

**NPN Planer RF TRANSISTOR**

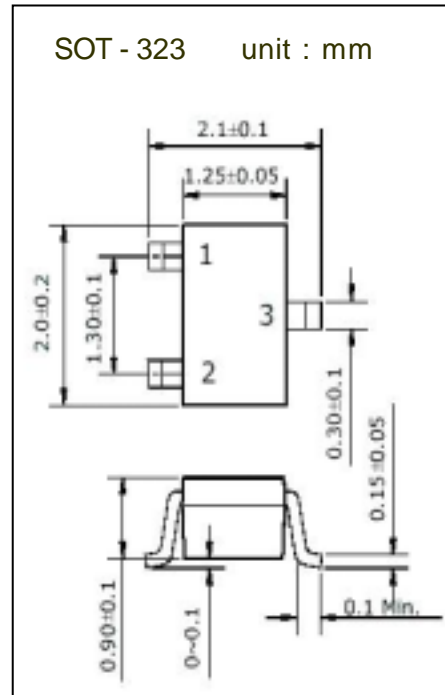
**DESCRIPTION**

The TARF1502U is a low Noise figure and good associated gain performance at UHF,VHF and Microwave frequencies

It is suitable for a high density surface mount since transistor has been SOT323 package

**FEATURES**

- o Low Noise Figure
  - N.F = 1.1dB TYP. @ f=1GHz,  $V_{CE}=3V$ ,  $I_c=5mA$
  - N.F = 1.5dB TYP. @ f=2GHz,  $V_{CE}=3V$ ,  $I_c=5mA$
- o High Gain
  - MSG = 17.5dB TYP. @ f=1GHz,  $V_{CE}=3V$ ,  $I_c=15mA$
  - MAG = 11.5dB TYP. @ f=2GHz,  $V_{CE}=3V$ ,  $I_c=15mA$
- o High Transition Frequency
  - $f_T = 12GHz$  TYP. @ f=2GHz,  $V_{CE}=3V$ ,  $I_c=15mA$



**PIN CONFIGURATION**

PIN NO	SYMBOL	DESCRIPTION
1	B	Base
2	E	Emitter
3	C	Collector

**MARKING : AC1**

**MAXIMUM RATINGS**

SYMBOL	PARAMETER	CONDITION	VALUE	Unit
$V_{CBO}$	Collector-Base Voltage	Open Emitter	25	V
$V_{CEO}$	Collector-Emitter Voltage	Open Base	12	V
$V_{EBO}$	Emitter-Base Voltage	Open Collector	2.5	V
$I_c$	Collector Current (DC)		35	mA
$P_T$	Total Power Dissipation	$T_s = 60$	150	mW
$T_{STG}$	Storage Temperature		-65 ~ 150	
$T_J$	Operating Junction Temperature		150	

**Electrical Characteristics (  $T_A = 25$  )**

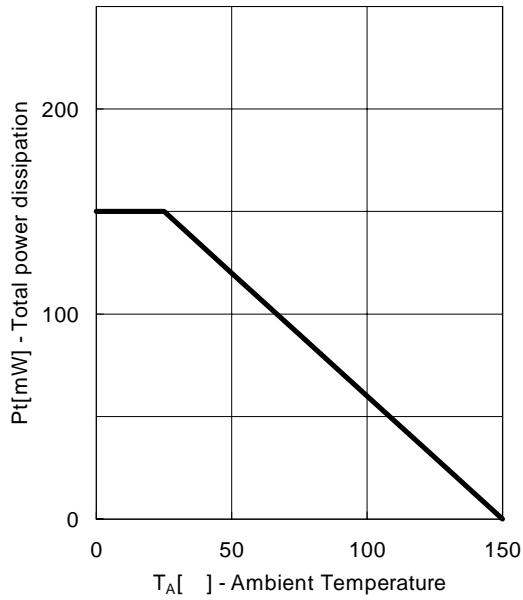
SYMBOL	PARAMETER	CONDITION	VALUE			Unit
			min	typ	max	
V <sub>CB0</sub>	Collector-Base Voltage	I <sub>CE</sub> = 100uA, I <sub>E</sub> = 0	20	25		V
V <sub>CEO</sub>	Collector-Emitter Voltage	I <sub>CE</sub> = 100uA, I <sub>B</sub> = 0	12	14		V
I <sub>CB0</sub>	Collector-Cut-off current	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0			300	n A
I <sub>EBO</sub>	Emitter-Cut-off current	V <sub>EB</sub> = 1V, I <sub>C</sub> = 0			100	n A
h <sub>fe</sub>	D.C current Gain	V <sub>CE</sub> = 3V, I <sub>C</sub> = 15mA	100	150		
f <sub>T</sub>	Transition Frequency	V <sub>CE</sub> = 3V, I <sub>C</sub> = 15mA		12		GHz
C <sub>CB</sub>	Collector-Base Capacitance	V <sub>CB</sub> = 10V, f = 1MHz		0.47		pF

**Performance Characteristics**

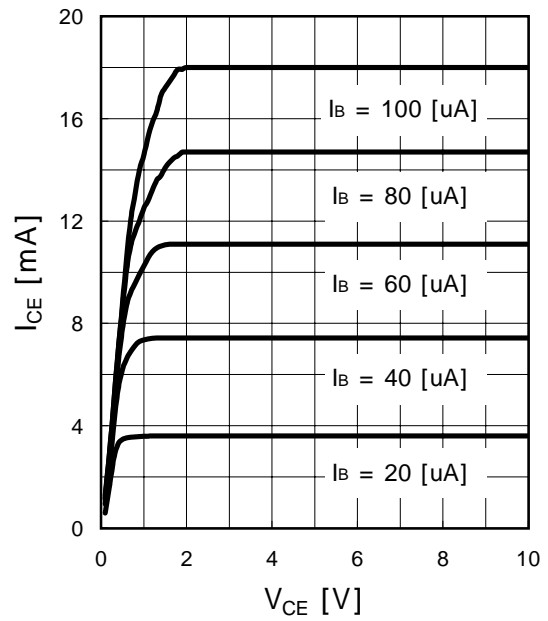
SYMBOL	PARAMETER	CONDITION	VALUE			Unit
			min	typ	max	
[S <sub>21</sub> ] <sup>2</sup>	Insertion Power Gain	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=1GHz		13		dB
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=1GHz		14.5		
		V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=2GHz		7		
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=2GHz		8.5		
MSG	Maximum Stable Gain	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=1GHz		16		dB
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=1GHz		17.5		
MAG	Maximum Available Gain	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=2GHz		11		dB
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=2GHz		11.5		
NF <sub>min</sub>	Minium Noise Figure	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=1GHz		1.1		dB
		V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=2GHz		1.5		
r <sub>n</sub>	Noise Resistance	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=1GHz		0.06		
		V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=2GHz		0.04		
G <sub>A</sub>	Associated Gain	V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=1GHz		14		dB
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=1GHz		15.5		
		V <sub>CE</sub> =3V, I <sub>C</sub> =5mA, f=2GHz		9.5		
		V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=2GHz		10.5		
P <sub>-1dB</sub>	1dB Compression point	V <sub>CE</sub> =3V, I <sub>C</sub> =15mA, f=1GHz (Z <sub>S</sub> =Z <sub>sopt</sub> , Z <sub>L</sub> =Z <sub>Lopt</sub> )		10		dBm

**Total power dissipation  $P_t = f(T_A)$**

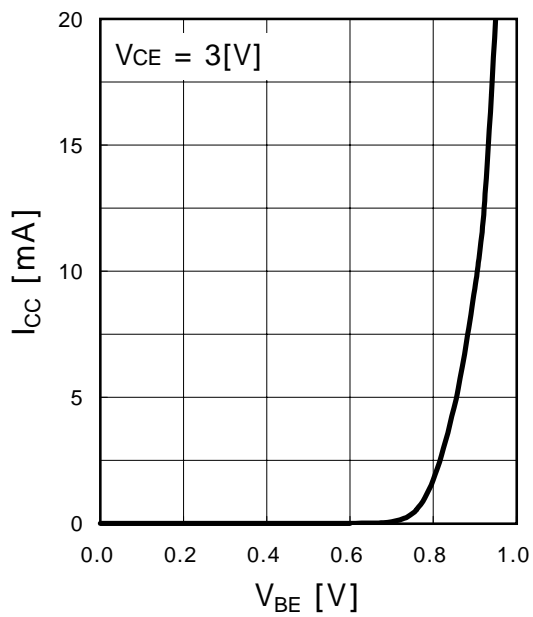
(  $T_A = 25$  )



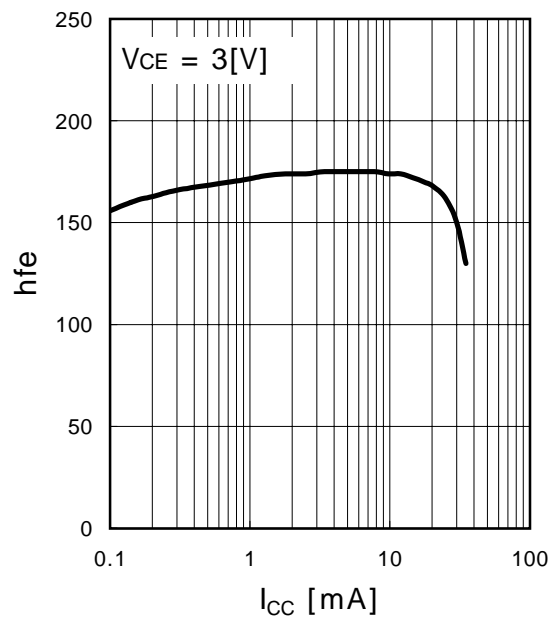
**ICE vs. VCE**



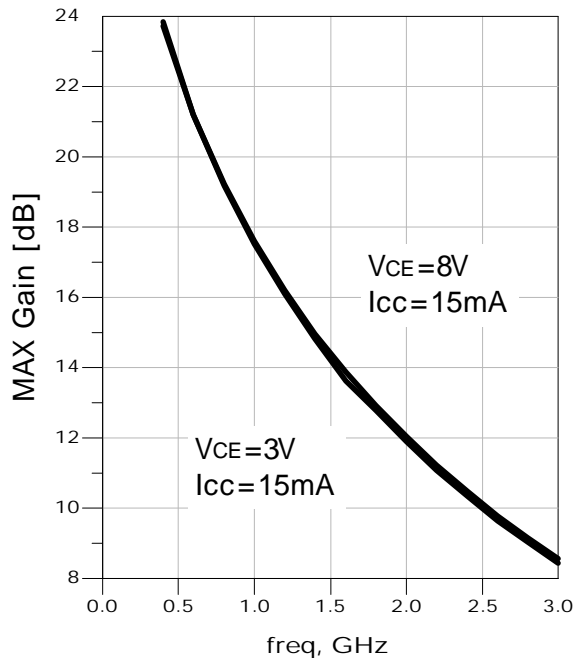
**ICC vs. VBE**



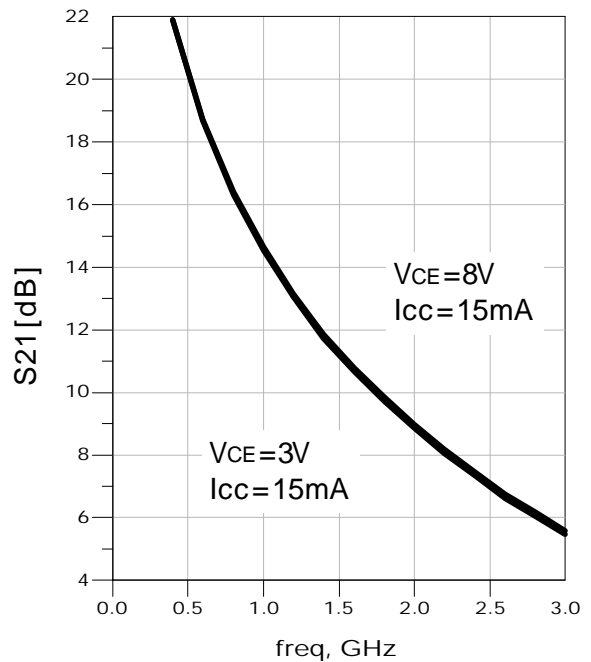
**hfe vs. ICC**



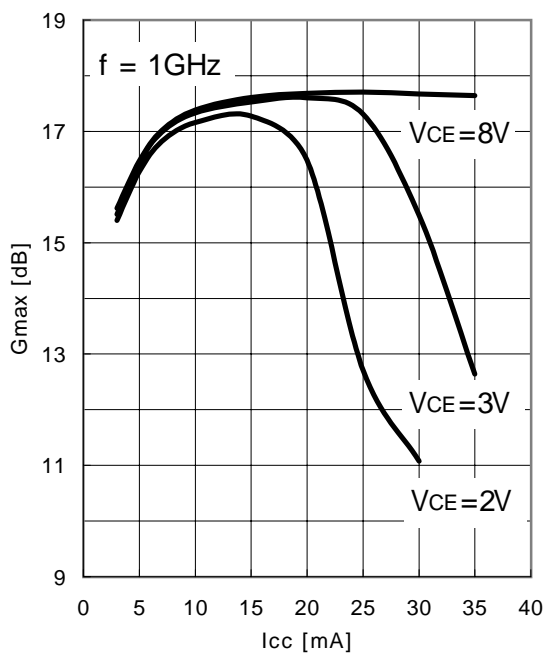
Power Gain : MSG vs. Frequency



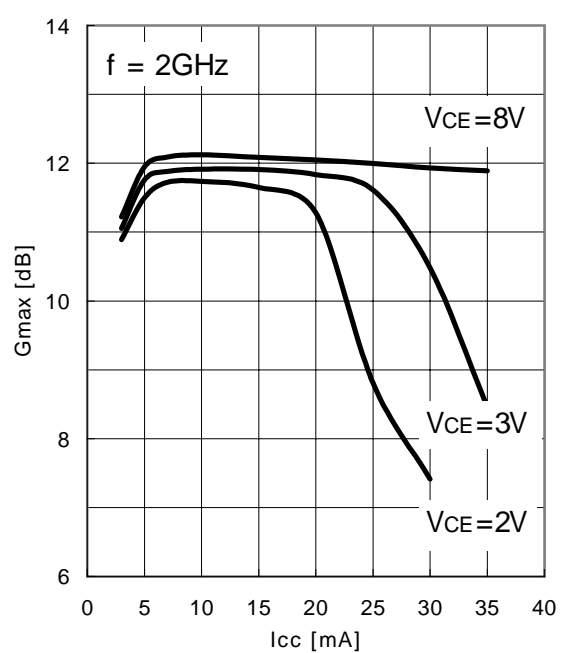
Power Gain : S<sub>21</sub> vs. Frequency



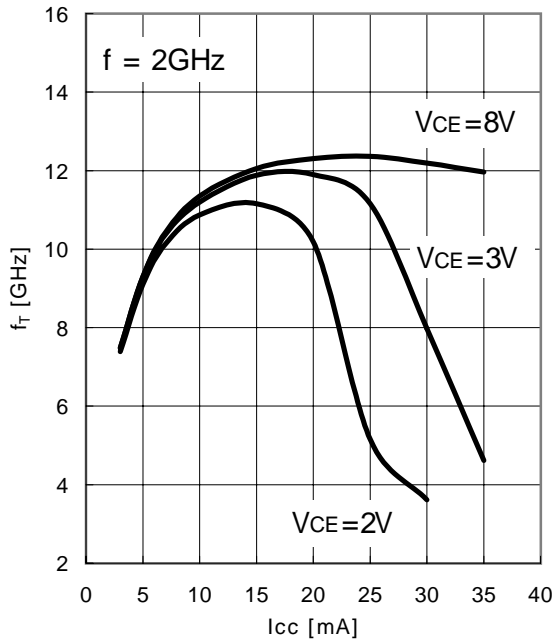
Power Gain : G<sub>max</sub> vs. I<sub>cc</sub>



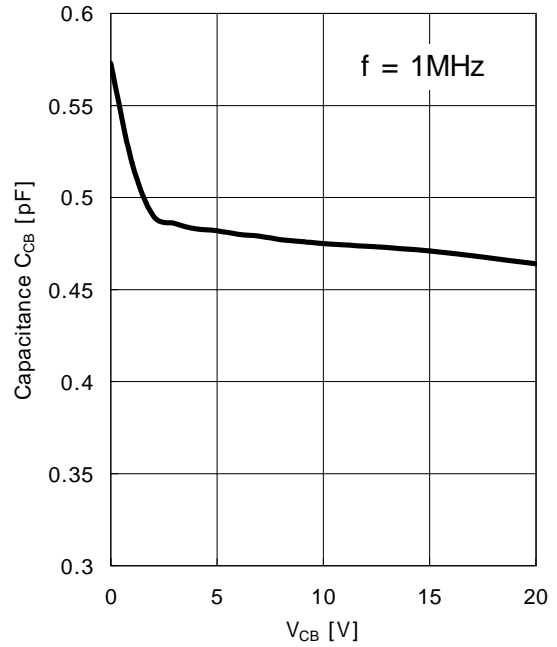
Power Gain : G<sub>max</sub> vs. I<sub>cc</sub>



Transition Frequency :  $f_T$  vs.  $I_{CC}$

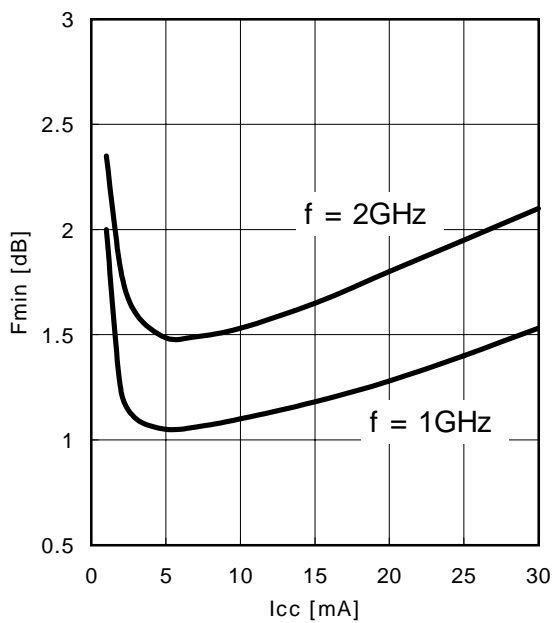


$C_{CB}$  vs.  $V_{CB}$



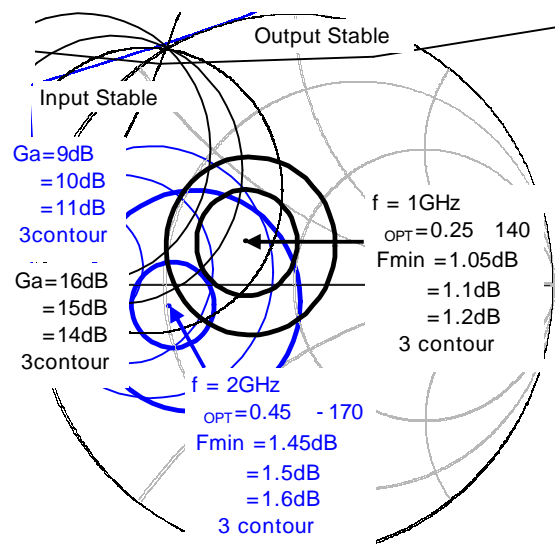
$F_{min}$  vs.  $I_{CC}$

$V_{CE} = 3V$ ,  $I_{CC} = \text{parameter}$ ,  $Z_s = Z_{opt}$



Noise Figure Contours & Constant Gain

$f = 1\text{GHz}$ ,  $2\text{GHz}$ ,  $V_{CE} = 3V$ ,  $I_{CC} = 5\text{mA}$



**Common Emitter S-Parameter Data**
**VCE = 3V, ICC = 3mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.675 / -77.928	7.224 / 121.189	0.091 / 47.113	0.725 / -52.487
600.0MHz	0.593 / -102.888	5.625 / 105.025	0.106 / 38.705	0.601 / -67.166
800.0MHz	0.527 / -121.045	4.531 / 92.591	0.112 / 34.866	0.526 / -78.667
1.000GHz	0.499 / -135.966	3.796 / 81.961	0.115 / 33.723	0.480 / -88.252
1.200GHz	0.490 / -145.812	3.263 / 74.133	0.117 / 34.998	0.443 / -96.716
1.400GHz	0.484 / -155.737	2.832 / 66.904	0.120 / 37.432	0.432 / -104.450
1.600GHz	0.483 / -165.227	2.520 / 59.758	0.125 / 40.551	0.430 / -112.219
1.800GHz	0.492 / -174.043	2.275 / 53.422	0.133 / 43.984	0.435 / -119.300
2.000GHz	0.495 / 179.281	2.056 / 47.139	0.143 / 47.141	0.446 / -126.298
2.200GHz	0.502 / 173.096	1.876 / 41.303	0.156 / 49.689	0.460 / -132.943
2.400GHz	0.521 / 165.510	1.720 / 35.999	0.171 / 51.512	0.478 / -138.744
2.600GHz	0.541 / 159.198	1.584 / 30.857	0.189 / 52.338	0.496 / -144.533
2.800GHz	0.555 / 153.817	1.482 / 25.855	0.208 / 52.470	0.520 / -149.938
3.000GHz	0.567 / 146.481	1.374 / 21.534	0.228 / 52.036	0.546 / -154.715

**VCE = 3V, ICC = 5mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.576 / -95.101	9.304 / 113.325	0.076 / 45.682	0.604 / -62.310
600.0MHz	0.512 / -120.852	6.881 / 98.712	0.087 / 41.735	0.482 / -76.431
800.0MHz	0.463 / -137.917	5.398 / 87.807	0.094 / 41.351	0.417 / -87.138
1.000GHz	0.466 / -151.460	4.469 / 78.512	0.101 / 42.809	0.381 / -96.062
1.200GHz	0.456 / -159.805	3.792 / 71.763	0.109 / 45.401	0.351 / -104.047
1.400GHz	0.456 / -168.429	3.273 / 65.498	0.119 / 48.043	0.346 / -111.331
1.600GHz	0.459 / -175.910	2.903 / 58.981	0.129 / 50.236	0.349 / -118.626
1.800GHz	0.477 / 176.634	2.612 / 53.312	0.142 / 52.094	0.357 / -125.159
2.000GHz	0.481 / 170.465	2.368 / 47.436	0.156 / 53.332	0.371 / -131.653
2.200GHz	0.491 / 164.428	2.150 / 42.156	0.172 / 53.999	0.388 / -137.710
2.400GHz	0.512 / 157.892	1.979 / 37.270	0.189 / 54.218	0.408 / -142.974
2.600GHz	0.525 / 152.991	1.824 / 32.362	0.207 / 53.790	0.427 / -148.120
2.800GHz	0.543 / 147.490	1.706 / 27.578	0.225 / 52.957	0.452 / -152.969
3.000GHz	0.556 / 141.077	1.587 / 23.355	0.244 / 51.747	0.479 / -157.178

**VCE = 3V, ICC = 7mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.509 / -107.640	10.557 / 108.084	0.067 / 46.846	0.520 / -69.248
600.0MHz	0.466 / -132.835	7.577 / 94.895	0.077 / 45.779	0.408 / -82.819
800.0MHz	0.445 / -148.263	5.873 / 85.078	0.087 / 47.126	0.353 / -93.137
1.000GHz	0.442 / -160.929	4.821 / 76.630	0.097 / 49.402	0.326 / -101.755
1.200GHz	0.442 / -167.207	4.083 / 70.432	0.108 / 51.857	0.301 / -109.582
1.400GHz	0.448 / -176.359	3.519 / 64.602	0.120 / 53.789	0.300 / -116.561
1.600GHz	0.453 / 176.941	3.120 / 58.536	0.134 / 55.064	0.306 / -123.548
1.800GHz	0.472 / 171.013	2.801 / 53.185	0.149 / 55.876	0.317 / -129.725
2.000GHz	0.474 / 165.071	2.538 / 47.654	0.165 / 56.093	0.332 / -135.871
2.200GHz	0.484 / 159.825	2.312 / 42.673	0.181 / 55.904	0.350 / -141.541
2.400GHz	0.505 / 154.166	2.127 / 37.928	0.198 / 55.354	0.370 / -146.379
2.600GHz	0.524 / 149.582	1.956 / 33.267	0.216 / 54.331	0.390 / -151.106
2.800GHz	0.536 / 144.625	1.837 / 28.721	0.235 / 53.032	0.415 / -155.541
3.000GHz	0.560 / 138.609	1.704 / 24.606	0.254 / 51.569	0.443 / -159.405

**VCE = 3V, ICC = 10mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.473 / -122.951	11.619 / 103.245	0.058 / 49.215	0.437 / -76.310
600.0MHz	0.441 / -144.960	8.148 / 91.514	0.070 / 50.988	0.341 / -89.433
800.0MHz	0.424 / -159.348	6.261 / 82.659	0.082 / 53.536	0.299 / -99.436
1.000GHz	0.425 / -170.069	5.119 / 74.856	0.095 / 55.676	0.279 / -107.723
1.200GHz	0.438 / -175.490	4.324 / 69.189	0.108 / 57.435	0.259 / -115.567
1.400GHz	0.442 / 178.043	3.723 / 63.814	0.124 / 58.408	0.263 / -122.201
1.600GHz	0.453 / 171.788	3.288 / 58.087	0.139 / 58.751	0.272 / -128.817
1.800GHz	0.470 / 165.995	2.949 / 53.113	0.155 / 58.710	0.284 / -134.637
2.000GHz	0.478 / 160.920	2.672 / 47.780	0.172 / 58.167	0.301 / -140.364
2.200GHz	0.481 / 156.217	2.439 / 42.999	0.189 / 57.300	0.319 / -145.652
2.400GHz	0.505 / 150.666	2.241 / 38.567	0.207 / 56.202	0.340 / -150.064
2.600GHz	0.527 / 145.724	2.068 / 33.875	0.225 / 54.810	0.361 / -154.345
2.800GHz	0.541 / 141.633	1.939 / 29.443	0.243 / 53.171	0.386 / -158.362
3.000GHz	0.547 / 135.594	1.803 / 25.473	0.261 / 51.370	0.414 / -161.891

V<sub>CE</sub> = 3V, I<sub>CC</sub> = 15mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.433 / -140.861	12.444 / 98.552	0.051 / 54.159	0.355 / -83.634
600.0MHz	0.430 / -156.745	8.576 / 88.232	0.065 / 57.483	0.280 / -96.296
800.0MHz	0.418 / -168.729	6.548 / 80.361	0.079 / 59.758	0.251 / -106.013
1.000GHz	0.437 / -177.789	5.331 / 73.066	0.094 / 61.227	0.240 / -113.951
1.200GHz	0.442 / 177.961	4.492 / 67.966	0.110 / 62.237	0.225 / -121.770
1.400GHz	0.450 / 171.864	3.858 / 62.955	0.127 / 62.319	0.232 / -127.938
1.600GHz	0.454 / 166.717	3.414 / 57.567	0.144 / 61.843	0.244 / -134.134
1.800GHz	0.478 / 161.029	3.066 / 52.742	0.162 / 61.119	0.258 / -139.508
2.000GHz	0.481 / 156.540	2.774 / 47.740	0.179 / 59.948	0.276 / -144.805
2.200GHz	0.487 / 152.172	2.528 / 43.196	0.197 / 58.549	0.296 / -149.667
2.400GHz	0.510 / 147.296	2.326 / 38.827	0.214 / 57.050	0.317 / -153.686
2.600GHz	0.530 / 142.623	2.141 / 34.313	0.233 / 55.298	0.338 / -157.515
2.800GHz	0.543 / 139.134	2.008 / 29.964	0.251 / 53.360	0.364 / -161.186
3.000GHz	0.551 / 133.338	1.878 / 26.127	0.269 / 51.413	0.391 / -164.351

V<sub>CE</sub> = 3V, I<sub>CC</sub> = 20mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.432 / -149.273	12.667 / 95.630	0.047 / 58.082	0.308 / -87.495
600.0MHz	0.438 / -164.049	8.660 / 86.208	0.062 / 61.495	0.246 / -99.561
800.0MHz	0.423 / -175.237	6.594 / 78.815	0.078 / 63.612	0.224 / -108.887
1.000GHz	0.447 / 176.905	5.356 / 71.852	0.094 / 64.476	0.219 / -116.460
1.200GHz	0.450 / 173.562	4.512 / 66.931	0.111 / 64.829	0.207 / -124.204
1.400GHz	0.458 / 169.008	3.876 / 62.017	0.129 / 64.537	0.217 / -130.074
1.600GHz	0.468 / 163.593	3.427 / 56.835	0.146 / 63.694	0.231 / -135.984
1.800GHz	0.488 / 158.681	3.070 / 52.165	0.164 / 62.562	0.247 / -141.125
2.000GHz	0.492 / 154.345	2.779 / 47.074	0.182 / 61.130	0.266 / -146.254
2.200GHz	0.501 / 150.412	2.533 / 42.542	0.201 / 59.476	0.286 / -150.912
2.400GHz	0.522 / 145.271	2.330 / 38.330	0.219 / 57.749	0.309 / -154.810
2.600GHz	0.538 / 141.247	2.155 / 34.056	0.237 / 55.818	0.330 / -158.539
2.800GHz	0.546 / 137.213	2.015 / 29.560	0.255 / 53.708	0.356 / -162.020
3.000GHz	0.562 / 131.886	1.884 / 25.714	0.273 / 51.665	0.384 / -165.113

V<sub>CE</sub> = 3V, I<sub>CC</sub> = 25mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.452 / -158.204	12.265 / 93.147	0.045 / 60.651	0.270 / -86.760
600.0MHz	0.456 / -170.490	8.336 / 84.262	0.060 / 64.380	0.221 / -97.497
800.0MHz	0.451 / -179.810	6.334 / 77.055	0.076 / 66.277	0.206 / -106.100
1.000GHz	0.470 / 173.026	5.137 / 70.178	0.093 / 66.831	0.205 / -113.337
1.200GHz	0.479 / 170.516	4.335 / 65.364	0.111 / 67.069	0.197 / -120.827
1.400GHz	0.487 / 165.554	3.717 / 60.382	0.129 / 66.546	0.210 / -126.580
1.600GHz	0.496 / 160.985	3.283 / 55.089	0.146 / 65.546	0.227 / -132.678
1.800GHz	0.517 / 156.775	2.945 / 50.379	0.165 / 64.239	0.245 / -138.036
2.000GHz	0.520 / 152.164	2.662 / 45.320	0.184 / 62.664	0.266 / -143.377
2.200GHz	0.529 / 148.319	2.421 / 40.717	0.203 / 60.919	0.288 / -148.297
2.400GHz	0.550 / 143.292	2.226 / 36.489	0.221 / 59.045	0.312 / -152.400
2.600GHz	0.570 / 139.070	2.058 / 32.077	0.240 / 57.042	0.336 / -156.417
2.800GHz	0.584 / 135.712	1.918 / 27.662	0.259 / 54.797	0.363 / -160.191
3.000GHz	0.591 / 129.775	1.796 / 23.606	0.278 / 52.600	0.392 / -163.534

V<sub>CE</sub> = 3V, I<sub>CC</sub> = 30mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.532 / -169.155	9.742 / 88.946	0.040 / 62.112	0.238 / -70.025
600.0MHz	0.544 / -179.080	6.588 / 80.277	0.055 / 67.006	0.211 / -77.269
800.0MHz	0.544 / 173.262	4.980 / 72.913	0.071 / 69.463	0.210 / -85.101
1.000GHz	0.561 / 167.797	4.050 / 65.829	0.088 / 70.787	0.219 / -93.329
1.200GHz	0.572 / 165.001	3.402 / 60.689	0.106 / 71.212	0.221 / -101.119
1.400GHz	0.580 / 160.413	2.915 / 55.386	0.125 / 70.905	0.241 / -109.044
1.600GHz	0.586 / 155.973	2.570 / 49.612	0.145 / 70.001	0.263 / -117.040
1.800GHz	0.606 / 151.735	2.303 / 44.565	0.165 / 68.670	0.286 / -124.241
2.000GHz	0.612 / 147.008	2.073 / 39.398	0.186 / 66.919	0.313 / -131.325
2.200GHz	0.621 / 143.052	1.883 / 34.545	0.207 / 64.931	0.341 / -137.931
2.400GHz	0.643 / 138.943	1.721 / 30.015	0.227 / 62.743	0.369 / -143.611
2.600GHz	0.655 / 134.865	1.578 / 25.565	0.249 / 60.346	0.396 / -149.119
2.800GHz	0.666 / 130.357	1.477 / 21.281	0.270 / 57.735	0.427 / -154.244
3.000GHz	0.672 / 125.439	1.365 / 17.457	0.290 / 55.089	0.459 / -158.788

VCE = 6V, ICC = 3mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.687 / -75.521	7.151 / 122.377	0.091 / 47.770	0.738 / -51.376
600.0MHz	0.596 / -100.222	5.595 / 106.070	0.106 / 39.117	0.614 / -66.098
800.0MHz	0.527 / -118.139	4.523 / 93.478	0.112 / 34.856	0.538 / -77.657
1.000GHz	0.499 / -133.497	3.813 / 82.792	0.116 / 33.532	0.490 / -87.343
1.200GHz	0.491 / -144.097	3.264 / 74.845	0.117 / 34.491	0.452 / -95.807
1.400GHz	0.483 / -154.121	2.839 / 67.668	0.120 / 36.902	0.440 / -103.615
1.600GHz	0.481 / -163.273	2.529 / 60.435	0.125 / 40.043	0.437 / -111.384
1.800GHz	0.488 / -172.050	2.281 / 53.980	0.132 / 43.524	0.441 / -118.504
2.000GHz	0.493 / -179.118	2.070 / 47.656	0.141 / 46.780	0.451 / -125.549
2.200GHz	0.500 / 174.229	1.886 / 41.880	0.154 / 49.513	0.464 / -132.242
2.400GHz	0.519 / 166.812	1.732 / 36.556	0.169 / 51.429	0.482 / -138.100
2.600GHz	0.540 / 160.720	1.591 / 31.376	0.186 / 52.471	0.499 / -143.914
2.800GHz	0.553 / 154.611	1.484 / 26.481	0.206 / 52.768	0.523 / -149.356
3.000GHz	0.564 / 148.238	1.375 / 22.099	0.225 / 52.377	0.549 / -154.165

VCE = 6V, ICC = 5mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.583 / -93.153	9.321 / 114.281	0.077 / 46.253	0.617 / -61.232
600.0MHz	0.513 / -118.201	6.912 / 99.620	0.088 / 41.830	0.492 / -75.397
800.0MHz	0.471 / -135.960	5.442 / 88.547	0.095 / 41.228	0.426 / -86.156
1.000GHz	0.457 / -150.136	4.503 / 79.227	0.101 / 42.540	0.388 / -95.127
1.200GHz	0.457 / -157.584	3.831 / 72.362	0.109 / 45.136	0.357 / -103.084
1.400GHz	0.451 / -167.170	3.315 / 66.115	0.118 / 47.733	0.351 / -110.345
1.600GHz	0.457 / -174.925	2.933 / 59.558	0.128 / 49.974	0.353 / -117.649
1.800GHz	0.469 / 177.759	2.639 / 53.924	0.141 / 51.923	0.361 / -124.241
2.000GHz	0.473 / 171.898	2.397 / 47.946	0.155 / 53.201	0.373 / -130.757
2.200GHz	0.483 / 166.392	2.181 / 42.618	0.170 / 54.008	0.389 / -136.862
2.400GHz	0.508 / 159.407	2.002 / 37.763	0.187 / 54.282	0.409 / -142.133
2.600GHz	0.525 / 153.941	1.842 / 32.930	0.205 / 53.961	0.428 / -147.349
2.800GHz	0.536 / 149.119	1.722 / 28.041	0.223 / 53.175	0.453 / -152.235
3.000GHz	0.547 / 142.593	1.606 / 23.828	0.242 / 51.995	0.480 / -156.525

VCE = 6V, ICC = 7mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.524 / -105.932	10.568 / 109.188	0.067 / 47.013	0.534 / -67.821
600.0MHz	0.465 / -129.601	7.626 / 95.824	0.078 / 45.539	0.419 / -81.424
800.0MHz	0.439 / -146.841	5.924 / 85.786	0.087 / 46.958	0.362 / -91.792
1.000GHz	0.439 / -159.987	4.871 / 77.290	0.097 / 49.096	0.333 / -100.397
1.200GHz	0.442 / -166.320	4.127 / 70.934	0.107 / 51.393	0.306 / -108.183
1.400GHz	0.444 / -174.175	3.558 / 65.125	0.120 / 53.472	0.305 / -115.224
1.600GHz	0.450 / 178.450	3.153 / 59.124	0.133 / 54.870	0.310 / -122.209
1.800GHz	0.469 / 172.363	2.837 / 53.709	0.147 / 55.745	0.319 / -128.477
2.000GHz	0.463 / 166.719	2.569 / 48.104	0.163 / 56.126	0.334 / -134.668
2.200GHz	0.477 / 161.014	2.337 / 43.124	0.180 / 55.954	0.351 / -140.430
2.400GHz	0.502 / 155.500	2.148 / 38.500	0.197 / 55.463	0.371 / -145.340
2.600GHz	0.517 / 150.070	1.985 / 33.659	0.215 / 54.536	0.391 / -150.145
2.800GHz	0.530 / 145.649	1.852 / 29.002	0.233 / 53.264	0.416 / -154.598
3.000GHz	0.542 / 139.159	1.727 / 24.827	0.252 / 51.811	0.443 / -158.529

VCE = 6V, ICC = 10mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.481 / -120.238	11.627 / 104.554	0.059 / 49.272	0.457 / -74.198
600.0MHz	0.433 / -142.065	8.200 / 92.543	0.071 / 50.379	0.356 / -87.311
800.0MHz	0.425 / -155.854	6.314 / 83.479	0.082 / 52.770	0.309 / -97.336
1.000GHz	0.428 / -168.253	5.163 / 75.587	0.094 / 54.910	0.288 / -105.708
1.200GHz	0.426 / -173.877	4.364 / 69.865	0.108 / 56.810	0.266 / -113.424
1.400GHz	0.434 / 179.241	3.755 / 64.479	0.122 / 57.987	0.268 / -120.127
1.600GHz	0.448 / 173.517	3.327 / 58.639	0.137 / 58.446	0.276 / -126.885
1.800GHz	0.460 / 167.095	2.986 / 53.565	0.154 / 58.504	0.287 / -132.796
2.000GHz	0.467 / 161.712	2.704 / 48.274	0.170 / 58.076	0.303 / -138.641
2.200GHz	0.475 / 156.724	2.463 / 43.509	0.188 / 57.366	0.321 / -144.046
2.400GHz	0.500 / 151.922	2.264 / 38.942	0.205 / 56.318	0.342 / -148.563
2.600GHz	0.516 / 147.084	2.089 / 34.497	0.223 / 54.969	0.362 / -152.960
2.800GHz	0.528 / 142.050	1.955 / 29.921	0.241 / 53.423	0.387 / -157.069
3.000GHz	0.541 / 136.234	1.830 / 25.763	0.259 / 51.692	0.414 / -160.681



**V<sub>CE</sub> = 6V, I<sub>CC</sub> = 15mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.437 / -135.137	12.524 / 100.057	0.052 / 53.631	0.378 / -80.801
600.0MHz	0.419 / -153.197	8.669 / 89.409	0.065 / 56.366	0.296 / -93.374
800.0MHz	0.411 / -165.766	6.636 / 81.270	0.079 / 58.990	0.262 / -103.122
1.000GHz	0.423 / -175.975	5.409 / 74.015	0.094 / 60.541	0.249 / -111.146
1.200GHz	0.425 / -179.731	4.558 / 68.739	0.109 / 61.584	0.231 / -118.905
1.400GHz	0.439 / 174.249	3.923 / 63.666	0.126 / 61.929	0.237 / -125.249
1.600GHz	0.445 / 167.516	3.466 / 58.189	0.142 / 61.597	0.248 / -131.653
1.800GHz	0.463 / 162.923	3.111 / 53.453	0.160 / 60.875	0.261 / -137.221
2.000GHz	0.469 / 157.882	2.817 / 48.295	0.177 / 59.861	0.278 / -142.690
2.200GHz	0.476 / 153.616	2.567 / 43.678	0.195 / 58.534	0.297 / -147.651
2.400GHz	0.499 / 148.776	2.360 / 39.361	0.212 / 57.081	0.317 / -151.850
2.600GHz	0.517 / 143.862	2.181 / 34.871	0.230 / 55.376	0.338 / -155.892
2.800GHz	0.527 / 140.657	2.038 / 30.407	0.248 / 53.530	0.363 / -159.620
3.000GHz	0.540 / 134.293	1.908 / 26.695	0.266 / 51.629	0.391 / -162.928

**V<sub>CE</sub> = 6V, I<sub>CC</sub> = 20mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.423 / -143.472	12.916 / 97.512	0.048 / 57.255	0.335 / -84.302
600.0MHz	0.411 / -160.985	8.870 / 87.681	0.063 / 60.618	0.265 / -96.650
800.0MHz	0.413 / -171.973	6.767 / 79.987	0.078 / 62.726	0.237 / -106.055
1.000GHz	0.428 / 179.369	5.508 / 73.029	0.094 / 63.672	0.228 / -113.827
1.200GHz	0.434 / 175.659	4.643 / 67.986	0.111 / 64.225	0.214 / -121.597
1.400GHz	0.442 / 171.072	3.986 / 63.132	0.128 / 63.954	0.222 / -127.684
1.600GHz	0.451 / 165.206	3.527 / 57.813	0.145 / 63.209	0.234 / -133.852
1.800GHz	0.468 / 160.427	3.160 / 53.134	0.163 / 62.158	0.248 / -139.138
2.000GHz	0.473 / 156.062	2.864 / 48.172	0.180 / 60.828	0.266 / -144.453
2.200GHz	0.480 / 151.903	2.610 / 43.519	0.198 / 59.280	0.285 / -149.276
2.400GHz	0.504 / 146.914	2.398 / 39.316	0.216 / 57.641	0.307 / -153.269
2.600GHz	0.520 / 142.396	2.218 / 34.946	0.234 / 55.790	0.327 / -157.094
2.800GHz	0.533 / 138.238	2.078 / 30.586	0.252 / 53.751	0.353 / -160.751
3.000GHz	0.545 / 133.130	1.940 / 26.789	0.270 / 51.711	0.380 / -163.883

**V<sub>CE</sub> = 6V, I<sub>CC</sub> = 25mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.417 / -150.823	13.053 / 95.870	0.046 / 60.076	0.307 / -86.016
600.0MHz	0.418 / -164.874	8.922 / 86.542	0.061 / 63.215	0.245 / -97.821
800.0MHz	0.415 / -175.584	6.796 / 79.120	0.077 / 65.103	0.222 / -106.925
1.000GHz	0.432 / 176.968	5.530 / 72.277	0.094 / 65.567	0.216 / -114.586
1.200GHz	0.437 / 173.567	4.657 / 67.409	0.111 / 65.757	0.203 / -122.210
1.400GHz	0.442 / 168.458	3.999 / 62.614	0.129 / 65.333	0.213 / -128.110
1.600GHz	0.456 / 163.595	3.536 / 57.429	0.146 / 64.349	0.226 / -134.215
1.800GHz	0.471 / 159.034	3.169 / 52.761	0.164 / 63.115	0.241 / -139.444
2.000GHz	0.481 / 154.880	2.866 / 47.762	0.182 / 61.630	0.260 / -144.688
2.200GHz	0.490 / 150.377	2.615 / 43.263	0.200 / 59.941	0.280 / -149.454
2.400GHz	0.508 / 145.723	2.408 / 38.938	0.218 / 58.155	0.301 / -153.410
2.600GHz	0.526 / 141.415	2.221 / 34.707	0.237 / 56.183	0.323 / -157.217
2.800GHz	0.539 / 137.596	2.083 / 30.337	0.255 / 54.118	0.348 / -160.801
3.000GHz	0.552 / 132.176	1.939 / 26.549	0.273 / 52.023	0.376 / -163.954

**V<sub>CE</sub> = 6V, I<sub>CC</sub> = 30mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.420 / -155.010	12.987 / 94.535	0.045 / 62.150	0.287 / -85.962
600.0MHz	0.421 / -168.805	8.862 / 85.516	0.061 / 65.327	0.231 / -97.065
800.0MHz	0.427 / -178.836	6.730 / 78.265	0.077 / 66.904	0.212 / -105.857
1.000GHz	0.441 / 174.279	5.476 / 71.556	0.094 / 67.177	0.208 / -113.247
1.200GHz	0.444 / 171.930	4.612 / 66.749	0.111 / 67.147	0.197 / -120.729
1.400GHz	0.458 / 167.300	3.954 / 61.921	0.129 / 66.581	0.208 / -126.610
1.600GHz	0.463 / 162.230	3.496 / 56.667	0.147 / 65.420	0.222 / -132.711
1.800GHz	0.482 / 157.842	3.140 / 51.996	0.165 / 64.028	0.238 / -138.069
2.000GHz	0.488 / 153.617	2.841 / 47.018	0.183 / 62.432	0.257 / -143.361
2.200GHz	0.500 / 149.442	2.590 / 42.516	0.202 / 60.690	0.278 / -148.236
2.400GHz	0.520 / 144.655	2.382 / 38.263	0.220 / 58.807	0.301 / -152.310
2.600GHz	0.541 / 140.038	2.198 / 33.849	0.239 / 56.772	0.323 / -156.189
2.800GHz	0.556 / 136.845	2.057 / 29.466	0.257 / 54.645	0.349 / -159.869
3.000GHz	0.560 / 131.042	1.924 / 25.533	0.275 / 52.399	0.377 / -163.090

V<sub>CE</sub> = 6V, I<sub>CC</sub> = 35mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.424 / -160.151	12.599 / 93.286	0.043 / 63.919	0.271 / -82.804
600.0MHz	0.442 / -172.503	8.562 / 84.420	0.059 / 66.913	0.221 / -92.559
800.0MHz	0.441 / 179.104	6.501 / 77.197	0.075 / 68.373	0.205 / -100.704
1.000GHz	0.460 / 173.212	5.281 / 70.353	0.093 / 68.752	0.203 / -107.897
1.200GHz	0.459 / 169.979	4.450 / 65.505	0.110 / 68.657	0.195 / -115.067
1.400GHz	0.474 / 165.243	3.819 / 60.647	0.128 / 68.014	0.208 / -121.304
1.600GHz	0.486 / 160.632	3.379 / 55.254	0.146 / 66.788	0.224 / -127.753
1.800GHz	0.505 / 156.571	3.029 / 50.544	0.165 / 65.423	0.241 / -133.469
2.000GHz	0.510 / 151.995	2.740 / 45.547	0.184 / 63.740	0.262 / -139.199
2.200GHz	0.517 / 148.123	2.489 / 40.963	0.203 / 61.897	0.284 / -144.429
2.400GHz	0.541 / 143.511	2.292 / 36.653	0.221 / 59.985	0.309 / -148.895
2.600GHz	0.563 / 139.360	2.109 / 32.236	0.240 / 57.913	0.332 / -153.187
2.800GHz	0.568 / 135.365	1.978 / 27.728	0.259 / 55.600	0.359 / -157.221
3.000GHz	0.583 / 130.535	1.837 / 23.953	0.278 / 53.304	0.389 / -160.826

V<sub>CE</sub> = 6V, I<sub>CC</sub> = 40mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.474 / -166.606	11.298 / 91.137	0.041 / 65.150	0.261 / -71.666
600.0MHz	0.486 / -176.376	7.656 / 82.392	0.056 / 68.630	0.222 / -78.849
800.0MHz	0.492 / 175.256	5.800 / 75.099	0.072 / 70.531	0.214 / -86.348
1.000GHz	0.506 / 169.106	4.711 / 68.213	0.089 / 71.231	0.218 / -94.040
1.200GHz	0.512 / 166.544	3.966 / 63.197	0.107 / 71.395	0.215 / -101.365
1.400GHz	0.522 / 163.047	3.398 / 58.088	0.126 / 70.782	0.231 / -108.894
1.600GHz	0.537 / 158.121	3.003 / 52.453	0.144 / 69.657	0.250 / -116.625
1.800GHz	0.553 / 154.033	2.690 / 47.458	0.164 / 68.236	0.270 / -123.526
2.000GHz	0.560 / 149.642	2.428 / 42.323	0.184 / 66.536	0.294 / -130.464
2.200GHz	0.568 / 145.610	2.206 / 37.662	0.204 / 64.540	0.319 / -136.870
2.400GHz	0.590 / 141.191	2.027 / 33.077	0.224 / 62.419	0.345 / -142.353
2.600GHz	0.610 / 137.255	1.865 / 28.630	0.245 / 60.089	0.371 / -147.703
2.800GHz	0.615 / 133.405	1.743 / 24.096	0.265 / 57.548	0.400 / -152.628
3.000GHz	0.632 / 127.401	1.615 / 20.357	0.285 / 55.110	0.431 / -157.048

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 3mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.688 / -73.773	7.134 / 122.911	0.092 / 47.972	0.743 / -51.150
600.0MHz	0.602 / -98.237	5.615 / 106.683	0.107 / 39.236	0.619 / -66.019
800.0MHz	0.536 / -116.699	4.551 / 93.932	0.114 / 34.557	0.540 / -77.709
1.000GHz	0.506 / -132.284	3.828 / 83.206	0.117 / 33.026	0.491 / -87.432
1.200GHz	0.495 / -142.657	3.291 / 75.284	0.118 / 33.776	0.452 / -95.819
1.400GHz	0.482 / -152.355	2.863 / 67.898	0.120 / 35.977	0.439 / -103.562
1.600GHz	0.483 / -161.716	2.556 / 60.513	0.124 / 39.078	0.434 / -111.264
1.800GHz	0.489 / -170.347	2.304 / 54.112	0.131 / 42.685	0.438 / -118.267
2.000GHz	0.494 / -177.689	2.088 / 47.710	0.140 / 46.092	0.448 / -125.226
2.200GHz	0.507 / 176.025	1.905 / 41.891	0.152 / 49.063	0.461 / -131.836
2.400GHz	0.523 / 167.762	1.750 / 36.638	0.166 / 51.339	0.478 / -137.615
2.600GHz	0.540 / 161.790	1.605 / 31.233	0.183 / 52.536	0.496 / -143.395
2.800GHz	0.556 / 155.781	1.501 / 26.158	0.203 / 52.986	0.520 / -148.806
3.000GHz	0.564 / 149.083	1.388 / 21.624	0.222 / 52.747	0.546 / -153.542

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 5mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.587 / -91.812	9.294 / 114.889	0.077 / 46.341	0.624 / -60.807
600.0MHz	0.518 / -116.832	6.916 / 100.076	0.088 / 41.737	0.498 / -75.115
800.0MHz	0.473 / -133.930	5.452 / 88.968	0.095 / 40.839	0.429 / -85.956
1.000GHz	0.459 / -148.169	4.523 / 79.603	0.102 / 41.932	0.391 / -94.941
1.200GHz	0.456 / -157.087	3.841 / 72.679	0.109 / 44.353	0.358 / -102.863
1.400GHz	0.454 / -164.942	3.327 / 66.198	0.118 / 46.934	0.352 / -110.114
1.600GHz	0.458 / -173.456	2.950 / 59.767	0.128 / 49.324	0.353 / -117.368
1.800GHz	0.470 / 178.885	2.649 / 53.992	0.140 / 51.339	0.360 / -123.887
2.000GHz	0.478 / 172.859	2.403 / 48.042	0.153 / 52.730	0.373 / -130.337
2.200GHz	0.485 / 166.861	2.191 / 42.739	0.169 / 53.737	0.388 / -136.437
2.400GHz	0.499 / 160.289	2.017 / 37.818	0.185 / 54.126	0.407 / -141.677
2.600GHz	0.525 / 154.957	1.855 / 32.912	0.202 / 53.899	0.426 / -146.877
2.800GHz	0.533 / 149.970	1.738 / 28.007	0.221 / 53.176	0.451 / -151.714
3.000GHz	0.552 / 143.524	1.612 / 23.809	0.240 / 52.200	0.478 / -155.987

**VCE = 8V, ICC = 7mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.534 / -104.428	10.518 / 109.877	0.068 / 46.963	0.544 / -67.074
600.0MHz	0.469 / -128.776	7.609 / 96.259	0.079 / 45.181	0.427 / -80.833
800.0MHz	0.444 / -144.733	5.921 / 86.277	0.088 / 46.320	0.368 / -91.228
1.000GHz	0.435 / -158.247	4.874 / 77.618	0.097 / 48.214	0.338 / -99.889
1.200GHz	0.441 / -164.915	4.127 / 71.291	0.107 / 50.706	0.310 / -107.654
1.400GHz	0.440 / -172.342	3.562 / 65.414	0.119 / 52.657	0.307 / -114.658
1.600GHz	0.442 / -179.976	3.159 / 59.348	0.132 / 54.228	0.311 / -121.646
1.800GHz	0.463 / 173.239	2.836 / 53.888	0.146 / 55.241	0.320 / -127.906
2.000GHz	0.467 / 167.638	2.574 / 48.327	0.162 / 55.679	0.334 / -134.095
2.200GHz	0.482 / 162.775	2.340 / 43.286	0.178 / 55.701	0.351 / -139.835
2.400GHz	0.498 / 156.193	2.157 / 38.431	0.195 / 55.306	0.371 / -144.745
2.600GHz	0.519 / 150.860	1.982 / 33.695	0.213 / 54.510	0.391 / -149.514
2.800GHz	0.532 / 146.612	1.860 / 29.030	0.231 / 53.334	0.416 / -154.010
3.000GHz	0.537 / 139.421	1.734 / 24.842	0.249 / 51.903	0.443 / -157.958

**VCE = 8V, ICC = 10mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.478 / -116.995	11.588 / 105.114	0.059 / 49.107	0.464 / -73.399
600.0MHz	0.437 / -140.253	8.199 / 92.970	0.071 / 49.952	0.362 / -86.585
800.0MHz	0.418 / -155.324	6.310 / 83.857	0.082 / 52.270	0.314 / -96.591
1.000GHz	0.426 / -166.447	5.167 / 75.824	0.094 / 54.378	0.291 / -104.923
1.200GHz	0.432 / -172.322	4.368 / 70.042	0.108 / 56.328	0.268 / -112.648
1.400GHz	0.433 / -178.999	3.760 / 64.563	0.122 / 57.539	0.270 / -119.366
1.600GHz	0.443 / 173.520	3.337 / 58.845	0.137 / 58.133	0.277 / -126.117
1.800GHz	0.457 / 167.618	2.993 / 53.604	0.153 / 58.296	0.288 / -132.080
2.000GHz	0.467 / 162.930	2.709 / 48.339	0.169 / 57.881	0.303 / -137.951
2.200GHz	0.474 / 157.311	2.473 / 43.528	0.186 / 57.221	0.321 / -143.343
2.400GHz	0.493 / 152.627	2.272 / 39.012	0.203 / 56.243	0.341 / -147.896
2.600GHz	0.512 / 147.866	2.093 / 34.440	0.221 / 54.931	0.362 / -152.342
2.800GHz	0.527 / 143.032	1.960 / 29.848	0.240 / 53.417	0.387 / -156.467
3.000GHz	0.538 / 137.148	1.836 / 25.677	0.258 / 51.736	0.414 / -160.079

**VCE = 8V, ICC = 15mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.429 / -131.657	12.434 / 100.794	0.053 / 53.246	0.391 / -79.274
600.0MHz	0.419 / -152.369	8.637 / 89.955	0.066 / 55.967	0.305 / -91.829
800.0MHz	0.412 / -164.943	6.609 / 81.662	0.079 / 58.229	0.269 / -101.501
1.000GHz	0.423 / -174.692	5.395 / 74.179	0.094 / 59.872	0.253 / -109.563
1.200GHz	0.427 / -178.967	4.546 / 68.941	0.109 / 61.048	0.235 / -117.274
1.400GHz	0.434 / 174.997	3.916 / 63.881	0.125 / 61.548	0.240 / -123.687
1.600GHz	0.446 / 169.428	3.458 / 58.321	0.141 / 61.289	0.250 / -130.140
1.800GHz	0.463 / 163.364	3.108 / 53.486	0.158 / 60.706	0.263 / -135.837
2.000GHz	0.468 / 158.623	2.811 / 48.338	0.176 / 59.758	0.280 / -141.370
2.200GHz	0.474 / 154.339	2.566 / 43.684	0.193 / 58.497	0.298 / -146.443
2.400GHz	0.498 / 149.016	2.358 / 39.317	0.211 / 57.115	0.319 / -150.699
2.600GHz	0.518 / 144.980	2.174 / 34.750	0.229 / 55.471	0.340 / -154.798
2.800GHz	0.526 / 140.377	2.039 / 30.380	0.247 / 53.659	0.365 / -158.640
3.000GHz	0.537 / 134.430	1.904 / 26.416	0.265 / 51.743	0.392 / -161.986

**VCE = 8V, ICC = 20mA**

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.430 / -140.838	12.802 / 98.311	0.049 / 56.888	0.350 / -82.278
600.0MHz	0.404 / -158.434	8.827 / 88.218	0.063 / 59.680	0.274 / -94.439
800.0MHz	0.410 / -170.151	6.734 / 80.422	0.078 / 61.940	0.245 / -103.804
1.000GHz	0.424 / -178.810	5.483 / 73.213	0.093 / 63.087	0.234 / -111.669
1.200GHz	0.429 / 176.815	4.620 / 68.135	0.110 / 63.571	0.218 / -119.329
1.400GHz	0.439 / 171.907	3.970 / 63.206	0.127 / 63.652	0.226 / -125.528
1.600GHz	0.444 / 166.137	3.519 / 57.832	0.144 / 62.958	0.237 / -131.824
1.800GHz	0.464 / 161.061	3.150 / 53.110	0.161 / 62.019	0.251 / -137.304
2.000GHz	0.468 / 156.500	2.856 / 48.103	0.179 / 60.775	0.268 / -142.763
2.200GHz	0.481 / 151.956	2.601 / 43.519	0.197 / 59.290	0.287 / -147.693
2.400GHz	0.502 / 147.342	2.392 / 39.165	0.215 / 57.697	0.308 / -151.822
2.600GHz	0.520 / 143.207	2.209 / 34.815	0.233 / 55.898	0.329 / -155.796
2.800GHz	0.530 / 138.780	2.071 / 30.509	0.251 / 53.866	0.355 / -159.512
3.000GHz	0.541 / 133.556	1.939 / 26.436	0.269 / 51.889	0.382 / -162.753

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 25mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.419 / -147.536	12.937 / 96.763	0.047 / 58.979	0.323 / -83.636
600.0MHz	0.411 / -163.916	8.880 / 87.144	0.061 / 62.400	0.256 / -95.277
800.0MHz	0.409 / -173.793	6.764 / 79.508	0.077 / 64.331	0.230 / -104.393
1.000GHz	0.428 / 177.756	5.503 / 72.629	0.093 / 65.090	0.222 / -112.055
1.200GHz	0.439 / 174.523	4.639 / 67.575	0.110 / 65.419	0.208 / -119.569
1.400GHz	0.444 / 169.167	3.986 / 62.760	0.128 / 65.071	0.217 / -125.706
1.600GHz	0.455 / 164.672	3.523 / 57.439	0.145 / 64.141	0.230 / -132.003
1.800GHz	0.471 / 159.627	3.158 / 52.813	0.163 / 63.015	0.244 / -137.383
2.000GHz	0.474 / 155.090	2.865 / 47.832	0.181 / 61.586	0.262 / -142.758
2.200GHz	0.484 / 151.124	2.607 / 43.177	0.199 / 59.918	0.282 / -147.679
2.400GHz	0.506 / 145.942	2.395 / 38.923	0.217 / 58.217	0.304 / -151.809
2.600GHz	0.528 / 141.344	2.218 / 34.557	0.236 / 56.299	0.325 / -155.779
2.800GHz	0.536 / 137.998	2.077 / 30.160	0.253 / 54.182	0.351 / -159.458
3.000GHz	0.551 / 132.677	1.936 / 26.187	0.271 / 52.123	0.378 / -162.743

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 30mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.402 / -152.560	12.921 / 95.617	0.045 / 61.226	0.305 / -83.659
600.0MHz	0.416 / -168.222	8.826 / 86.260	0.060 / 64.295	0.243 / -94.677
800.0MHz	0.418 / -176.695	6.725 / 78.816	0.077 / 66.065	0.221 / -103.476
1.000GHz	0.437 / 176.157	5.467 / 71.955	0.093 / 66.691	0.215 / -110.955
1.200GHz	0.443 / 173.024	4.611 / 67.042	0.111 / 66.723	0.202 / -118.348
1.400GHz	0.451 / 167.752	3.959 / 62.123	0.128 / 66.196	0.212 / -124.431
1.600GHz	0.465 / 162.506	3.501 / 56.833	0.146 / 65.154	0.226 / -130.706
1.800GHz	0.480 / 157.880	3.138 / 52.116	0.164 / 63.873	0.241 / -136.173
2.000GHz	0.484 / 153.652	2.841 / 47.152	0.182 / 62.370	0.260 / -141.648
2.200GHz	0.490 / 150.417	2.586 / 42.579	0.201 / 60.567	0.280 / -146.641
2.400GHz	0.517 / 145.233	2.384 / 38.310	0.219 / 58.792	0.302 / -150.898
2.600GHz	0.537 / 141.122	2.195 / 34.034	0.237 / 56.798	0.324 / -154.896
2.800GHz	0.550 / 137.030	2.060 / 29.583	0.256 / 54.610	0.350 / -158.674
3.000GHz	0.559 / 131.846	1.918 / 25.582	0.274 / 52.482	0.378 / -162.023

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 35mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.428 / -156.142	12.727 / 94.571	0.044 / 63.274	0.291 / -82.009
600.0MHz	0.426 / -170.490	8.682 / 85.407	0.059 / 66.177	0.234 / -92.034
800.0MHz	0.431 / -179.497	6.600 / 78.015	0.076 / 67.436	0.214 / -100.323
1.000GHz	0.445 / 173.605	5.370 / 71.170	0.092 / 67.978	0.210 / -107.681
1.200GHz	0.452 / 171.461	4.520 / 66.222	0.110 / 67.879	0.200 / -114.798
1.400GHz	0.462 / 166.554	3.882 / 61.391	0.128 / 67.347	0.211 / -121.107
1.600GHz	0.471 / 161.904	3.433 / 55.940	0.146 / 66.266	0.226 / -127.592
1.800GHz	0.488 / 157.251	3.075 / 51.195	0.164 / 64.900	0.242 / -133.276
2.000GHz	0.500 / 153.013	2.784 / 46.192	0.183 / 63.279	0.262 / -138.999
2.200GHz	0.504 / 148.867	2.537 / 41.519	0.201 / 61.471	0.283 / -144.196
2.400GHz	0.533 / 144.502	2.331 / 37.245	0.220 / 59.591	0.306 / -148.659
2.600GHz	0.544 / 140.235	2.150 / 32.827	0.239 / 57.515	0.329 / -152.963
2.800GHz	0.561 / 136.082	2.014 / 28.507	0.257 / 55.309	0.356 / -156.962
3.000GHz	0.570 / 130.768	1.883 / 24.533	0.276 / 53.091	0.384 / -160.522

V<sub>CE</sub> = 8V, I<sub>CC</sub> = 40mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.437 / -162.187	12.072 / 93.346	0.042 / 64.231	0.280 / -75.878
600.0MHz	0.449 / -173.858	8.218 / 84.217	0.058 / 67.607	0.230 / -84.240
800.0MHz	0.453 / 177.921	6.243 / 76.775	0.074 / 69.145	0.215 / -91.974
1.000GHz	0.479 / 171.662	5.070 / 69.764	0.090 / 69.518	0.214 / -99.360
1.200GHz	0.485 / 168.804	4.277 / 64.852	0.108 / 69.759	0.207 / -106.359
1.400GHz	0.488 / 164.809	3.667 / 59.794	0.126 / 69.050	0.220 / -113.270
1.600GHz	0.504 / 160.079	3.239 / 54.339	0.145 / 68.017	0.237 / -120.404
1.800GHz	0.518 / 155.316	2.902 / 49.515	0.164 / 66.618	0.255 / -126.810
2.000GHz	0.525 / 151.298	2.627 / 44.357	0.183 / 64.991	0.277 / -133.249
2.200GHz	0.531 / 147.572	2.390 / 39.738	0.202 / 63.076	0.300 / -139.184
2.400GHz	0.555 / 142.989	2.191 / 35.335	0.222 / 61.134	0.325 / -144.245
2.600GHz	0.579 / 138.864	2.023 / 30.692	0.241 / 58.915	0.349 / -149.143
2.800GHz	0.585 / 134.854	1.893 / 26.359	0.261 / 56.559	0.377 / -153.795
3.000GHz	0.596 / 129.374	1.764 / 22.217	0.280 / 54.203	0.407 / -157.817