

NPN Planer RF TRANSISTOR

DESCRIPTION

The TARF1503E 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 SOT523 package

FEATURES

o Low Noise Figure

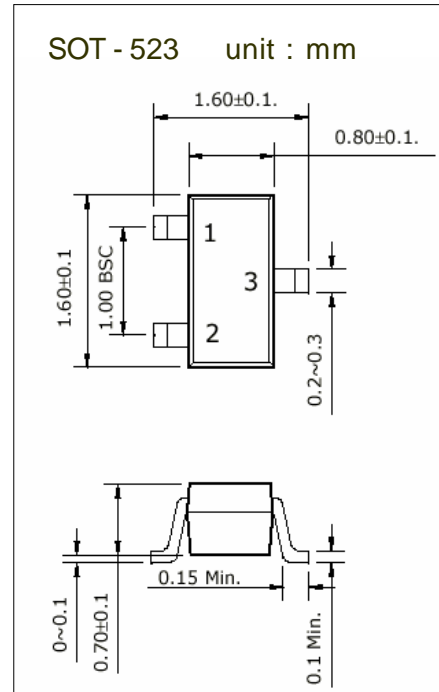
N.F = 1.1dB TYP. @ f=1GHz, $V_{CE}=8V$, $I_c=5mA$

o High Gain

MAG = 18dB TYP. @ f=1GHz, $V_{CE}=8V$, $I_c=15mA$

o High Transition Frequency

$f_T = 10GHz$ TYP. @ f=1GHz, $V_{CE}=8V$, $I_c=15mA$



PIN CONFIGURATION

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

MARKING : AA1

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)		65	mA
P_T	Total Power Dissipation	$T_s = 60$	150	mW
T_{STG}	Storage Temperature		-65 ~ 150	
T_J	Operating Junction Temperature		150	

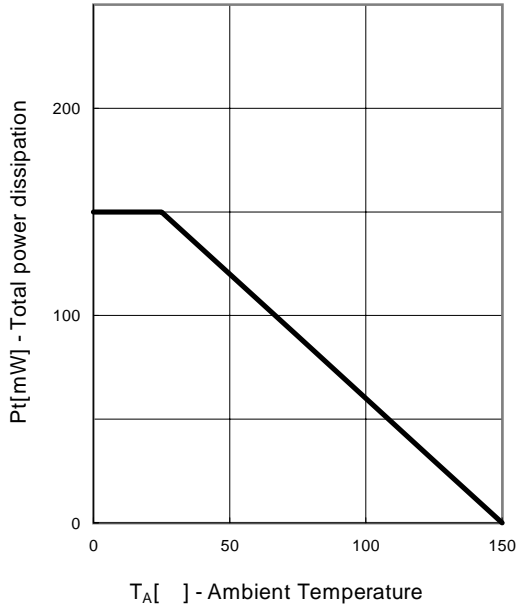
Electrical Characteristics ($T_A = 25$)

SYMBOL	PARAMETER	CONDITION	VALUE			Unit
			min	typ	max	
V _{CB0}	Collector-Base Voltage	I _{CE} = 100uA, I _E = 0	20	25		V
V _{CEO}	Collector-Emitter Voltage	I _{CE} = 100uA, I _B = 0	12	14		V
I _{CB0}	Collector-Cut-off current	V _{CB} = 10V, I _E = 0			300	n A
I _{EBO}	Emitter-Cut-off current	V _{EB} = 1V, I _C = 0			100	n A
h _{fe}	D.C current Gain	V _{CE} = 8V, I _C = 15mA	100	150		
f _T	Transition Frequency	V _{CE} = 8V, I _C = 15mA		10		GHz
C _{CB}	Collector-Base Capacitance	V _{CB} = 10V, f = 1MHz		0.55		pF

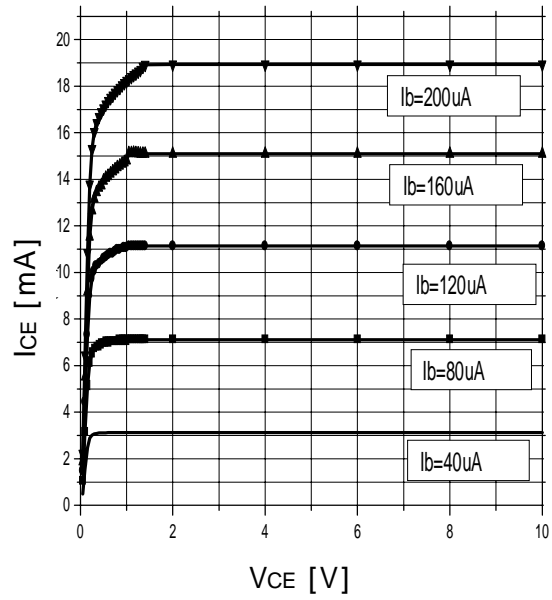
Performance Characteristics

SYMBOL	PARAMETER	CONDITION	VALUE			Unit
			min	typ	max	
[S ₂₁] ²	Insertion Power Gain	V _{CE} =8V, I _C =5mA, f=1GHz		12.5		dB
		V _{CE} =8V, I _C =15mA, f=1GHz		14.5		
MSG	Maximum Stable Gain	V _{CE} =8V, I _C =5mA, f=1GHz		16.5		dB
		V _{CE} =8V, I _C =15mA, f=1GHz		18		
NF _{min}	Minimum Noise Figure	V _{CE} =8V, I _C =5mA, f=1GHz		1.1		dB
r _n	Noise Resistance	V _{CE} =8V, I _C =5mA, f=1GHz		0.09		
G _A	Associated Gain	V _{CE} =8V, I _C =5mA, f=1GHz		14.5		dB
		V _{CE} =8V, I _C =15mA, f=1GHz		15.5		
OIP ₃	Output 3rd Intercept	V _{CE} =8V, I _C =15mA, f=1GHz		27		dBm

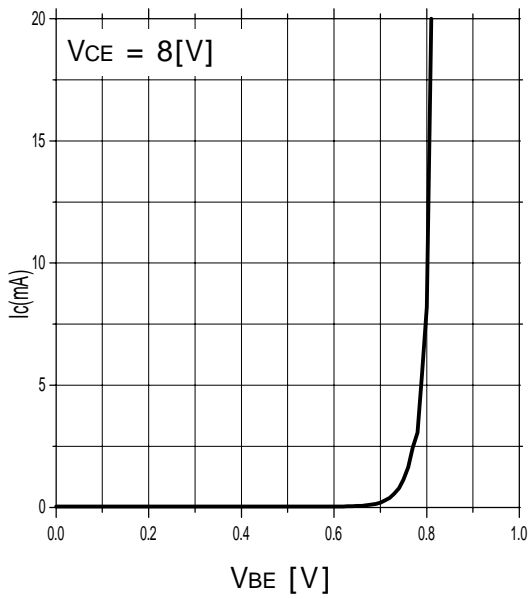
Total power dissipation $P_t = f(T_A)$
 ($T_A = 25$)



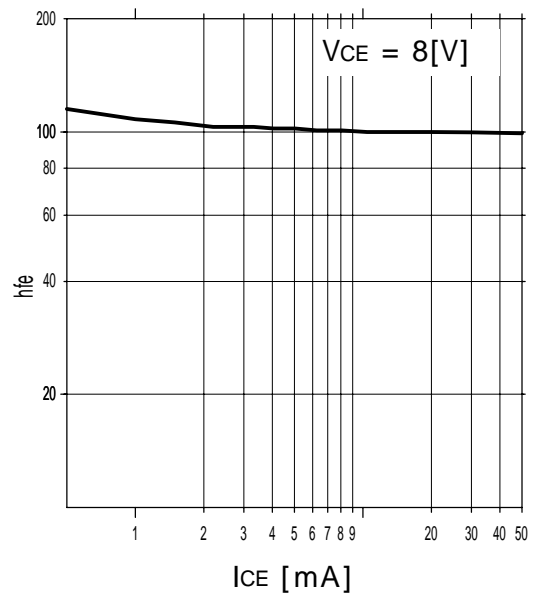
Icc vs. VCE



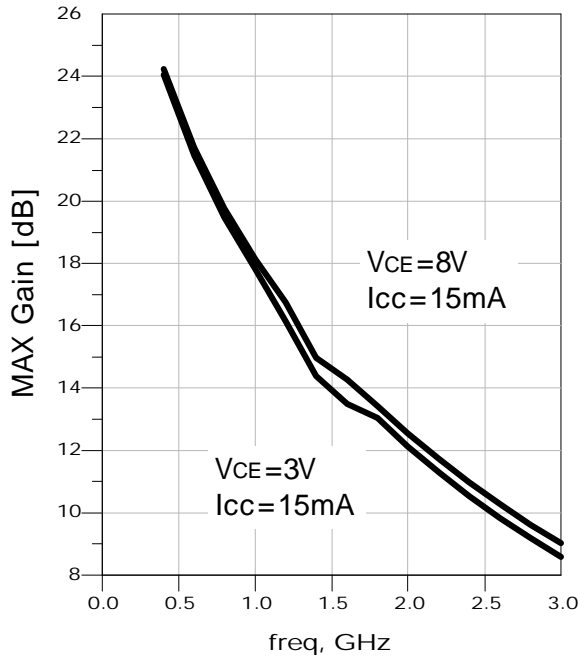
Icc vs. VBE



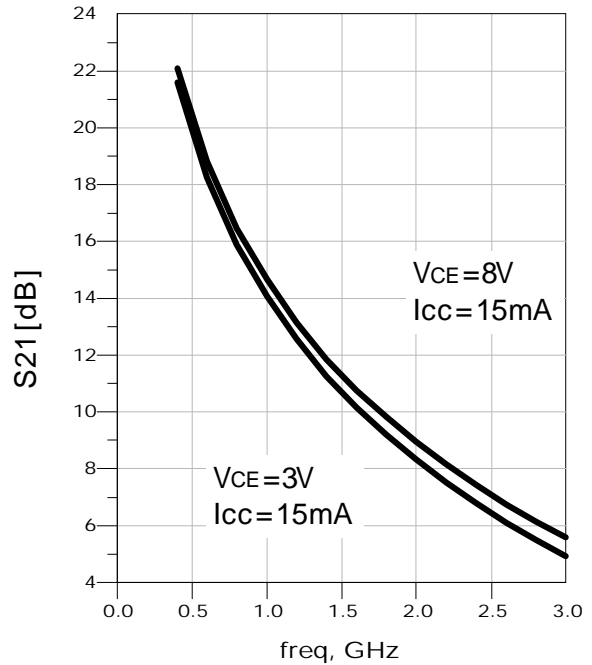
hfe vs. Icc



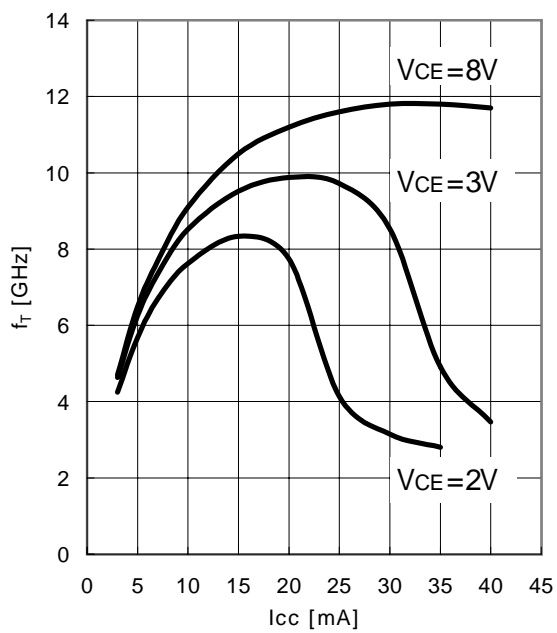
Power Gain : MSG vs. Frequency



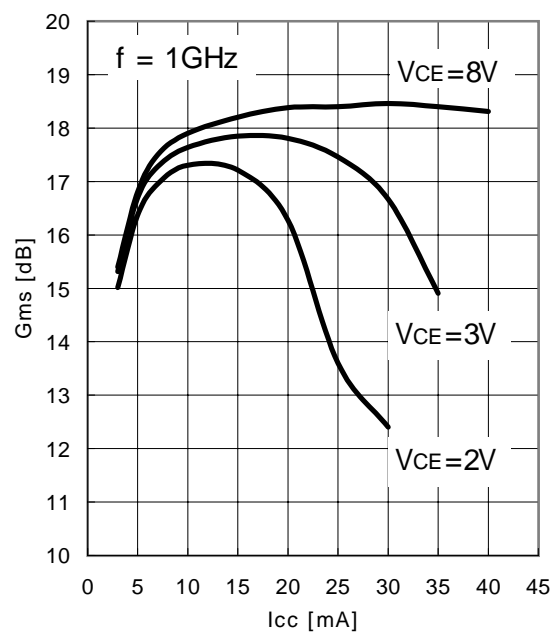
Power Gain : S₂₁ vs. Frequency



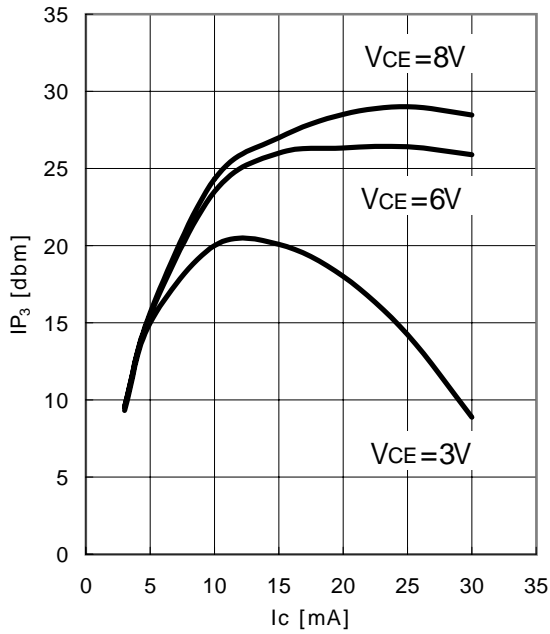
Transition Frequency : f_T vs. I_{CC}



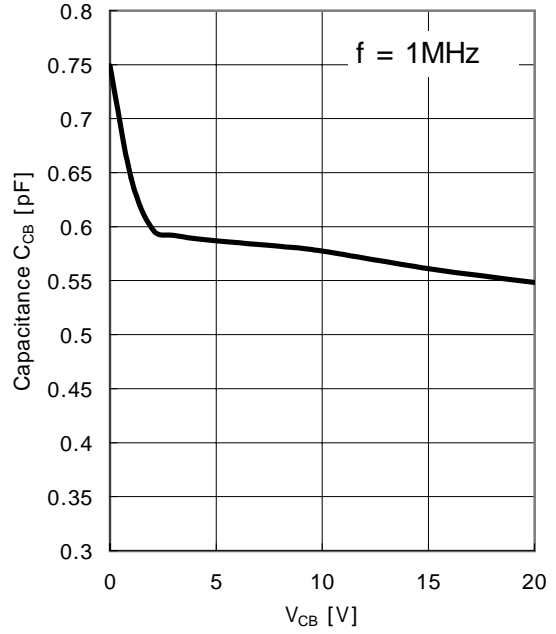
Power Gain : G_{ms} vs. I_{CC}



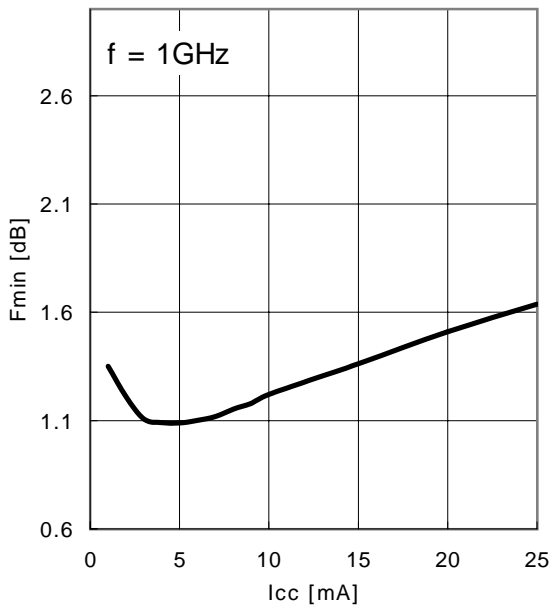
Intermodulation Intercept Point $IP_3=f(I_c)$
 ($Z_S = Z_L = 50 \Omega$)



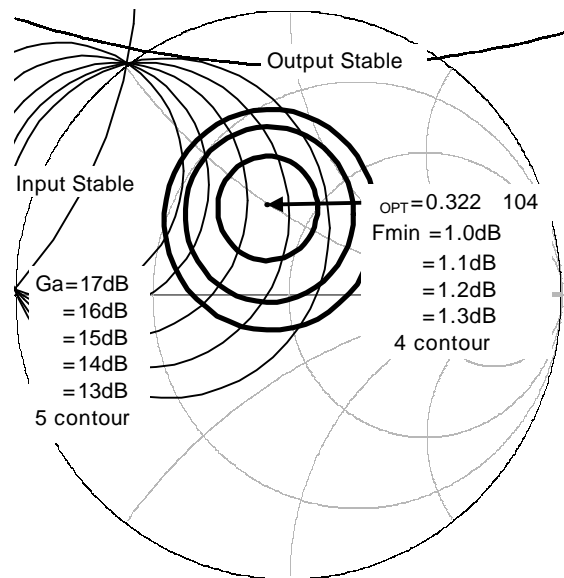
C_{CB} vs. V_{CB}



F_{min} vs. I_{cc}
 $V_{CE} = 8V$, $I_{cc} = \text{parameter}$, $Z_s = Z_{opt}$



Noise Figure Contours & Constant Gain
 $f = 1\text{GHz}$, $V_{CE} = 8V$, $I_{cc} = 5\text{mA}$



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

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.703 / -87.070	7.145 / 119.130	0.092 / 42.778	0.699 / -54.190
600.0MHz	0.642 / -111.422	5.447 / 103.408	0.103 / 34.074	0.582 / -67.143
800.0MHz	0.590 / -128.671	4.334 / 91.398	0.106 / 29.972	0.515 / -76.845
1.000GHz	0.580 / -142.850	3.607 / 81.514	0.106 / 28.943	0.478 / -84.271
1.200GHz	0.578 / -150.317	3.070 / 74.288	0.105 / 30.606	0.450 / -90.428
1.400GHz	0.577 / -159.132	2.662 / 67.345	0.104 / 33.891	0.442 / -96.164
1.600GHz	0.581 / -166.466	2.360 / 60.795	0.105 / 38.409	0.442 / -102.049
1.800GHz	0.584 / -173.573	2.121 / 54.822	0.109 / 43.890	0.449 / -107.522
2.000GHz	0.588 / -179.507	1.919 / 48.986	0.117 / 49.350	0.459 / -113.066
2.200GHz	0.603 / 174.965	1.744 / 43.520	0.127 / 54.073	0.471 / -118.604
2.400GHz	0.619 / 168.781	1.597 / 38.667	0.141 / 57.843	0.488 / -123.513
2.600GHz	0.634 / 163.254	1.471 / 34.107	0.158 / 60.167	0.503 / -128.983
2.800GHz	0.649 / 158.632	1.367 / 29.514	0.176 / 61.598	0.523 / -134.210
3.000GHz	0.666 / 152.765	1.264 / 25.609	0.197 / 62.163	0.545 / -138.970

VCE = 3V, ICC = 5mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.624 / -105.729	9.165 / 111.174	0.075 / 40.985	0.573 / -64.877
600.0MHz	0.569 / -128.881	6.642 / 97.423	0.083 / 37.028	0.461 / -77.158
800.0MHz	0.538 / -144.550	5.169 / 87.203	0.087 / 37.371	0.407 / -85.967
1.000GHz	0.538 / -157.121	4.250 / 81.556	0.091 / 39.499	0.380 / -92.677
1.200GHz	0.540 / -162.513	3.591 / 72.349	0.096 / 43.083	0.357 / -98.209
1.400GHz	0.543 / -169.838	3.098 / 66.500	0.102 / 47.014	0.355 / -103.355
1.600GHz	0.548 / -176.036	2.745 / 60.550	0.110 / 50.718	0.358 / -108.747
1.800GHz	0.562 / 177.857	2.457 / 55.146	0.121 / 54.120	0.367 / -113.606
2.000GHz	0.564 / 173.266	2.227 / 49.877	0.133 / 56.847	0.379 / -118.673
2.200GHz	0.566 / 167.990	2.023 / 44.885	0.147 / 58.860	0.392 / -123.701
2.400GHz	0.591 / 162.443	1.861 / 40.401	0.162 / 60.301	0.409 / -128.084
2.600GHz	0.601 / 157.795	1.711 / 35.784	0.179 / 60.744	0.426 / -132.963
2.800GHz	0.622 / 154.024	1.599 / 31.707	0.197 / 60.833	0.446 / -137.757
3.000GHz	0.629 / 148.586	1.488 / 27.735	0.215 / 60.417	0.469 / -142.019

VCE = 3V, ICC = 7mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.581 / -119.572	10.328 / 106.194	0.064 / 41.804	0.488 / -72.612
600.0MHz	0.539 / -141.752	7.299 / 93.863	0.072 / 41.466	0.389 / -84.456
800.0MHz	0.522 / -154.678	5.621 / 84.642	0.079 / 43.918	0.346 / -92.767
1.000GHz	0.526 / -165.255	4.586 / 76.886	0.086 / 47.020	0.327 / -98.991
1.200GHz	0.529 / -169.597	3.873 / 71.377	0.094 / 51.013	0.307 / -104.387
1.400GHz	0.530 / -175.843	3.331 / 65.870	0.104 / 54.065	0.308 / -109.087
1.600GHz	0.535 / 178.360	2.948 / 60.443	0.116 / 56.730	0.313 / -114.120
1.800GHz	0.546 / 172.879	2.643 / 55.451	0.128 / 58.612	0.323 / -118.708
2.000GHz	0.549 / 168.519	2.392 / 50.424	0.142 / 60.157	0.336 / -123.331
2.200GHz	0.561 / 163.798	2.174 / 45.754	0.157 / 60.981	0.351 / -127.999
2.400GHz	0.578 / 158.349	2.001 / 41.487	0.173 / 61.377	0.368 / -132.061
2.600GHz	0.595 / 154.424	1.845 / 37.266	0.191 / 61.136	0.385 / -136.575
2.800GHz	0.606 / 150.738	1.725 / 32.710	0.208 / 60.549	0.406 / -140.981
3.000GHz	0.618 / 145.717	1.602 / 29.133	0.226 / 59.708	0.428 / -144.913

VCE = 3V, ICC = 10mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.529 / -133.769	11.311 / 101.456	0.055 / 44.584	0.405 / -81.089
600.0MHz	0.521 / -152.296	7.820 / 90.655	0.064 / 47.309	0.326 / -92.490
800.0MHz	0.509 / -164.191	5.981 / 82.457	0.073 / 50.970	0.294 / -100.471
1.000GHz	0.516 / -173.121	4.863 / 75.323	0.084 / 54.455	0.282 / -106.249
1.200GHz	0.519 / -176.698	4.096 / 70.378	0.095 / 57.761	0.266 / -111.566
1.400GHz	0.530 / 178.187	3.516 / 65.423	0.108 / 59.838	0.270 / -115.850
1.600GHz	0.536 / 173.124	3.106 / 60.156	0.121 / 61.281	0.278 / -120.396
1.800GHz	0.545 / 167.968	2.790 / 55.547	0.136 / 62.138	0.289 / -124.554
2.000GHz	0.551 / 164.315	2.517 / 50.760	0.151 / 62.568	0.303 / -128.739
2.200GHz	0.558 / 159.546	2.298 / 46.338	0.167 / 62.624	0.318 / -133.085
2.400GHz	0.572 / 155.074	2.111 / 42.247	0.184 / 62.235	0.335 / -136.680
2.600GHz	0.590 / 151.368	1.945 / 37.927	0.201 / 61.426	0.353 / -140.806
2.800GHz	0.597 / 148.069	1.822 / 34.177	0.218 / 60.381	0.373 / -144.878
3.000GHz	0.606 / 143.039	1.702 / 30.420	0.236 / 59.200	0.395 / -148.447

VCE = 3V, Icc = 15mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.525 / -148.258	12.029 / 96.826	0.047 / 49.800	0.326 / -91.258
600.0MHz	0.522 / -163.994	8.187 / 87.549	0.058 / 54.943	0.268 / -102.278
800.0MHz	0.513 / -172.740	6.227 / 80.280	0.070 / 58.903	0.250 / -109.627
1.000GHz	0.520 / -179.446	5.044 / 73.821	0.083 / 61.392	0.244 / -114.814
1.200GHz	0.527 / 177.481	4.248 / 69.306	0.097 / 63.571	0.233 / -120.019
1.400GHz	0.528 / 172.437	3.648 / 64.798	0.112 / 64.581	0.240 / -123.723
1.600GHz	0.536 / 168.036	3.223 / 59.936	0.127 / 65.046	0.250 / -127.756
1.800GHz	0.549 / 163.774	2.884 / 55.476	0.143 / 64.972	0.262 / -131.414
2.000GHz	0.549 / 160.133	2.607 / 51.025	0.160 / 64.557	0.276 / -135.112
2.200GHz	0.557 / 156.345	2.377 / 46.574	0.176 / 63.860	0.292 / -138.957
2.400GHz	0.570 / 152.217	2.186 / 42.835	0.193 / 62.894	0.310 / -142.111
2.600GHz	0.588 / 148.349	2.016 / 38.767	0.211 / 61.674	0.327 / -145.780
2.800GHz	0.597 / 145.242	1.884 / 34.713	0.227 / 60.311	0.348 / -149.466
3.000GHz	0.609 / 140.850	1.764 / 31.474	0.245 / 58.835	0.370 / -152.703

VCE = 3V, Icc = 20mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.523 / -156.601	12.210 / 94.167	0.043 / 54.525	0.282 / -98.039
600.0MHz	0.522 / -169.112	8.269 / 85.709	0.056 / 59.928	0.238 / -108.591
800.0MHz	0.517 / -178.311	6.263 / 78.997	0.070 / 63.175	0.227 / -115.423
1.000GHz	0.533 / 175.220	5.072 / 72.890	0.084 / 65.075	0.226 / -119.981
1.200GHz	0.538 / 174.046	4.266 / 68.639	0.099 / 66.611	0.217 / -125.040
1.400GHz	0.539 / 169.721	3.658 / 64.163	0.115 / 67.063	0.226 / -128.276
1.600GHz	0.543 / 165.084	3.235 / 59.503	0.131 / 66.916	0.238 / -131.994
1.800GHz	0.559 / 161.210	2.896 / 55.184	0.147 / 66.394	0.250 / -135.275
2.000GHz	0.561 / 158.046	2.621 / 50.748	0.164 / 65.630	0.266 / -138.733
2.200GHz	0.563 / 154.052	2.381 / 46.543	0.181 / 64.616	0.282 / -142.283
2.400GHz	0.580 / 150.023	2.193 / 42.806	0.198 / 63.445	0.300 / -145.230
2.600GHz	0.590 / 146.545	2.022 / 38.990	0.216 / 61.918	0.318 / -148.686
2.800GHz	0.607 / 143.234	1.899 / 35.100	0.233 / 60.428	0.338 / -152.138
3.000GHz	0.619 / 138.833	1.773 / 31.504	0.250 / 58.836	0.360 / -155.159

VCE = 3V, Icc = 25mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.530 / -163.564	12.066 / 92.138	0.041 / 57.991	0.251 / -102.306
600.0MHz	0.537 / -173.455	8.131 / 84.303	0.054 / 63.352	0.218 / -112.259
800.0MHz	0.536 / 178.653	6.152 / 77.854	0.069 / 66.199	0.212 / -118.520
1.000GHz	0.543 / 172.673	4.981 / 71.873	0.084 / 67.653	0.215 / -122.542
1.200GHz	0.551 / 171.260	4.186 / 67.831	0.100 / 68.573	0.208 / -127.447
1.400GHz	0.551 / 167.386	3.587 / 63.438	0.116 / 68.754	0.219 / -130.324
1.600GHz	0.558 / 163.270	3.171 / 58.726	0.133 / 68.290	0.231 / -133.851
1.800GHz	0.576 / 159.538	2.838 / 54.546	0.150 / 67.519	0.245 / -136.929
2.000GHz	0.574 / 155.634	2.565 / 50.283	0.167 / 66.618	0.262 / -140.216
2.200GHz	0.574 / 152.453	2.337 / 45.926	0.184 / 65.383	0.279 / -143.686
2.400GHz	0.592 / 148.447	2.146 / 42.315	0.202 / 64.019	0.297 / -146.499
2.600GHz	0.610 / 144.681	1.987 / 38.524	0.219 / 62.398	0.315 / -149.966
2.800GHz	0.617 / 141.791	1.861 / 34.381	0.237 / 60.753	0.336 / -153.300
3.000GHz	0.635 / 137.787	1.731 / 31.331	0.254 / 59.050	0.359 / -156.275

VCE = 3V, Icc = 30mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.564 / -168.389	11.317 / 90.163	0.039 / 60.514	0.220 / -102.842
600.0MHz	0.567 / -177.713	7.615 / 82.675	0.053 / 65.627	0.198 / -111.464
800.0MHz	0.560 / 175.925	5.756 / 76.347	0.068 / 68.284	0.198 / -116.960
1.000GHz	0.580 / 170.920	4.655 / 70.477	0.084 / 69.595	0.205 / -120.547
1.200GHz	0.584 / 168.764	3.906 / 66.306	0.100 / 70.520	0.202 / -125.110
1.400GHz	0.583 / 165.264	3.351 / 61.957	0.116 / 70.340	0.215 / -128.084
1.600GHz	0.589 / 160.975	2.954 / 57.186	0.133 / 69.910	0.231 / -131.601
1.800GHz	0.598 / 157.909	2.643 / 52.909	0.151 / 68.995	0.247 / -134.886
2.000GHz	0.599 / 154.592	2.392 / 48.607	0.168 / 67.907	0.265 / -138.381
2.200GHz	0.608 / 150.769	2.173 / 44.368	0.186 / 66.591	0.284 / -142.038
2.400GHz	0.621 / 146.798	2.002 / 40.658	0.204 / 65.099	0.304 / -145.105
2.600GHz	0.638 / 143.847	1.849 / 36.766	0.222 / 63.338	0.324 / -148.703
2.800GHz	0.648 / 140.105	1.729 / 32.851	0.240 / 61.647	0.346 / -152.294
3.000GHz	0.657 / 136.198	1.616 / 29.691	0.258 / 59.788	0.369 / -155.487

VCE = 6V, ICC = 3mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.699 / -83.884	7.186 / 120.606	0.092 / 43.745	0.712 / -53.222
600.0MHz	0.636 / -109.179	5.504 / 104.759	0.103 / 34.794	0.592 / -66.410
800.0MHz	0.590 / -126.554	4.405 / 92.729	0.107 / 30.320	0.525 / -76.137
1.000GHz	0.576 / -139.306	3.674 / 82.757	0.107 / 28.973	0.485 / -83.642
1.200GHz	0.575 / -148.526	3.133 / 75.419	0.106 / 30.430	0.454 / -89.902
1.400GHz	0.572 / -157.253	2.712 / 68.721	0.105 / 33.469	0.445 / -95.555
1.600GHz	0.573 / -164.689	2.409 / 62.043	0.106 / 37.723	0.443 / -101.431
1.800GHz	0.582 / -172.110	2.165 / 55.922	0.110 / 42.973	0.448 / -106.868
2.000GHz	0.586 / -178.615	1.960 / 50.430	0.116 / 48.388	0.457 / -112.342
2.200GHz	0.594 / 176.092	1.782 / 44.908	0.126 / 53.172	0.468 / -117.844
2.400GHz	0.610 / 169.709	1.636 / 39.993	0.139 / 57.102	0.483 / -122.735
2.600GHz	0.624 / 164.785	1.500 / 35.249	0.156 / 59.572	0.498 / -128.115
2.800GHz	0.642 / 159.590	1.400 / 30.616	0.174 / 61.154	0.517 / -133.354
3.000GHz	0.656 / 153.842	1.294 / 26.825	0.194 / 61.799	0.538 / -138.100

VCE = 6V, ICC = 5mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.633 / -101.607	9.289 / 112.751	0.075 / 42.124	0.590 / -63.696
600.0MHz	0.573 / -126.043	6.783 / 98.725	0.084 / 37.630	0.474 / -76.338
800.0MHz	0.537 / -142.087	5.291 / 88.424	0.088 / 37.330	0.417 / -85.258
1.000GHz	0.531 / -154.589	4.356 / 79.793	0.092 / 39.245	0.387 / -92.096
1.200GHz	0.531 / -160.304	3.683 / 73.591	0.096 / 42.687	0.361 / -97.640
1.400GHz	0.540 / -167.709	3.179 / 67.690	0.103 / 46.166	0.357 / -102.770
1.600GHz	0.538 / -174.472	2.813 / 61.834	0.110 / 49.966	0.358 / -108.114
1.800GHz	0.548 / 179.238	2.528 / 56.438	0.120 / 53.172	0.365 / -113.037
2.000GHz	0.552 / 174.270	2.287 / 51.228	0.132 / 55.953	0.376 / -117.996
2.200GHz	0.562 / 169.373	2.083 / 46.269	0.145 / 58.114	0.388 / -122.976
2.400GHz	0.576 / 163.593	1.917 / 41.751	0.160 / 59.596	0.404 / -127.284
2.600GHz	0.599 / 158.949	1.765 / 37.285	0.177 / 60.231	0.420 / -132.208
2.800GHz	0.610 / 154.631	1.650 / 32.804	0.194 / 60.455	0.439 / -136.888
3.000GHz	0.624 / 149.755	1.530 / 29.053	0.212 / 60.068	0.461 / -141.206

VCE = 6V, ICC = 7mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.566 / -115.389	10.553 / 107.870	0.065 / 42.816	0.507 / -71.264
600.0MHz	0.532 / -137.598	7.500 / 95.276	0.073 / 41.698	0.404 / -83.350
800.0MHz	0.509 / -152.008	5.788 / 85.956	0.079 / 43.655	0.356 / -91.886
1.000GHz	0.511 / -163.168	4.738 / 78.154	0.087 / 46.580	0.334 / -98.312
1.200GHz	0.517 / -167.806	4.002 / 72.574	0.095 / 50.231	0.311 / -103.733
1.400GHz	0.522 / -174.748	3.439 / 67.139	0.105 / 53.297	0.310 / -108.449
1.600GHz	0.524 / 179.556	3.046 / 61.724	0.115 / 55.950	0.313 / -113.487
1.800GHz	0.539 / 174.307	2.730 / 56.698	0.128 / 57.908	0.322 / -117.987
2.000GHz	0.534 / 169.663	2.469 / 51.790	0.141 / 59.448	0.333 / -122.575
2.200GHz	0.542 / 164.719	2.254 / 46.977	0.156 / 60.351	0.346 / -127.273
2.400GHz	0.562 / 160.362	2.070 / 42.798	0.171 / 60.748	0.362 / -131.214
2.600GHz	0.580 / 155.798	1.908 / 38.446	0.188 / 60.576	0.378 / -135.706
2.800GHz	0.594 / 152.046	1.785 / 34.359	0.205 / 60.181	0.397 / -140.131
3.000GHz	0.599 / 147.002	1.662 / 30.388	0.223 / 59.315	0.419 / -144.023

VCE = 6V, ICC = 10mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.527 / -128.942	11.688 / 103.202	0.056 / 45.304	0.426 / -79.441
600.0MHz	0.507 / -149.438	8.133 / 92.071	0.064 / 47.515	0.339 / -91.144
800.0MHz	0.494 / -161.078	6.231 / 83.785	0.074 / 50.838	0.304 / -99.336
1.000GHz	0.501 / -170.667	5.071 / 76.650	0.084 / 54.078	0.287 / -105.282
1.200GHz	0.500 / -174.352	4.278 / 71.698	0.095 / 57.040	0.269 / -110.628
1.400GHz	0.508 / -179.749	3.674 / 66.650	0.108 / 59.197	0.270 / -114.983
1.600GHz	0.512 / 174.662	3.251 / 61.463	0.121 / 60.624	0.276 / -119.607
1.800GHz	0.525 / 170.080	2.908 / 56.902	0.135 / 61.545	0.285 / -123.743
2.000GHz	0.530 / 165.686	2.634 / 52.175	0.150 / 61.961	0.298 / -127.911
2.200GHz	0.536 / 161.365	2.401 / 47.722	0.165 / 62.011	0.311 / -132.185
2.400GHz	0.551 / 156.680	2.208 / 43.729	0.181 / 61.682	0.328 / -135.788
2.600GHz	0.566 / 152.546	2.042 / 39.501	0.198 / 60.990	0.343 / -139.904
2.800GHz	0.585 / 149.405	1.908 / 35.534	0.215 / 60.020	0.363 / -143.938
3.000GHz	0.595 / 144.263	1.783 / 31.882	0.232 / 58.888	0.384 / -147.470

V_{CE} = 6V, I_{CC} = 15mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.495 / -142.834	12.630 / 98.826	0.048 / 50.293	0.350 / -88.436
600.0MHz	0.489 / -158.518	8.662 / 89.170	0.059 / 54.646	0.283 / -99.852
800.0MHz	0.486 / -169.815	6.592 / 81.826	0.071 / 58.280	0.259 / -107.586
1.000GHz	0.498 / -177.152	5.355 / 75.255	0.083 / 60.727	0.250 / -113.023
1.200GHz	0.506 / 179.512	4.502 / 70.878	0.097 / 62.787	0.235 / -118.288
1.400GHz	0.501 / 174.658	3.860 / 66.163	0.112 / 63.852	0.239 / -122.096
1.600GHz	0.511 / 170.087	3.419 / 61.370	0.126 / 64.341	0.247 / -126.300
1.800GHz	0.520 / 165.296	3.060 / 57.038	0.142 / 64.399	0.257 / -130.017
2.000GHz	0.519 / 161.986	2.772 / 52.532	0.158 / 63.994	0.270 / -133.723
2.200GHz	0.530 / 157.996	2.526 / 48.289	0.174 / 63.333	0.284 / -137.608
2.400GHz	0.543 / 153.967	2.325 / 44.364	0.190 / 62.493	0.300 / -140.735
2.600GHz	0.561 / 149.588	2.147 / 40.474	0.207 / 61.240	0.316 / -144.440
2.800GHz	0.567 / 146.899	2.006 / 36.450	0.224 / 59.976	0.335 / -148.157
3.000GHz	0.577 / 141.898	1.879 / 33.156	0.241 / 58.542	0.356 / -151.338

V_{CE} = 6V, I_{CC} = 20mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.489 / -150.031	13.095 / 96.423	0.044 / 54.171	0.308 / -94.360
600.0MHz	0.487 / -165.116	8.905 / 87.587	0.056 / 59.506	0.255 / -105.314
800.0MHz	0.486 / -174.315	6.766 / 80.685	0.070 / 62.606	0.237 / -112.696
1.000GHz	0.496 / 178.489	5.482 / 74.500	0.084 / 64.515	0.232 / -117.789
1.200GHz	0.500 / 175.738	4.613 / 70.309	0.098 / 65.860	0.219 / -122.942
1.400GHz	0.505 / 171.753	3.952 / 65.888	0.114 / 66.368	0.225 / -126.421
1.600GHz	0.512 / 167.655	3.495 / 61.257	0.129 / 66.207	0.233 / -130.320
1.800GHz	0.523 / 163.211	3.131 / 57.026	0.146 / 65.815	0.244 / -133.658
2.000GHz	0.521 / 159.686	2.833 / 52.586	0.162 / 65.035	0.257 / -137.136
2.200GHz	0.530 / 156.245	2.581 / 48.440	0.178 / 64.126	0.271 / -140.716
2.400GHz	0.544 / 152.097	2.381 / 44.720	0.195 / 62.919	0.288 / -143.626
2.600GHz	0.559 / 148.759	2.200 / 40.787	0.212 / 61.487	0.303 / -147.123
2.800GHz	0.572 / 145.200	2.057 / 36.995	0.228 / 60.042	0.323 / -150.577
3.000GHz	0.586 / 140.604	1.923 / 33.622	0.246 / 58.531	0.343 / -153.574

V_{CE} = 6V, I_{CC} = 25mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.480 / -156.954	13.326 / 94.769	0.042 / 58.161	0.281 / -98.334
600.0MHz	0.486 / -168.913	9.031 / 86.488	0.055 / 62.823	0.236 / -109.151
800.0MHz	0.489 / -178.036	6.851 / 79.946	0.069 / 65.605	0.223 / -116.080
1.000GHz	0.497 / 175.827	5.546 / 74.014	0.084 / 67.018	0.220 / -120.769
1.200GHz	0.499 / 174.181	4.663 / 69.907	0.099 / 67.869	0.209 / -126.005
1.400GHz	0.504 / 170.102	4.000 / 65.626	0.116 / 67.897	0.216 / -129.090
1.600GHz	0.508 / 165.210	3.540 / 60.969	0.131 / 67.467	0.225 / -132.732
1.800GHz	0.525 / 161.749	3.165 / 56.807	0.148 / 66.754	0.236 / -135.920
2.000GHz	0.525 / 158.182	2.865 / 52.618	0.164 / 65.840	0.250 / -139.129
2.200GHz	0.526 / 154.706	2.614 / 48.445	0.181 / 64.605	0.264 / -142.619
2.400GHz	0.545 / 151.017	2.405 / 44.760	0.198 / 63.349	0.281 / -145.335
2.600GHz	0.556 / 147.741	2.223 / 40.902	0.215 / 61.705	0.297 / -148.655
2.800GHz	0.568 / 144.328	2.083 / 37.110	0.231 / 60.157	0.315 / -152.058
3.000GHz	0.583 / 139.706	1.951 / 33.695	0.248 / 58.561	0.336 / -154.888

V_{CE} = 6V, I_{CC} = 30mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.494 / -159.981	13.438 / 93.523	0.040 / 60.368	0.262 / -101.148
600.0MHz	0.496 / -172.165	9.074 / 85.649	0.054 / 65.213	0.223 / -111.456
800.0MHz	0.490 / 179.700	6.873 / 79.335	0.069 / 67.389	0.213 / -118.123
1.000GHz	0.500 / 173.675	5.565 / 73.516	0.084 / 68.613	0.212 / -122.446
1.200GHz	0.500 / 172.330	4.679 / 69.607	0.100 / 69.156	0.202 / -127.538
1.400GHz	0.512 / 168.865	4.008 / 65.322	0.116 / 68.963	0.210 / -130.472
1.600GHz	0.518 / 165.042	3.543 / 60.772	0.133 / 68.374	0.220 / -133.988
1.800GHz	0.530 / 160.286	3.172 / 56.649	0.149 / 67.394	0.231 / -136.956
2.000GHz	0.531 / 157.021	2.869 / 52.411	0.166 / 66.330	0.245 / -140.151
2.200GHz	0.536 / 153.803	2.616 / 48.369	0.183 / 65.065	0.260 / -143.526
2.400GHz	0.548 / 149.859	2.411 / 44.723	0.200 / 63.680	0.277 / -146.136
2.600GHz	0.564 / 146.370	2.225 / 41.003	0.217 / 62.006	0.293 / -149.474
2.800GHz	0.571 / 143.640	2.085 / 36.980	0.234 / 60.379	0.312 / -152.744
3.000GHz	0.583 / 138.720	1.950 / 33.633	0.251 / 58.647	0.333 / -155.566

V_{CE} = 6V, I_{CC} = 35mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.491 / -163.629	13.402 / 92.583	0.039 / 62.426	0.246 / -102.686
600.0MHz	0.495 / -174.992	9.040 / 85.039	0.054 / 66.879	0.212 / -112.620
800.0MHz	0.497 / 178.815	6.844 / 78.777	0.069 / 69.004	0.205 / -118.930
1.000GHz	0.511 / 173.231	5.531 / 73.058	0.084 / 69.725	0.206 / -123.054
1.200GHz	0.516 / 170.897	4.662 / 69.087	0.101 / 70.067	0.197 / -128.032
1.400GHz	0.512 / 167.874	3.995 / 64.898	0.117 / 69.776	0.206 / -130.826
1.600GHz	0.524 / 163.522	3.530 / 60.416	0.133 / 69.082	0.217 / -134.147
1.800GHz	0.537 / 159.611	3.155 / 56.322	0.150 / 68.068	0.229 / -137.100
2.000GHz	0.533 / 156.521	2.857 / 52.099	0.167 / 66.876	0.243 / -140.251
2.200GHz	0.540 / 153.305	2.602 / 48.010	0.184 / 65.538	0.258 / -143.580
2.400GHz	0.554 / 149.480	2.396 / 44.402	0.201 / 64.061	0.275 / -146.242
2.600GHz	0.567 / 145.700	2.214 / 40.594	0.218 / 62.300	0.292 / -149.526
2.800GHz	0.584 / 142.739	2.075 / 36.843	0.235 / 60.670	0.311 / -152.860
3.000GHz	0.591 / 138.115	1.934 / 33.389	0.252 / 58.880	0.332 / -155.667

V_{CE} = 6V, I_{CC} = 40mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.511 / -166.945	13.244 / 91.713	0.038 / 64.567	0.233 / -103.079
600.0MHz	0.507 / -175.766	8.927 / 84.321	0.053 / 68.679	0.203 / -112.615
800.0MHz	0.510 / 177.190	6.749 / 78.231	0.068 / 70.223	0.198 / -118.474
1.000GHz	0.520 / 171.523	5.454 / 72.607	0.084 / 70.841	0.201 / -122.323
1.200GHz	0.516 / 170.862	4.593 / 68.618	0.101 / 71.120	0.193 / -127.131
1.400GHz	0.524 / 167.236	3.931 / 64.384	0.117 / 70.683	0.203 / -129.906
1.600GHz	0.533 / 163.000	3.475 / 59.926	0.134 / 69.785	0.214 / -133.270
1.800GHz	0.545 / 159.006	3.112 / 55.788	0.151 / 68.796	0.227 / -136.205
2.000GHz	0.542 / 155.612	2.815 / 51.542	0.168 / 67.528	0.242 / -139.389
2.200GHz	0.552 / 152.846	2.566 / 47.485	0.185 / 66.048	0.258 / -142.762
2.400GHz	0.564 / 148.708	2.364 / 43.864	0.202 / 64.508	0.276 / -145.495
2.600GHz	0.578 / 144.995	2.180 / 40.025	0.219 / 62.790	0.293 / -148.829
2.800GHz	0.589 / 142.364	2.051 / 36.362	0.236 / 61.069	0.312 / -152.256
3.000GHz	0.593 / 137.543	1.913 / 32.807	0.254 / 59.216	0.334 / -155.103

V_{CE} = 6V, I_{CC} = 45mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.522 / -168.935	12.905 / 90.854	0.038 / 65.233	0.220 / -101.854
600.0MHz	0.523 / -178.528	8.673 / 83.590	0.052 / 69.729	0.194 / -110.666
800.0MHz	0.520 / 175.434	6.564 / 77.503	0.068 / 71.385	0.191 / -116.196
1.000GHz	0.529 / 171.028	5.311 / 71.777	0.084 / 71.624	0.196 / -119.817
1.200GHz	0.529 / 169.284	4.460 / 67.831	0.100 / 71.998	0.190 / -124.384
1.400GHz	0.538 / 165.831	3.824 / 63.638	0.117 / 71.484	0.201 / -127.249
1.600GHz	0.549 / 162.014	3.376 / 59.079	0.133 / 70.680	0.214 / -130.699
1.800GHz	0.555 / 158.470	3.026 / 54.967	0.151 / 69.537	0.228 / -133.853
2.000GHz	0.556 / 155.024	2.734 / 50.640	0.168 / 68.287	0.245 / -137.163
2.200GHz	0.563 / 151.617	2.494 / 46.531	0.185 / 66.775	0.261 / -140.759
2.400GHz	0.580 / 147.967	2.293 / 42.845	0.203 / 65.218	0.280 / -143.680
2.600GHz	0.597 / 144.668	2.115 / 39.109	0.220 / 63.443	0.297 / -147.193
2.800GHz	0.599 / 141.920	1.979 / 35.129	0.237 / 61.587	0.318 / -150.688
3.000GHz	0.609 / 137.377	1.852 / 31.740	0.255 / 59.778	0.340 / -153.798

V_{CE} = 6V, I_{CC} = 50mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.538 / -172.332	12.084 / 89.757	0.036 / 67.197	0.204 / -96.523
600.0MHz	0.544 / -179.409	8.121 / 82.534	0.051 / 70.707	0.183 / -103.805
800.0MHz	0.546 / 174.064	6.131 / 76.409	0.067 / 72.465	0.185 / -109.108
1.000GHz	0.560 / 169.226	4.953 / 70.541	0.082 / 72.909	0.193 / -112.861
1.200GHz	0.560 / 168.631	4.168 / 66.580	0.099 / 73.342	0.191 / -117.255
1.400GHz	0.565 / 164.367	3.570 / 62.353	0.116 / 72.834	0.205 / -120.651
1.600GHz	0.574 / 160.961	3.150 / 57.686	0.133 / 72.005	0.221 / -124.722
1.800GHz	0.584 / 157.230	2.818 / 53.423	0.150 / 70.986	0.237 / -128.414
2.000GHz	0.586 / 154.083	2.550 / 48.996	0.168 / 69.606	0.256 / -132.275
2.200GHz	0.589 / 150.323	2.317 / 44.879	0.186 / 68.139	0.274 / -136.379
2.400GHz	0.607 / 146.803	2.127 / 41.214	0.203 / 66.530	0.294 / -139.805
2.600GHz	0.624 / 143.503	1.970 / 37.257	0.222 / 64.713	0.313 / -143.829
2.800GHz	0.632 / 140.384	1.835 / 33.413	0.239 / 62.837	0.335 / -147.744
3.000GHz	0.641 / 136.292	1.720 / 30.096	0.258 / 60.915	0.358 / -151.237

VCE = 8V, ICC = 3mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.731 / -83.590	7.213 / 121.157	0.091 / 44.018	0.719 / -51.849
600.0MHz	0.641 / -107.821	5.552 / 105.342	0.103 / 35.190	0.598 / -64.817
800.0MHz	0.600 / -125.873	4.439 / 93.377	0.107 / 30.705	0.530 / -74.292
1.000GHz	0.586 / -139.628	3.707 / 83.429	0.107 / 29.195	0.488 / -81.777
1.200GHz	0.572 / -147.955	3.165 / 76.195	0.106 / 30.348	0.457 / -87.739
1.400GHz	0.569 / -156.678	2.741 / 69.412	0.106 / 33.139	0.447 / -93.255
1.600GHz	0.570 / -164.997	2.441 / 62.706	0.106 / 37.282	0.443 / -99.037
1.800GHz	0.581 / -171.695	2.198 / 56.736	0.109 / 42.410	0.446 / -104.462
2.000GHz	0.582 / -178.090	1.985 / 50.937	0.115 / 47.707	0.455 / -109.895
2.200GHz	0.592 / 176.594	1.808 / 45.658	0.125 / 52.595	0.466 / -115.334
2.400GHz	0.604 / 170.452	1.662 / 40.909	0.137 / 56.533	0.479 / -120.208
2.600GHz	0.623 / 164.886	1.523 / 36.032	0.153 / 59.272	0.493 / -125.615
2.800GHz	0.638 / 159.896	1.424 / 31.577	0.171 / 61.015	0.512 / -130.831
3.000GHz	0.651 / 153.878	1.322 / 27.462	0.190 / 61.776	0.533 / -135.562

VCE = 8V, ICC = 5mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.615 / -100.413	9.364 / 113.377	0.075 / 42.355	0.596 / -62.240
600.0MHz	0.565 / -125.344	6.842 / 99.335	0.083 / 38.067	0.479 / -74.598
800.0MHz	0.538 / -141.101	5.349 / 88.930	0.088 / 37.373	0.421 / -83.327
1.000GHz	0.533 / -153.207	4.406 / 80.337	0.092 / 39.159	0.389 / -89.987
1.200GHz	0.532 / -160.300	3.732 / 74.210	0.097 / 42.455	0.361 / -95.423
1.400GHz	0.534 / -167.356	3.219 / 68.312	0.103 / 46.029	0.356 / -100.458
1.600GHz	0.536 / -174.202	2.858 / 62.450	0.110 / 49.545	0.357 / -105.712
1.800GHz	0.549 / -179.850	2.562 / 57.171	0.120 / 52.994	0.362 / -110.624
2.000GHz	0.544 / 174.653	2.322 / 51.915	0.131 / 55.740	0.372 / -115.515
2.200GHz	0.556 / 169.446	2.113 / 46.891	0.144 / 57.902	0.384 / -120.527
2.400GHz	0.577 / 164.145	1.945 / 42.381	0.158 / 59.421	0.399 / -124.858
2.600GHz	0.592 / 159.181	1.794 / 38.033	0.174 / 60.097	0.413 / -129.792
2.800GHz	0.601 / 155.324	1.674 / 33.638	0.191 / 60.383	0.433 / -134.523
3.000GHz	0.613 / 149.889	1.558 / 29.737	0.209 / 60.122	0.454 / -138.792

VCE = 8V, ICC = 7mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.567 / -114.187	10.638 / 108.378	0.065 / 43.245	0.513 / -69.606
600.0MHz	0.527 / -136.105	7.579 / 95.731	0.073 / 41.706	0.407 / -81.442
800.0MHz	0.508 / -151.205	5.854 / 86.466	0.079 / 43.525	0.359 / -89.783
1.000GHz	0.512 / -162.334	4.794 / 78.554	0.086 / 46.433	0.334 / -96.102
1.200GHz	0.514 / -168.184	4.050 / 73.101	0.095 / 49.980	0.311 / -101.308
1.400GHz	0.514 / -174.479	3.483 / 67.822	0.104 / 53.141	0.308 / -105.963
1.600GHz	0.516 / -179.688	3.085 / 62.215	0.115 / 55.657	0.311 / -110.973
1.800GHz	0.533 / 174.839	2.767 / 57.241	0.127 / 57.664	0.318 / -115.564
2.000GHz	0.535 / 169.980	2.507 / 52.326	0.140 / 59.283	0.328 / -120.177
2.200GHz	0.546 / 165.102	2.282 / 47.649	0.154 / 60.212	0.341 / -124.790
2.400GHz	0.560 / 160.636	2.102 / 43.475	0.169 / 60.673	0.356 / -128.827
2.600GHz	0.572 / 156.128	1.944 / 39.039	0.186 / 60.564	0.371 / -133.385
2.800GHz	0.589 / 152.374	1.811 / 34.981	0.203 / 60.186	0.390 / -137.803
3.000GHz	0.599 / 146.958	1.694 / 31.161	0.220 / 59.488	0.412 / -141.755

VCE = 8V, ICC = 10mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.530 / -126.988	11.775 / 103.738	0.056 / 45.655	0.432 / -77.512
600.0MHz	0.509 / -146.994	8.213 / 92.545	0.064 / 47.462	0.343 / -88.860
800.0MHz	0.493 / -160.407	6.294 / 84.196	0.074 / 50.544	0.305 / -96.975
1.000GHz	0.499 / -168.887	5.129 / 76.987	0.084 / 53.933	0.287 / -102.913
1.200GHz	0.503 / -174.182	4.326 / 72.112	0.095 / 56.730	0.268 / -107.963
1.400GHz	0.504 / -179.875	3.716 / 67.139	0.107 / 58.974	0.268 / -112.308
1.600GHz	0.513 / 174.830	3.288 / 62.050	0.120 / 60.421	0.273 / -117.021
1.800GHz	0.524 / 169.969	2.947 / 57.407	0.134 / 61.436	0.281 / -121.171
2.000GHz	0.522 / 166.332	2.665 / 52.707	0.148 / 61.882	0.293 / -125.425
2.200GHz	0.532 / 161.737	2.431 / 48.336	0.164 / 61.958	0.306 / -129.772
2.400GHz	0.546 / 157.037	2.236 / 44.377	0.179 / 61.672	0.322 / -133.373
2.600GHz	0.565 / 153.011	2.064 / 40.061	0.196 / 60.961	0.337 / -137.526
2.800GHz	0.575 / 149.503	1.936 / 36.117	0.213 / 60.067	0.356 / -141.660
3.000GHz	0.582 / 144.048	1.812 / 32.354	0.230 / 59.020	0.376 / -145.307

V_{CE} = 8V, I_{CC} = 15mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.494 / -142.118	12.729 / 99.465	0.048 / 50.045	0.357 / -85.970
600.0MHz	0.496 / -157.830	8.734 / 89.660	0.059 / 54.333	0.287 / -97.068
800.0MHz	0.482 / -169.292	6.656 / 82.212	0.070 / 58.022	0.260 / -104.678
1.000GHz	0.485 / -176.643	5.403 / 75.761	0.083 / 60.629	0.250 / -110.150
1.200GHz	0.497 / 179.940	4.549 / 71.192	0.096 / 62.485	0.233 / -115.230
1.400GHz	0.497 / 175.017	3.907 / 66.607	0.111 / 63.688	0.237 / -119.204
1.600GHz	0.510 / 170.144	3.450 / 61.853	0.125 / 64.196	0.244 / -123.488
1.800GHz	0.513 / 165.862	3.097 / 57.431	0.141 / 64.250	0.253 / -127.196
2.000GHz	0.518 / 161.872	2.800 / 52.950	0.156 / 63.933	0.265 / -131.040
2.200GHz	0.525 / 158.203	2.554 / 48.724	0.172 / 63.368	0.279 / -135.006
2.400GHz	0.541 / 153.520	2.353 / 44.999	0.188 / 62.543	0.295 / -138.261
2.600GHz	0.558 / 150.063	2.174 / 41.063	0.205 / 61.384	0.310 / -142.043
2.800GHz	0.567 / 147.223	2.026 / 37.070	0.221 / 60.121	0.329 / -145.798
3.000GHz	0.575 / 142.277	1.903 / 33.497	0.238 / 58.739	0.349 / -149.081

V_{CE} = 8V, I_{CC} = 20mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.489 / -149.166	13.199 / 96.987	0.044 / 54.677	0.315 / -91.368
600.0MHz	0.484 / -163.294	8.994 / 88.018	0.056 / 59.170	0.257 / -102.992
800.0MHz	0.483 / -173.863	6.832 / 81.076	0.069 / 62.305	0.237 / -109.537
1.000GHz	0.492 / 179.518	5.541 / 74.912	0.083 / 64.124	0.231 / -114.606
1.200GHz	0.495 / 176.540	4.660 / 70.683	0.098 / 65.672	0.217 / -119.634
1.400GHz	0.497 / 172.978	4.000 / 66.247	0.113 / 66.176	0.222 / -123.253
1.600GHz	0.503 / 167.281	3.533 / 61.704	0.128 / 66.201	0.230 / -127.240
1.800GHz	0.522 / 163.407	3.164 / 57.371	0.144 / 65.788	0.239 / -130.749
2.000GHz	0.517 / 159.775	2.866 / 53.102	0.160 / 65.080	0.252 / -134.311
2.200GHz	0.522 / 156.204	2.611 / 48.988	0.176 / 64.098	0.266 / -138.016
2.400GHz	0.541 / 151.927	2.408 / 45.182	0.193 / 63.083	0.282 / -141.070
2.600GHz	0.557 / 148.649	2.222 / 41.349	0.209 / 61.680	0.297 / -144.617
2.800GHz	0.567 / 145.756	2.077 / 37.485	0.226 / 60.245	0.316 / -148.162
3.000GHz	0.577 / 141.517	1.945 / 34.060	0.243 / 58.751	0.336 / -151.289

V_{CE} = 8V, I_{CC} = 25mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.483 / -155.388	13.447 / 95.399	0.042 / 57.134	0.288 / -94.905
600.0MHz	0.490 / -168.155	9.119 / 86.961	0.055 / 62.445	0.238 / -105.400
800.0MHz	0.482 / -176.937	6.917 / 80.346	0.069 / 65.078	0.223 / -112.511
1.000GHz	0.496 / 176.452	5.606 / 74.370	0.083 / 66.516	0.219 / -117.325
1.200GHz	0.496 / 174.318	4.716 / 70.212	0.099 / 67.495	0.206 / -122.331
1.400GHz	0.499 / 170.580	4.045 / 65.960	0.114 / 67.725	0.212 / -125.664
1.600GHz	0.502 / 165.915	3.578 / 61.468	0.130 / 67.379	0.221 / -129.439
1.800GHz	0.519 / 162.173	3.205 / 57.284	0.146 / 66.712	0.232 / -132.709
2.000GHz	0.516 / 158.565	2.899 / 52.988	0.162 / 65.823	0.245 / -136.146
2.200GHz	0.525 / 155.038	2.644 / 48.879	0.179 / 64.736	0.259 / -139.715
2.400GHz	0.541 / 151.035	2.429 / 45.184	0.195 / 63.462	0.275 / -142.589
2.600GHz	0.557 / 147.547	2.251 / 41.486	0.212 / 61.950	0.290 / -146.085
2.800GHz	0.572 / 144.996	2.106 / 37.767	0.229 / 60.431	0.309 / -149.531
3.000GHz	0.578 / 139.827	1.969 / 34.259	0.246 / 58.854	0.329 / -152.545

V_{CE} = 8V, I_{CC} = 30mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.484 / -159.020	13.545 / 94.263	0.040 / 60.403	0.269 / -97.175
600.0MHz	0.488 / -170.651	9.180 / 86.188	0.054 / 64.633	0.226 / -107.459
800.0MHz	0.485 / -178.910	6.948 / 79.771	0.068 / 66.927	0.213 / -114.195
1.000GHz	0.494 / 175.023	5.629 / 73.922	0.084 / 68.185	0.211 / -118.716
1.200GHz	0.504 / 172.915	4.731 / 69.937	0.099 / 68.883	0.200 / -123.713
1.400GHz	0.502 / 169.166	4.062 / 65.685	0.115 / 68.748	0.207 / -126.825
1.600GHz	0.506 / 165.196	3.586 / 61.190	0.131 / 68.245	0.216 / -130.429
1.800GHz	0.521 / 161.510	3.215 / 57.003	0.148 / 67.414	0.227 / -133.643
2.000GHz	0.518 / 157.583	2.907 / 52.865	0.164 / 66.473	0.240 / -136.965
2.200GHz	0.528 / 154.035	2.650 / 48.856	0.181 / 65.203	0.255 / -140.478
2.400GHz	0.541 / 149.983	2.440 / 45.157	0.197 / 63.801	0.271 / -143.312
2.600GHz	0.556 / 146.618	2.252 / 41.317	0.214 / 62.183	0.287 / -146.671
2.800GHz	0.561 / 143.599	2.115 / 37.557	0.231 / 60.572	0.305 / -150.118
3.000GHz	0.577 / 139.290	1.978 / 34.131	0.248 / 58.969	0.326 / -153.064

VCE = 8V, Icc = 35mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.485 / -163.325	13.574 / 93.390	0.039 / 61.971	0.255 / -98.550
600.0MHz	0.491 / -173.316	9.170 / 85.624	0.053 / 66.435	0.216 / -108.441
800.0MHz	0.488 / 179.112	6.946 / 79.342	0.068 / 68.492	0.206 / -114.875
1.000GHz	0.501 / 173.692	5.624 / 73.477	0.084 / 69.341	0.205 / -119.130
1.200GHz	0.504 / 172.048	4.730 / 69.574	0.099 / 69.890	0.195 / -124.043
1.400GHz	0.508 / 168.134	4.056 / 65.425	0.116 / 69.562	0.203 / -127.036
1.600GHz	0.510 / 164.154	3.584 / 60.908	0.132 / 69.065	0.213 / -130.660
1.800GHz	0.528 / 160.750	3.209 / 56.813	0.148 / 68.029	0.224 / -133.775
2.000GHz	0.526 / 156.813	2.904 / 52.575	0.165 / 66.922	0.238 / -137.090
2.200GHz	0.529 / 153.559	2.643 / 48.552	0.182 / 65.538	0.252 / -140.545
2.400GHz	0.545 / 149.505	2.438 / 44.860	0.199 / 64.149	0.269 / -143.376
2.600GHz	0.563 / 146.620	2.248 / 41.110	0.216 / 62.504	0.285 / -146.747
2.800GHz	0.569 / 143.016	2.110 / 37.133	0.232 / 60.823	0.304 / -150.158
3.000GHz	0.578 / 138.959	1.971 / 33.827	0.249 / 59.087	0.324 / -153.108

VCE = 8V, Icc = 40mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.487 / -164.542	13.516 / 92.654	0.039 / 63.286	0.243 / -99.074
600.0MHz	0.498 / -174.720	9.123 / 85.063	0.053 / 67.758	0.207 / -108.447
800.0MHz	0.494 / 177.341	6.903 / 78.843	0.068 / 69.707	0.200 / -114.646
1.000GHz	0.505 / 172.250	5.592 / 73.066	0.083 / 70.237	0.200 / -118.710
1.200GHz	0.505 / 171.126	4.696 / 69.218	0.100 / 70.813	0.191 / -123.515
1.400GHz	0.514 / 167.236	4.026 / 64.998	0.116 / 70.467	0.199 / -126.463
1.600GHz	0.521 / 163.299	3.559 / 60.578	0.132 / 69.677	0.210 / -129.985
1.800GHz	0.531 / 159.563	3.185 / 56.499	0.149 / 68.615	0.222 / -133.207
2.000GHz	0.530 / 156.389	2.884 / 52.205	0.166 / 67.352	0.236 / -136.488
2.200GHz	0.537 / 153.228	2.628 / 48.212	0.183 / 66.012	0.251 / -139.992
2.400GHz	0.548 / 149.200	2.418 / 44.575	0.199 / 64.533	0.268 / -142.841
2.600GHz	0.568 / 145.738	2.236 / 40.730	0.217 / 62.821	0.284 / -146.278
2.800GHz	0.574 / 142.740	2.094 / 36.915	0.233 / 61.146	0.303 / -149.730
3.000GHz	0.589 / 138.280	1.960 / 33.613	0.250 / 59.401	0.325 / -152.757

VCE = 8V, Icc = 45mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.484 / -167.061	13.383 / 92.051	0.038 / 65.017	0.233 / -98.416
600.0MHz	0.501 / -176.240	9.012 / 84.562	0.052 / 68.989	0.200 / -107.403
800.0MHz	0.501 / 176.968	6.820 / 78.358	0.068 / 70.578	0.194 / -113.321
1.000GHz	0.512 / 171.592	5.514 / 72.694	0.083 / 71.172	0.196 / -117.250
1.200GHz	0.516 / 170.649	4.639 / 68.736	0.099 / 71.441	0.188 / -121.853
1.400GHz	0.522 / 166.935	3.981 / 64.547	0.116 / 71.035	0.198 / -124.832
1.600GHz	0.523 / 162.647	3.512 / 60.101	0.132 / 70.304	0.209 / -128.416
1.800GHz	0.539 / 159.687	3.150 / 56.000	0.149 / 69.157	0.222 / -131.686
2.000GHz	0.538 / 156.220	2.844 / 51.709	0.166 / 67.938	0.237 / -135.055
2.200GHz	0.545 / 152.294	2.595 / 47.620	0.183 / 66.541	0.252 / -138.704
2.400GHz	0.559 / 148.449	2.386 / 43.954	0.200 / 65.036	0.269 / -141.663
2.600GHz	0.577 / 145.393	2.206 / 40.120	0.217 / 63.275	0.286 / -145.173
2.800GHz	0.579 / 142.691	2.062 / 36.389	0.234 / 61.471	0.306 / -148.748
3.000GHz	0.602 / 138.278	1.932 / 32.993	0.251 / 59.828	0.327 / -151.832

VCE = 8V, Icc = 50mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
400.0MHz	0.500 / -167.737	13.079 / 91.311	0.037 / 65.549	0.221 / -96.297
600.0MHz	0.519 / -177.614	8.801 / 83.953	0.052 / 69.752	0.193 / -104.547
800.0MHz	0.515 / 175.186	6.657 / 77.818	0.067 / 71.437	0.189 / -110.177
1.000GHz	0.527 / 171.032	5.380 / 71.988	0.082 / 71.915	0.193 / -114.042
1.200GHz	0.524 / 169.743	4.530 / 68.138	0.099 / 72.343	0.186 / -118.405
1.400GHz	0.532 / 165.944	3.876 / 63.837	0.115 / 71.862	0.197 / -121.574
1.600GHz	0.535 / 161.685	3.424 / 59.369	0.132 / 70.995	0.210 / -125.369
1.800GHz	0.551 / 158.154	3.067 / 55.179	0.149 / 69.895	0.224 / -128.797
2.000GHz	0.552 / 155.233	2.770 / 50.975	0.166 / 68.718	0.240 / -132.448
2.200GHz	0.556 / 151.804	2.526 / 46.823	0.183 / 67.249	0.256 / -136.264
2.400GHz	0.571 / 148.322	2.325 / 43.167	0.200 / 65.730	0.274 / -139.477
2.600GHz	0.585 / 144.993	2.148 / 39.258	0.218 / 63.921	0.292 / -143.258
2.800GHz	0.593 / 142.214	2.007 / 35.352	0.235 / 62.164	0.312 / -146.977
3.000GHz	0.609 / 137.034	1.879 / 31.992	0.252 / 60.392	0.334 / -150.258