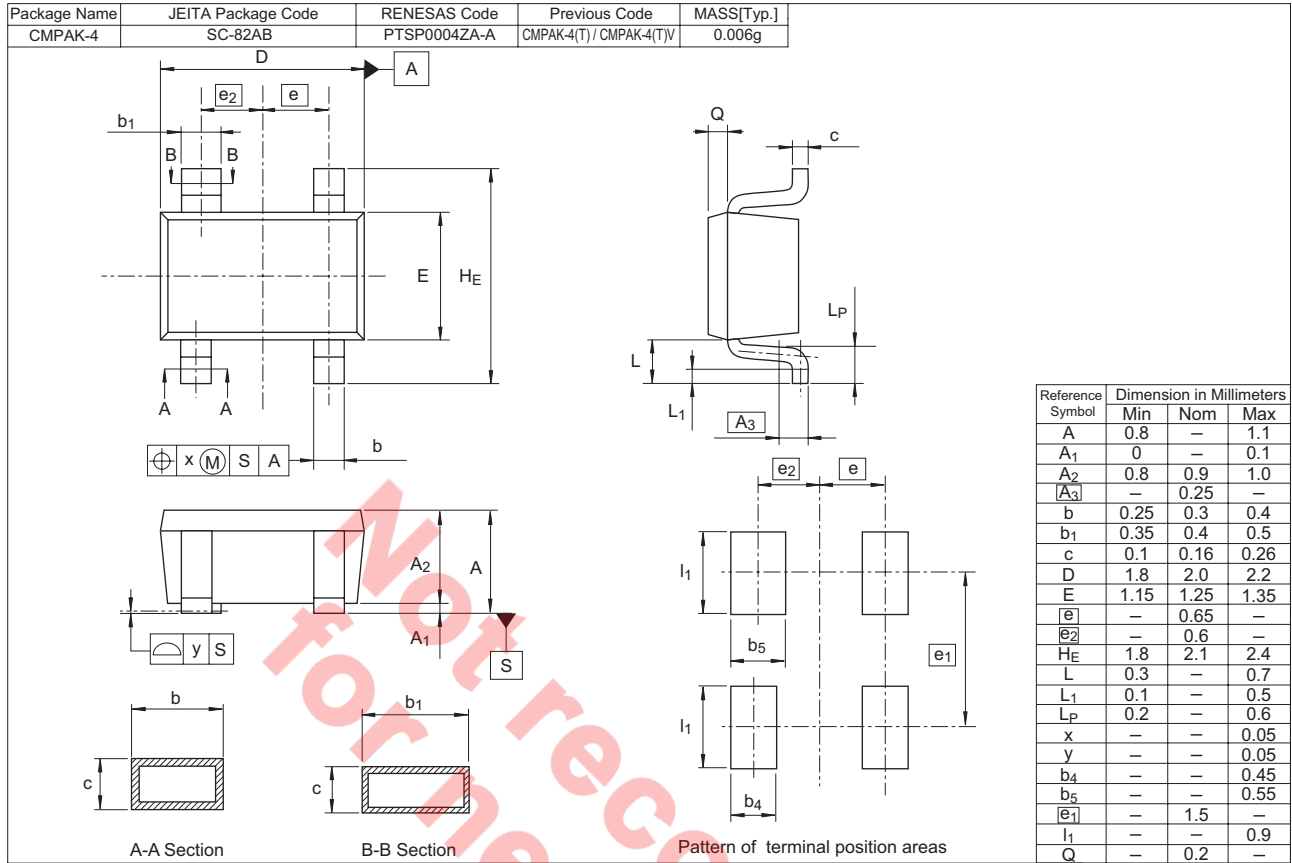
Circuit







### Package Dimensions



### Ordering Information

Part No.	Quantity	Shipping Container
RQG1001UP-TL-E	3000 pcs	φ178 mm reel, 8 mm emboss taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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