NEC

SILICON TRANSISTOR
2SC5006

NPN SILICON EPITAXIAL TRANSISTOR
3 PINS ULTRA SUPER MINI MOLD

DESCRIPTION

The 2SC5006 is an NPN epitaxial silicon transistor designed for use in low noise and small signal amplifiers from VHF band to UHF band. Low noise figure, high gain, and high current capability achieve a very wide dynamic range and excellent linearity. This is achieved by direct nitride passivated base surface, process (NEST2 process) which is an NEC proprietary fabrication technique.

FEATURES

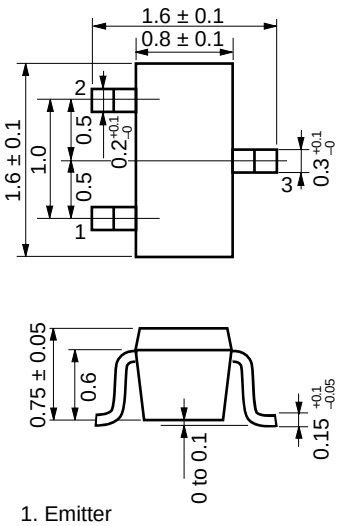
- Low Voltage Use.
- High f_T : 4.5 GHz TYP. (@ V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz)
- Low C_{re} : 0.7 pF TYP. (@ V_{CE} = 3 V, I_E = 0, f = 1 MHz)
- Low NF : 1.2 dB TYP. (@ V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz)
- High $|S_{21e}|^2$: 9 dB TYP. (@ V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz)
- Ultra Super Mini Mold Package.

ORDERING INFORMATION

PART NUMBER	QUANTITY	PACKING STYLE
2SC5006	50 pcs./Unit	Embossed tape 8 mm wide. Pin3 (Collector) face to perforation side of the tape.
2SC5006-T1	3 kpcs./Reel	

***** Please contact with responsible NEC person, if you require evaluation sample. Unit sample quantity shall be 50 pcs.

PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Base
3. Collector

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	12	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_T	125	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	–60 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			1.0	μA	V_{CB} = 10 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			1.0	μA	V_{EB} = 1 V, I_C = 0
DC Current Gain	h_{FE}	80		160		V_{CE} = 3 V, I_C = 7 mA***1**
Gain Bandwidth Product	f_T	3.0	4.5		GHz	V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz
Feed-Back Capacitance	C_{re}		0.7	1.5	pF	V_{CB} = 3 V, I_E = 0, f = 1 MHz***2**
Insertion Power Gain	$\|S_{21e}\|^2$	7.0	9.0		dB	V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz
Noise Figure	NF		1.2	2.5	dB	V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz

***1** Pulse Measurement PW ≤ 350 μs, Duty Cycle ≤ 2 %

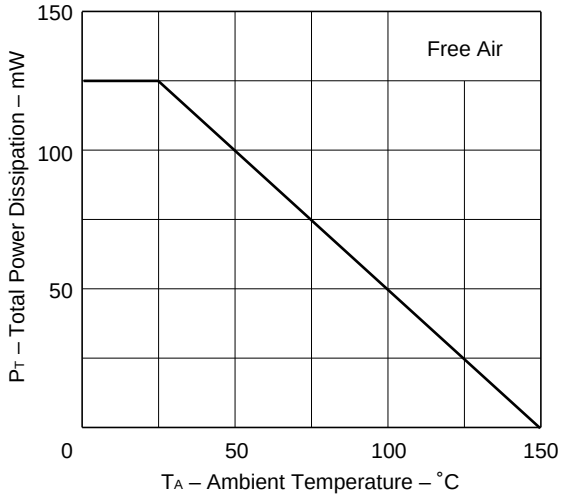
***2** The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

h_{FE} Classification

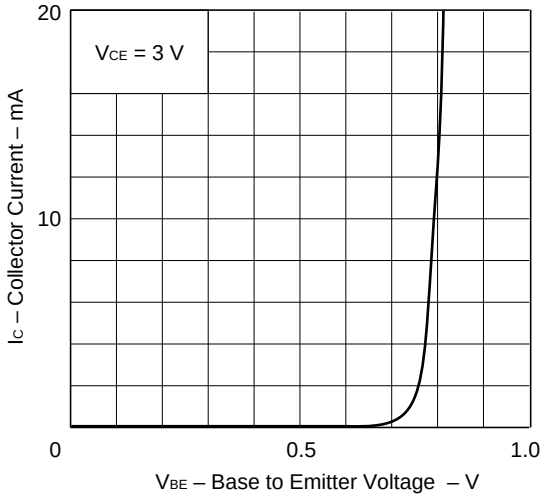
RANK	FB
Marking	24
h_{FE}	80 to 160

TYPICAL CHARACTERISTICS (T_A = 25 °C)

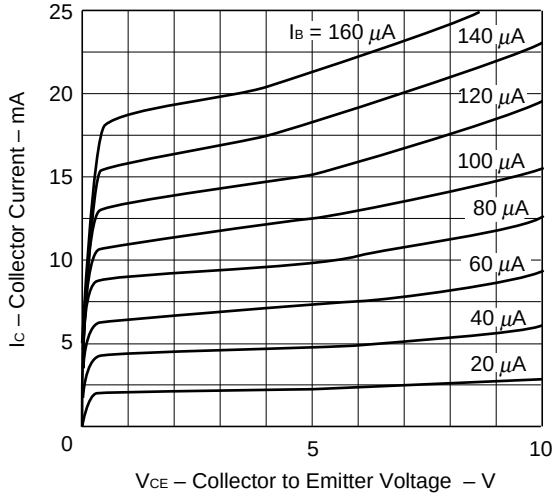
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



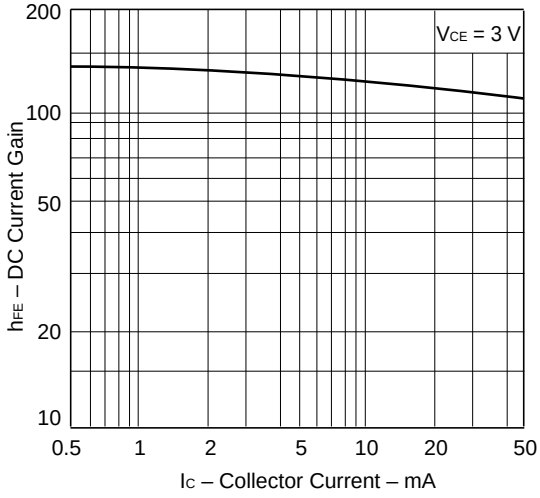
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



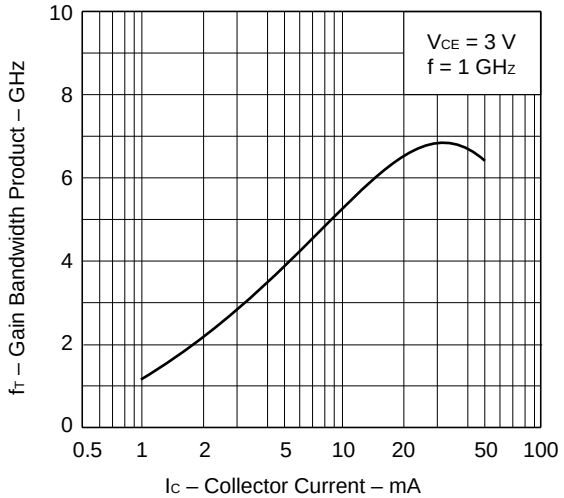
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



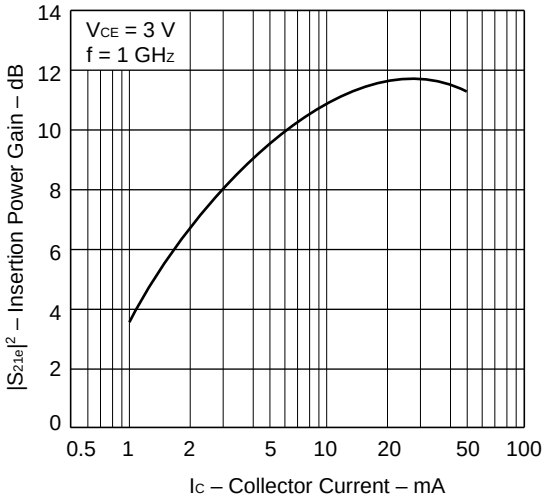
DC CURRENT GAIN vs. COLLECTOR CURRENT



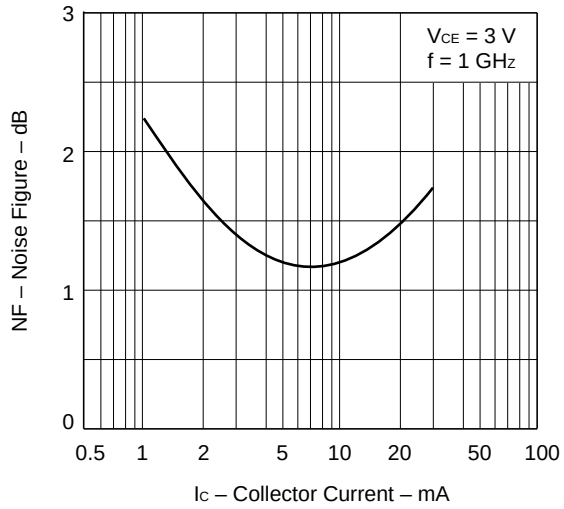
GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



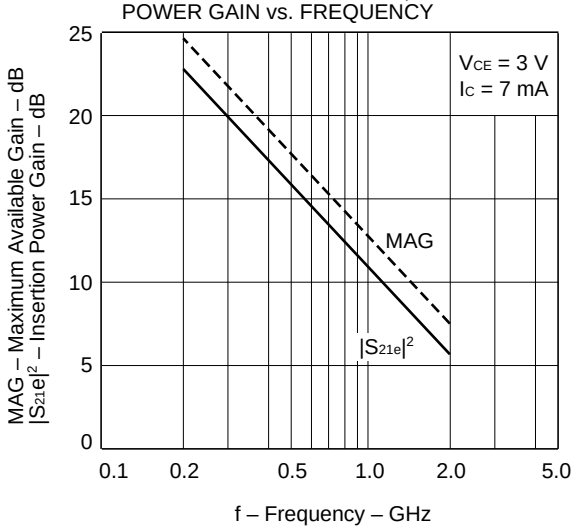
INSERTION POWER GAIN vs. COLLECTOR CURRENT



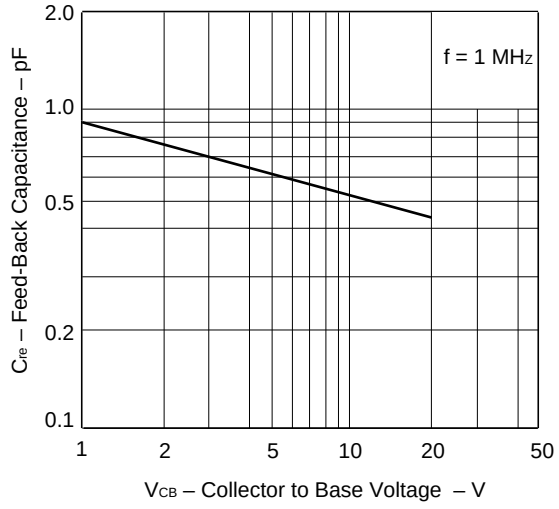
NOISE FIGURE vs. COLLECTOR CURRENT



MAXIMUM AVAILABLE GAIN, INSERTION POWER GAIN vs. FREQUENCY



FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



S-PARAMETER

VCE = 3 V, IC = 10 mA, ZO = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.745	–49.8	15.831	144.0	.034	61.8	.782	–34.1
200.00	.627	–94.7	13.204	121.0	.049	51.3	.551	–50.9
300.00	.565	–123.3	10.330	106.9	.058	48.6	.412	–58.5
400.00	.535	–140.9	8.264	97.8	.066	48.6	.331	–62.2
500.00	.522	–153.3	6.841	91.1	.073	49.5	.278	–64.8
600.00	.518	–162.1	5.783	85.6	.080	50.7	.238	–66.7
700.00	.515	–169.5	5.026	80.9	.089	51.0	.212	–68.1
800.00	.515	–175.6	4.430	76.7	.096	51.8	.190	–70.6
900.00	.517	179.1	3.984	72.9	.104	52.2	.173	–71.8
1000.00	.518	174.3	3.589	69.2	.113	52.5	.160	–75.2
1100.00	.523	170.2	3.279	65.8	.122	52.7	.147	–76.7
1200.00	.528	165.9	3.042	62.5	.131	52.6	.140	–79.9
1300.00	.532	162.3	2.814	59.3	.139	52.1	.129	–83.1
1400.00	.538	158.6	2.629	55.9	.148	51.9	.124	–86.4
1500.00	.542	155.4	2.466	53.0	.157	51.1	.114	–91.6
1600.00	.549	152.3	2.334	49.8	.166	50.6	.111	–95.4
1700.00	.553	149.1	2.202	46.8	.175	49.8	.104	–103.8
1800.00	.562	146.4	2.093	44.1	.185	48.9	.101	–107.5
1900.00	.567	143.4	1.994	41.5	.194	47.5	.098	–118.2
2000.00	.577	140.7	1.902	38.5	.202	46.8	.088	–129.3
2100.00	.584	138.0	1.828	35.4	.210	45.8	.093	–138.5
2200.00	.590	135.6	1.749	33.1	.219	44.7	.092	–146.4
2300.00	.600	132.9	1.681	30.5	.229	43.5	.099	–155.3
2400.00	.605	130.7	1.616	27.8	.236	42.2	.104	–162.8
2500.00	.613	128.4	1.562	25.4	.246	41.2	.112	–170.0
2600.00	.622	126.0	1.507	22.7	.255	40.0	.119	–176.9
2700.00	.629	123.9	1.453	20.5	.263	38.8	.130	176.7
2800.00	.639	121.6	1.409	17.9	.272	37.1	.138	172.2
2900.00	.643	119.5	1.360	15.7	.280	36.0	.153	166.6
3000.00	.654	117.6	1.327	13.4	.290	34.7	.160	163.0

V_{CE} = 3 V, I_C = 7 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.812	–41.5	11.847	148.4	.036	64.6	.840	–27.9
200.00	.706	–80.2	10.621	127.0	.056	51.2	.634	–43.9
300.00	.629	–109.6	8.889	112.3	.066	45.3	.494	–51.4
400.00	.585	–129.8	7.349	101.8	.073	43.6	.405	–55.4
500.00	.562	–144.2	6.212	94.1	.079	43.8	.346	–57.7
600.00	.550	–154.6	5.288	88.0	.085	44.5	.303	–59.3
700.00	.544	–163.2	4.643	82.7	.091	45.1	.273	–60.6
800.00	.541	–170.2	4.102	78.1	.098	45.9	.249	–62.3
900.00	.543	–176.1	3.705	73.8	.104	47.2	.230	–63.4
1000.00	.541	178.5	3.346	69.8	.111	47.8	.216	–66.2
1100.00	.543	173.8	3.065	66.3	.119	48.0	.203	–67.4
1200.00	.548	169.1	2.835	62.8	.127	48.1	.195	–69.8
1300.00	.550	165.4	2.628	59.3	.134	48.5	.183	–72.3
1400.00	.557	161.4	2.460	56.0	.142	48.8	.176	–75.1
1500.00	.560	157.8	2.310	52.6	.149	48.2	.166	–78.7
1600.00	.568	154.4	2.184	49.7	.158	48.2	.162	–81.8
1700.00	.572	151.0	2.075	46.6	.166	47.6	.152	–87.6
1800.00	.580	148.2	1.966	43.7	.175	47.5	.149	–90.7
1900.00	.585	145.0	1.876	40.7	.183	46.7	.143	–97.9
2000.00	.594	142.1	1.784	38.0	.192	45.9	.128	–104.5
2100.00	.601	139.3	1.716	34.8	.200	45.3	.128	–112.1
2200.00	.608	136.8	1.646	32.4	.209	44.6	.124	–118.6
2300.00	.616	134.0	1.579	29.6	.218	43.7	.126	–126.7
2400.00	.620	131.5	1.520	26.9	.226	42.7	.127	–134.1
2500.00	.629	129.2	1.469	24.3	.235	41.8	.130	–142.4
2600.00	.638	126.7	1.418	21.7	.244	40.7	.133	–149.2
2700.00	.645	124.5	1.368	19.4	.253	39.6	.141	–157.4
2800.00	.653	122.1	1.326	16.8	.262	38.5	.147	–163.5
2900.00	.659	120.1	1.280	14.5	.271	37.4	.157	–170.6
3000.00	.669	118.1	1.249	12.2	.281	36.0	.165	–175.6

S-PARAMETER

V_{CE} = 3 V, I_C = 5 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.812	–41.5	11.847	148.4	.036	64.6	.840	–27.9
200.00	.706	–80.2	10.621	127.0	.056	51.2	.634	–43.9
300.00	.629	–109.6	8.889	112.3	.066	45.3	.494	–51.4
400.00	.585	–129.8	7.349	101.8	.073	43.6	.405	–55.4
500.00	.562	–144.2	6.212	94.1	.079	43.8	.346	–57.7
600.00	.550	–154.6	5.288	88.0	.085	44.5	.303	–59.3
700.00	.544	–163.2	4.643	82.7	.091	45.1	.273	–60.6
800.00	.541	–170.2	4.102	78.1	.098	45.9	.249	–62.3
900.00	.543	–176.1	3.705	73.8	.104	47.2	.230	–63.4
1000.00	.541	178.5	3.346	69.8	.111	47.8	.216	–66.2
1100.00	.543	173.8	3.065	66.3	.119	48.0	.203	–67.4
1200.00	.548	169.1	2.835	62.8	.127	48.1	.195	–69.8
1300.00	.550	165.4	2.628	59.3	.134	48.5	.183	–72.3
1400.00	.557	161.4	2.460	56.0	.142	48.8	.176	–75.1
1500.00	.560	157.8	2.310	52.6	.149	48.2	.166	–78.7
1600.00	.568	154.4	2.184	49.7	.158	48.2	.162	–81.8
1700.00	.572	151.0	2.075	46.6	.166	47.6	.152	–87.6
1800.00	.580	148.2	1.966	43.7	.175	47.5	.149	–90.7
1900.00	.585	145.0	1.876	40.7	.183	46.7	.143	–97.9
2000.00	.594	142.1	1.784	38.0	.192	45.9	.128	–104.5
2100.00	.601	139.3	1.716	34.8	.200	45.3	.128	–112.1
2200.00	.608	136.8	1.646	32.4	.209	44.6	.124	–118.6
2300.00	.616	134.0	1.579	29.6	.218	43.7	.126	–126.7
2400.00	.620	131.5	1.520	26.9	.226	42.7	.127	–134.1
2500.00	.629	129.2	1.469	24.3	.235	41.8	.130	–142.4
2600.00	.638	126.7	1.418	21.7	.244	40.7	.133	–149.2
2700.00	.645	124.5	1.368	19.4	.253	39.6	.141	–157.4
2800.00	.653	122.1	1.326	16.8	.262	38.5	.147	–163.5
2900.00	.659	120.1	1.280	14.5	.271	37.4	.157	–170.6
3000.00	.669	118.1	1.249	12.2	.281	36.0	.165	–175.6

V_{CE} = 3 V, I_C = 3 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.931	–29.1	5.571	155.3	.042	70.0	.933	–16.3
200.00	.857	–56.6	5.450	138.3	.071	55.4	.813	–28.4
300.00	.790	–81.9	5.078	124.1	.088	45.7	.698	–35.7
400.00	.736	–102.8	4.587	112.7	.098	39.2	.613	–40.5
500.00	.696	–120.2	4.161	103.1	.104	35.4	.548	–43.5
600.00	.669	–133.4	3.667	95.2	.107	32.4	.499	–45.8
700.00	.647	–144.9	3.340	88.3	.110	31.2	.464	–47.7
800.00	.635	–154.5	3.015	82.4	.112	30.8	.437	–49.5
900.00	.628	–162.4	2.768	77.1	.115	31.0	.415	–51.0
1000.00	.619	–169.7	2.534	72.2	.116	31.2	.398	–53.6
1100.00	.619	–175.5	2.333	67.8	.118	31.8	.384	–55.4
1200.00	.621	178.8	2.179	63.9	.120	32.9	.374	–57.7
1300.00	.621	173.8	2.026	59.9	.123	34.2	.365	–59.8
1400.00	.623	169.1	1.901	55.9	.126	35.7	.356	–62.7
1500.00	.626	164.7	1.790	52.2	.129	36.6	.346	–65.5
1600.00	.632	160.7	1.700	48.7	.133	38.2	.341	–68.8
1700.00	.635	156.6	1.620	45.1	.138	39.4	.331	–72.3
1800.00	.641	153.3	1.538	42.4	.145	41.0	.328	–75.5
1900.00	.645	149.5	1.462	38.8	.151	41.8	.319	–80.1
2000.00	.653	146.1	1.402	35.8	.158	42.7	.305	–83.8
2100.00	.660	142.8	1.350	32.7	.165	43.3	.301	–88.9
2200.00	.664	139.9	1.295	30.0	.173	44.2	.297	–93.5
2300.00	.671	136.7	1.245	26.9	.182	44.3	.294	–99.0
2400.00	.676	133.8	1.199	24.0	.191	44.4	.291	–104.1
2500.00	.684	131.2	1.158	21.5	.201	44.5	.289	–110.0
2600.00	.690	128.3	1.118	18.7	.210	44.2	.287	–115.2
2700.00	.696	125.9	1.079	16.3	.221	43.7	.289	–121.9
2800.00	.705	123.3	1.048	13.7	.233	43.1	.289	–127.6
2900.00	.709	121.0	1.009	11.3	.243	42.4	.294	–134.0
3000.00	.717	118.6	.983	9.1	.255	41.6	.298	–139.4

S-PARAMETER

V_{CE} = 3 V, I_C = 1 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.984	–20.9	1.971	162.0	.045	75.7	.980	–8.3
200.00	.952	–42.4	1.987	146.3	.082	62.6	.938	–15.7
300.00	.917	–62.4	1.964	133.0	.111	51.8	.882	–21.7
400.00	.880	–80.5	1.870	121.5	.130	42.0	.831	–26.4
500.00	.850	–96.8	1.812	111.5	.143	34.9	.787	–30.1
600.00	.822	–110.7	1.645	102.1	.149	28.2	.750	–33.5
700.00	.798	–123.5	1.585	93.9	.153	23.3	.721	–36.4
800.00	.778	–134.8	1.496	86.6	.152	19.1	.697	–39.3
900.00	.763	–144.6	1.430	80.3	.150	16.6	.677	–41.9
1000.00	.752	–153.6	1.347	74.0	.147	13.1	.660	–44.9
1100.00	.743	–161.2	1.266	68.7	.143	11.8	.650	–47.9
1200.00	.742	–168.3	1.202	63.5	.137	10.4	.640	–50.9
1300.00	.738	–174.4	1.128	58.8	.131	10.3	.632	–53.8
1400.00	.740	179.5	1.069	54.2	.126	11.0	.625	–57.0
1500.00	.737	174.2	1.016	50.0	.120	12.1	.617	–60.3
1600.00	.740	169.1	.973	46.2	.113	14.8	.614	–63.9
1700.00	.741	164.0	.932	42.3	.110	17.8	.605	–67.7
1800.00	.745	159.8	.890	39.1	.107	22.5	.602	–71.5
1900.00	.749	155.1	.850	35.5	.107	27.2	.595	–75.7
2000.00	.752	151.1	.820	32.3	.108	32.6	.586	–80.0
2100.00	.758	147.1	.785	29.3	.112	37.8	.582	–84.8
2200.00	.760	143.5	.756	26.7	.119	42.5	.579	–89.3
2300.00	.765	139.8	.727	24.0	.127	47.0	.576	–94.5
2400.00	.765	136.4	.703	21.6	.139	49.6	.573	–99.4
2500.00	.771	133.2	.678	19.3	.152	52.0	.570	–104.9
2600.00	.775	129.9	.657	17.2	.168	53.2	.565	–110.1
2700.00	.777	127.0	.633	15.4	.181	53.6	.566	–115.9
2800.00	.784	123.9	.616	13.5	.199	53.3	.565	–121.3
2900.00	.784	121.2	.596	12.0	.215	53.2	.567	–127.3
3000.00	.790	118.6	.584	10.6	.233	51.9	.567	–132.8

V_{CE} = 1 V, I_C = 5 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.842	–44.3	8.583	146.4	.055	62.1	.831	–32.8
200.00	.743	–83.2	7.816	125.8	.082	46.4	.619	–53.1
300.00	.683	–113.0	6.585	110.6	.095	38.8	.473	–64.8
400.00	.649	–133.3	5.491	99.9	.101	35.5	.379	–72.3
500.00	.633	–147.6	4.661	91.7	.108	34.9	.318	–78.5
600.00	.621	–157.8	3.977	85.2	.112	34.1	.272	–83.5
700.00	.618	–166.1	3.499	79.5	.118	34.5	.242	–87.8
800.00	.613	–172.9	3.094	74.6	.122	35.2	.217	–92.8
900.00	.616	–178.8	2.792	70.3	.129	35.7	.199	–97.3
1000.00	.614	175.9	2.525	65.9	.134	36.2	.187	–102.4
1100.00	.618	171.2	2.327	62.0	.141	37.1	.174	–106.5
1200.00	.622	166.9	2.158	58.2	.147	37.3	.170	–111.3
1300.00	.626	163.0	2.003	54.4	.154	38.0	.161	–116.6
1400.00	.630	159.1	1.878	50.7	.161	38.6	.160	–121.4
1500.00	.633	155.6	1.762	47.5	.168	38.4	.155	–128.6
1600.00	.640	152.1	1.668	44.3	.177	38.6	.156	–133.0
1700.00	.644	148.8	1.584	41.0	.183	38.5	.159	–140.4
1800.00	.651	146.0	1.503	37.7	.192	38.3	.160	–144.6
1900.00	.656	142.7	1.434	34.7	.200	37.9	.167	–152.0
2000.00	.663	139.9	1.371	31.7	.208	37.4	.167	–160.7
2100.00	.670	137.0	1.318	28.7	.217	36.7	.178	–166.1
2200.00	.674	134.3	1.267	26.4	.225	36.4	.185	–171.2
2300.00	.683	131.6	1.217	23.4	.234	35.7	.196	–176.2
2400.00	.686	129.1	1.173	20.7	.242	34.7	.205	179.3
2500.00	.694	126.7	1.134	18.2	.251	33.9	.218	175.3
2600.00	.701	124.2	1.094	15.4	.260	33.0	.227	170.3
2700.00	.707	122.0	1.056	13.3	.268	31.8	.244	166.4
2800.00	.712	119.6	1.026	10.7	.278	30.9	.255	162.7
2900.00	.717	117.4	.989	8.6	.286	29.9	.270	159.1
3000.00	.725	115.3	.964	6.4	.295	28.7	.282	155.9

S-PARAMETER

V_{CE} = 1 V, I_C = 3 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.917	–34.1	5.513	151.3	.059	67.2	.900	–23.1
200.00	.829	–66.1	5.260	133.1	.095	49.7	.740	–39.7
300.00	.764	–93.7	4.746	117.9	.115	39.8	.602	–49.8
400.00	.718	–115.3	4.195	106.1	.125	33.8	.505	–56.5
500.00	.691	–132.2	3.715	96.7	.131	29.9	.437	–61.3
600.00	.670	–144.4	3.234	89.0	.134	27.4	.385	–65.0
700.00	.659	–154.8	2.902	82.3	.137	26.0	.349	–68.3
800.00	.651	–163.1	2.601	76.6	.138	25.2	.320	–71.7
900.00	.650	–170.2	2.373	71.4	.140	25.1	.299	–74.6
1000.00	.645	–176.5	2.165	66.6	.143	25.3	.284	–78.2
1100.00	.646	178.2	1.987	62.3	.144	26.0	.268	–81.7
1200.00	.651	173.1	1.854	57.9	.146	26.7	.261	–85.0
1300.00	.651	168.6	1.725	53.9	.149	27.7	.251	–88.8
1400.00	.656	164.1	1.621	49.9	.152	28.7	.246	–92.9
1500.00	.657	160.2	1.523	46.3	.157	29.7	.236	–97.6
1600.00	.665	156.5	1.448	43.1	.162	30.7	.237	–102.4
1700.00	.668	152.6	1.376	39.2	.167	31.4	.231	–108.3
1800.00	.675	149.4	1.309	36.3	.172	32.9	.233	–112.5
1900.00	.679	146.0	1.249	32.8	.178	33.2	.231	–119.3
2000.00	.687	142.7	1.194	29.8	.184	33.6	.224	–126.5
2100.00	.695	139.6	1.148	26.6	.192	34.0	.231	–132.8
2200.00	.699	136.7	1.105	23.9	.199	34.4	.234	–138.6
2300.00	.705	133.8	1.062	21.1	.208	34.5	.242	–144.9
2400.00	.708	131.1	1.021	18.2	.216	34.6	.248	–150.5
2500.00	.717	128.5	.988	15.8	.226	34.5	.259	–156.3
2600.00	.724	125.9	.953	13.1	.236	33.9	.265	–162.0
2700.00	.728	123.3	.918	10.9	.245	33.4	.280	–167.7
2800.00	.736	120.8	.891	8.4	.257	32.7	.291	–173.0
2900.00	.739	118.6	.860	6.3	.265	32.1	.306	–178.0
3000.00	.747	116.4	.838	4.1	.277	31.2	.317	177.5

V_{CE} = 1 V, I_C = 1 mA, Z_O = 50 Ω

FREQUENCY	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.976	–23.4	1.919	159.5	.064	73.8	.968	–11.6
200.00	.939	–46.9	1.964	141.9	.115	58.7	.906	–21.4
300.00	.896	–68.6	1.916	127.2	.152	46.5	.830	–29.0
400.00	.856	–87.7	1.803	114.8	.175	36.7	.765	–35.0
500.00	.826	–104.5	1.720	104.3	.189	29.1	.709	–39.7
600.00	.799	–118.3	1.556	94.5	.195	22.4	.664	–43.8
700.00	.778	–130.8	1.482	86.2	.198	17.5	.630	–47.4
800.00	.762	–141.5	1.384	78.7	.197	13.1	.603	–50.8
900.00	.751	–150.6	1.309	72.2	.194	9.9	.583	–54.2
1000.00	.741	–159.1	1.229	65.9	.190	6.7	.564	–58.0
1100.00	.737	–166.2	1.152	60.5	.184	5.2	.552	–61.5
1200.00	.740	–172.7	1.089	55.3	.176	3.4	.544	–65.2
1300.00	.737	–178.6	1.021	50.4	.168	2.7	.535	–68.9
1400.00	.740	175.8	.969	45.7	.162	2.7	.530	–73.2
1500.00	.740	170.9	.918	41.6	.154	3.3	.520	–77.4
1600.00	.745	166.2	.875	37.7	.146	4.8	.520	–81.9
1700.00	.746	161.4	.835	33.8	.140	6.5	.513	–86.8
1800.00	.752	157.3	.797	30.6	.135	10.6	.513	–91.3
1900.00	.755	153.1	.764	27.0	.132	14.1	.507	–97.1
2000.00	.762	149.1	.735	23.9	.131	18.5	.498	–102.6
2100.00	.767	145.3	.701	21.1	.133	23.1	.501	–108.4
2200.00	.771	141.9	.676	18.7	.138	27.8	.502	–114.0
2300.00	.778	138.4	.648	16.1	.145	31.9	.504	–120.1
2400.00	.778	135.0	.623	13.8	.155	35.1	.505	–125.8
2500.00	.785	131.9	.602	11.9	.166	37.5	.511	–132.0
2600.00	.790	128.7	.582	9.9	.180	39.3	.511	–137.9
2700.00	.792	125.9	.562	8.4	.194	40.5	.522	–144.2
2800.00	.797	122.9	.546	6.8	.210	40.5	.524	–150.1
2900.00	.800	120.1	.528	5.6	.225	40.2	.535	–156.2
3000.00	.804	117.5	.516	4.7	.243	39.6	.540	–161.7

[MEMO]