

2SK2595

Silicon N-Channel MOS FET UHF Power Amplifier

REJ03G0206-0400

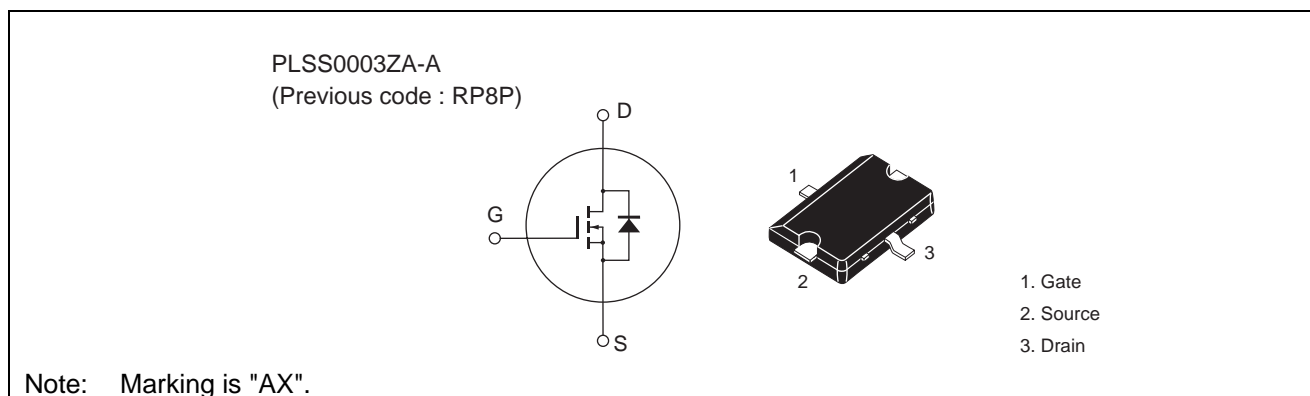
Rev.4.00

Feb.14.2005

Features

- High power output, High gain, High efficiency
PG = 7.8 dB, Pout = 5.37 W, $\eta_D = 50\%$ min. (f = 836.5 MHz)
- Compact package capable of surface mounting

Outline



This Device is sensitive to Electro Static Discharge. An Adequate handling procedure is requested.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	17	V
Gate to source voltage	V _{GSS}	±10	V
Drain current	I _D	1.1	A
Drain peak current	I _{D(pulse)} ^{Note1}	5	A
Channel dissipation	P _{ch} ^{Note2}	20	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	- 45 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

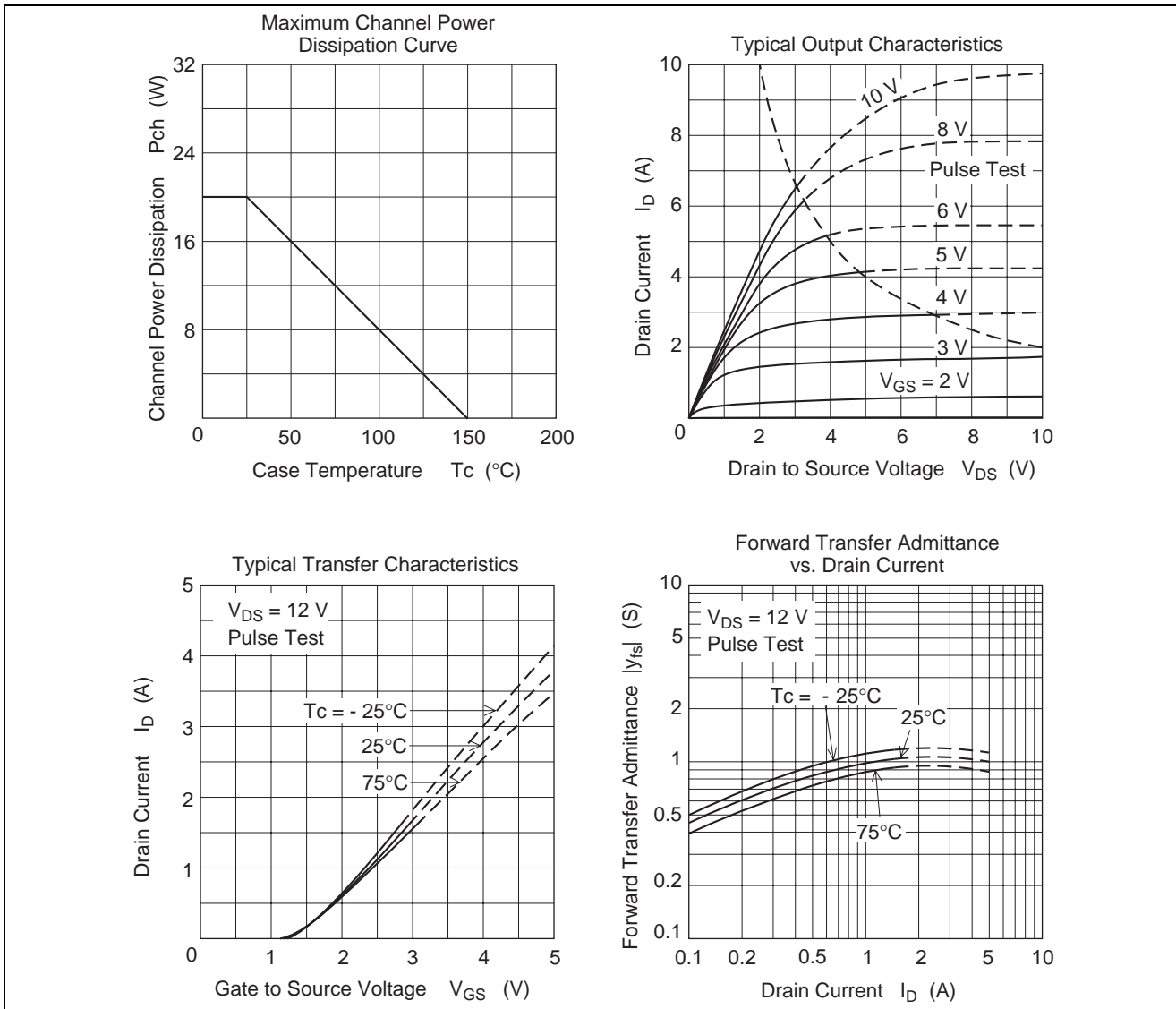
2. Value at T_c = 25°C

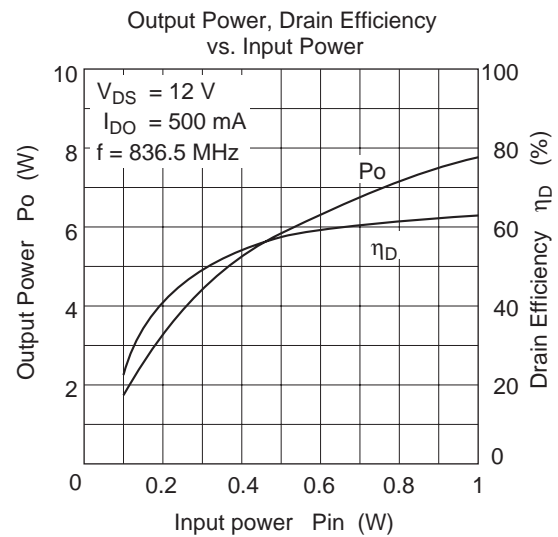
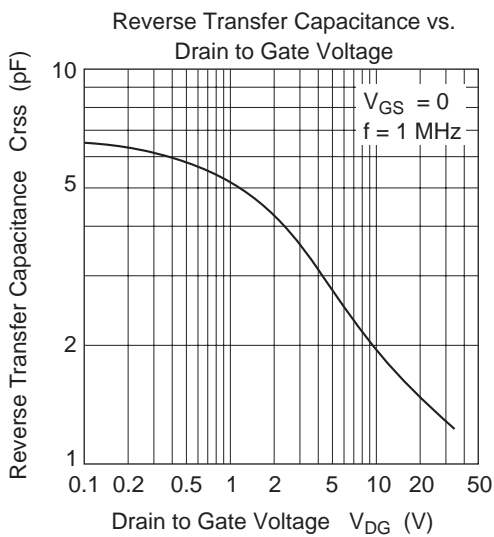
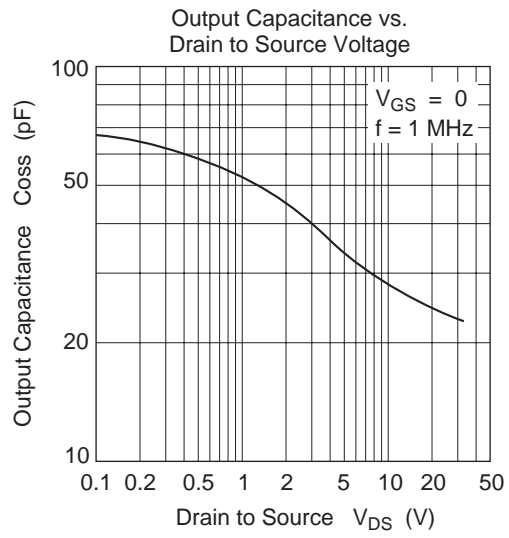
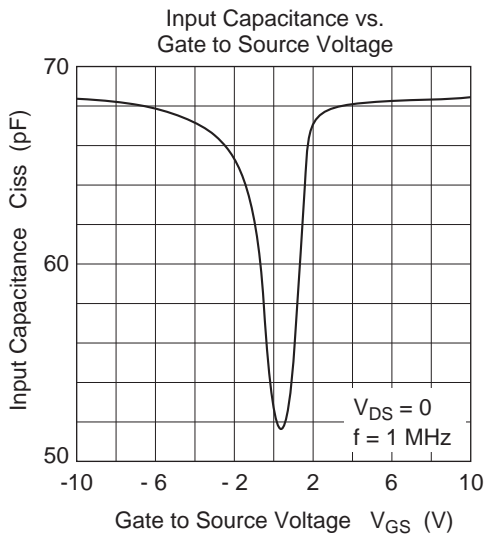
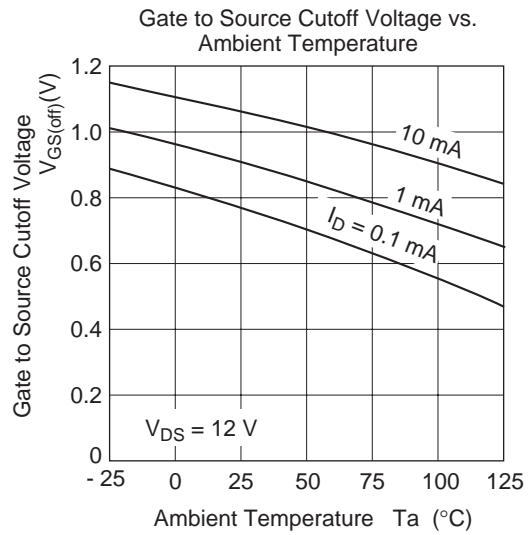
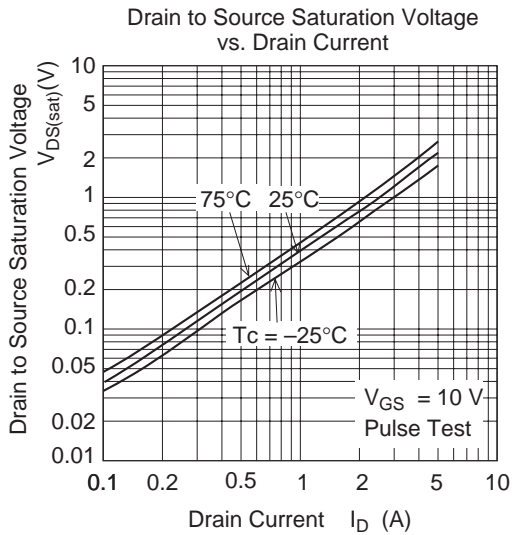
Electrical Characteristics

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

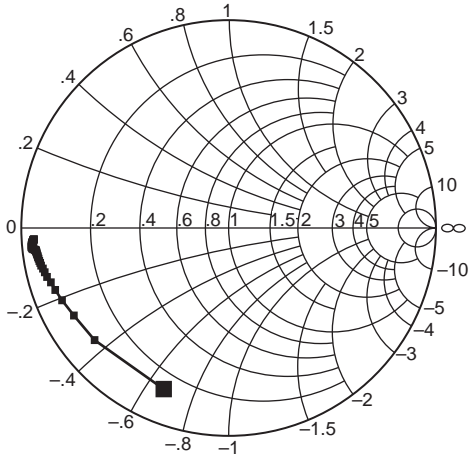
Item	Symbol	Min.	Typ	Max.	Unit	Test Conditions
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 12\text{ V}, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 5.0	μA	$V_{GS} = \pm 10\text{ V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.6	—	1.3	V	$V_{DS} = 12\text{ V}, I_D = 6\text{ mA}$
Input capacitance	C_{iss}	—	68	—	pF	$V_{GS} = 5\text{ V}, V_{DS} = 0, f = 1\text{ MHz}$
Output capacitance	C_{oss}	—	27	—	pF	$V_{DS} = 12\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$
Output Power	P_{out}	5.37	7	—	W	$V_{DS} = 12\text{ V}, I_{DO} = 500\text{ mA},$ $f = 836.5\text{ MHz}, P_{in} = 0.89\text{ W}$
Drain Efficiency	η_D	50	60	—	%	

Main Characteristics



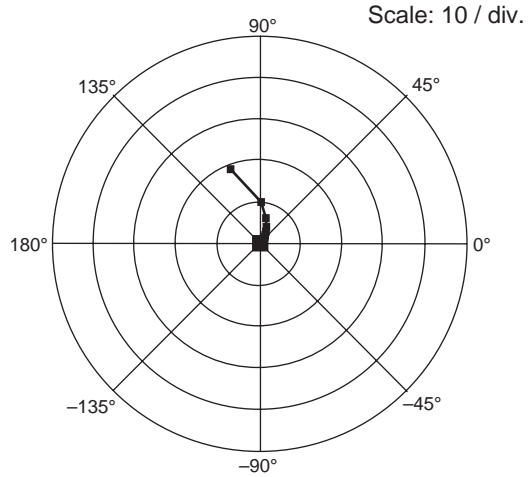


S11 Parameter vs. Frequency



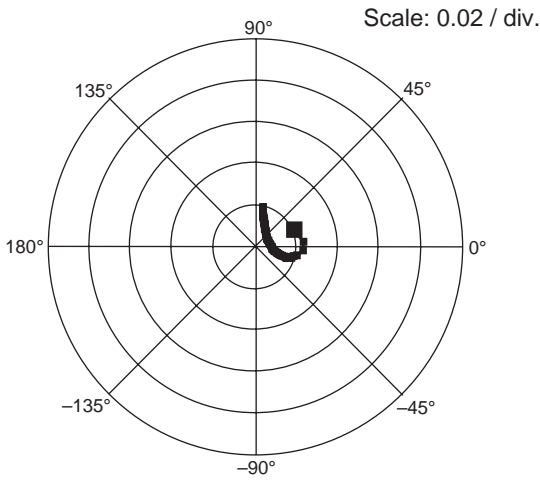
Test condition: $V_{DS} = 12\text{ V}$, $Z_O = 50\ \Omega$
 50 to 2550 MHz (50 MHz step)
 ■—■ ($I_D = 500\text{ mA}$)

S21 Parameter vs. Frequency



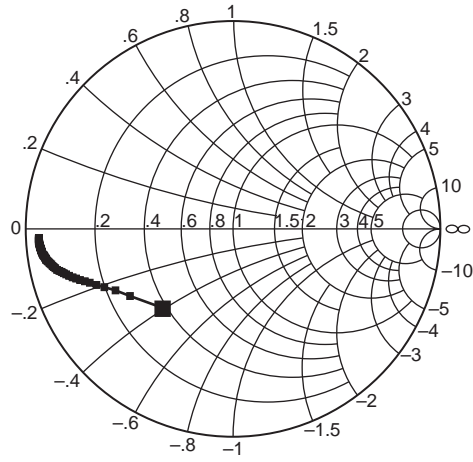
Test condition: $V_{DS} = 12\text{ V}$, $Z_O = 50\ \Omega$
 50 to 2550 MHz (50 MHz step)
 ■—■ ($I_D = 500\text{ mA}$)

S12 Parameter vs. Frequency



Test condition: $V_{DS} = 12\text{ V}$, $Z_O = 50\ \Omega$
 50 to 2550 MHz (50 MHz step)
 ■—■ ($I_D = 500\text{ mA}$)

S22 Parameter vs. Frequency



Test condition: $V_{DS} = 12\text{ V}$, $Z_O = 50\ \Omega$
 50 to 2550 MHz (50 MHz step)
 ■—■ ($I_D = 500\text{ mA}$)

S Parameter

 $(V_{DS} = 4.5 \text{ V}, I_D = 300 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.814	-126.4	14.75	105.9	0.0257	15.0	0.630	-152.3
100	0.818	-149.2	7.58	85.9	0.0275	2.3	0.700	-161.2
150	0.830	-156.6	4.89	75.0	0.0272	-9.2	0.732	-163.7
200	0.849	-160.6	3.42	67.2	0.0249	-14.6	0.763	-165.2
250	0.866	-163.2	2.56	61.0	0.0235	-19.0	0.789	-166.2
300	0.879	-165.0	1.99	56.1	0.0216	-19.7	0.811	-167.1
350	0.893	-166.5	1.60	52.1	0.0196	-22.7	0.827	-167.9
400	0.902	-167.7	1.31	49.0	0.0185	-23.0	0.842	-168.6
450	0.909	-168.7	1.10	46.3	0.0171	-23.9	0.852	-169.2
500	0.917	-169.5	0.93	44.0	0.0158	-24.0	0.862	-169.8
550	0.921	-170.3	0.81	42.0	0.0146	-22.9	0.871	-170.3
600	0.925	-170.9	0.71	40.3	0.0138	-21.7	0.878	-170.8
650	0.927	-171.5	0.62	38.7	0.0128	-21.5	0.884	-171.2
700	0.930	-171.9	0.56	37.3	0.0119	-19.5	0.889	-171.6
750	0.931	-172.3	0.50	35.9	0.0112	-16.8	0.894	-171.9
800	0.932	-172.6	0.45	34.7	0.0106	-14.2	0.899	-172.2
850	0.933	-172.9	0.41	33.6	0.0096	-12.6	0.903	-172.6
900	0.934	-173.1	0.38	32.5	0.0093	-8.3	0.906	-172.9
950	0.934	-173.3	0.35	31.5	0.0089	-6.2	0.909	-173.0
1000	0.935	-173.5	0.32	30.6	0.0085	-1.3	0.911	-173.3
1050	0.935	-173.5	0.30	29.8	0.0083	2.2	0.913	-173.6
1100	0.935	-173.6	0.28	28.8	0.0080	6.6	0.916	-173.7
1150	0.936	-173.6	0.26	27.9	0.0077	12.7	0.918	-174.0
1200	0.936	-173.5	0.24	27.3	0.0076	17.6	0.921	-174.1
1250	0.939	-173.3	0.22	26.7	0.0076	23.9	0.924	-174.4
1300	0.946	-173.3	0.21	26.5	0.0077	30.3	0.924	-174.6
1350	0.954	-173.6	0.20	26.6	0.0082	33.8	0.926	-174.8
1400	0.962	-174.1	0.19	26.6	0.0084	37.6	0.927	-174.9
1450	0.963	-174.6	0.18	26.2	0.0088	39.5	0.928	-175.1
1500	0.961	-174.8	0.17	25.7	0.0089	41.8	0.929	-175.2
1550	0.959	-175.1	0.17	25.0	0.0090	44.4	0.932	-175.3
1600	0.956	-175.2	0.16	24.4	0.0094	47.9	0.933	-175.5
1650	0.954	-175.3	0.15	23.7	0.0097	50.7	0.934	-175.8
1700	0.953	-175.5	0.15	23.1	0.0099	53.4	0.935	-175.9
1750	0.951	-175.6	0.14	22.6	0.0102	54.7	0.936	-176.1
1800	0.951	-175.7	0.14	22.1	0.0106	57.5	0.936	-176.3
1850	0.951	-175.8	0.13	21.6	0.0111	59.1	0.937	-176.5
1900	0.950	-175.8	0.12	21.2	0.0114	62.0	0.937	-176.6
1950	0.951	-175.9	0.12	20.8	0.0118	63.6	0.938	-176.9
2000	0.951	-175.9	0.12	20.5	0.0121	64.7	0.938	-177.0
2050	0.949	-175.9	0.11	20.3	0.0125	66.5	0.939	-177.2
2100	0.948	-176.0	0.11	20.1	0.0133	68.2	0.939	-177.3
2150	0.946	-176.1	0.10	19.9	0.0134	69.7	0.939	-177.6
2200	0.947	-176.2	0.10	19.7	0.0142	70.8	0.940	-177.6
2250	0.946	-176.2	0.10	19.7	0.0145	71.0	0.941	-177.8
2300	0.946	-176.4	0.09	19.4	0.0153	72.6	0.941	-178.0
2350	0.946	-176.5	0.09	19.3	0.0157	73.2	0.942	-178.2
2400	0.947	-176.5	0.09	19.3	0.0161	73.3	0.941	-178.5
2450	0.945	-176.5	0.09	19.1	0.0165	73.9	0.941	-178.8
2500	0.944	-176.7	0.08	19.1	0.0168	75.4	0.941	-178.9
2550	0.943	-176.7	0.08	19.3	0.0173	75.5	0.939	-179.0

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.813	-123.5	16.60	106.7	0.0261	19.7	0.595	-146.1
100	0.819	-147.4	8.55	85.9	0.0266	-1.8	0.671	-157.1
150	0.831	-155.2	5.50	74.7	0.0265	-8.1	0.707	-160.4
200	0.852	-159.6	3.84	66.7	0.0238	-15.0	0.743	-162.3
250	0.868	-162.4	2.86	60.5	0.0219	-18.9	0.772	-163.7
300	0.881	-164.4	2.23	55.7	0.0201	-21.0	0.796	-164.9
350	0.895	-166.0	1.78	51.8	0.0190	-23.2	0.813	-165.9
400	0.904	-167.3	1.46	48.7	0.0176	-23.9	0.829	-166.7
450	0.911	-168.4	1.22	46.0	0.0163	-23.7	0.841	-167.5
500	0.918	-169.3	1.04	43.8	0.0151	-23.1	0.851	-168.2
550	0.923	-170.1	0.90	41.7	0.0139	-23.2	0.861	-168.8
600	0.926	-170.6	0.79	40.0	0.0131	-22.2	0.870	-169.4
650	0.928	-171.2	0.70	38.3	0.0122	-20.0	0.876	-169.8
700	0.931	-171.7	0.62	36.8	0.0115	-18.8	0.882	-170.3
750	0.932	-172.1	0.56	35.4	0.0107	-16.9	0.887	-170.6
800	0.933	-172.4	0.51	34.1	0.0101	-14.7	0.893	-171.0
850	0.934	-172.8	0.46	32.8	0.0095	-10.2	0.897	-171.4
900	0.935	-173.0	0.42	31.7	0.0089	-7.1	0.901	-171.7
950	0.936	-173.2	0.39	30.6	0.0084	-3.8	0.904	-171.9
1000	0.936	-173.4	0.36	29.6	0.0081	1.1	0.906	-172.3
1050	0.937	-173.4	0.33	28.7	0.0079	4.6	0.909	-172.5
1100	0.937	-173.5	0.31	27.7	0.0074	10.5	0.913	-172.7
1150	0.937	-173.6	0.29	26.7	0.0072	13.7	0.915	-173.0
1200	0.937	-173.5	0.27	25.9	0.0073	19.9	0.918	-173.2
1250	0.939	-173.5	0.25	25.2	0.0074	25.8	0.922	-173.4
1300	0.943	-173.4	0.23	24.6	0.0072	32.2	0.922	-173.7
1350	0.948	-173.5	0.22	24.3	0.0079	38.3	0.925	-173.9
1400	0.957	-173.8	0.21	24.3	0.0083	42.0	0.926	-174.1
1450	0.961	-174.1	0.20	24.2	0.0086	43.6	0.927	-174.3
1500	0.963	-174.5	0.19	24.0	0.0087	46.9	0.928	-174.5
1550	0.962	-174.9	0.18	23.4	0.0090	47.5	0.931	-174.6
1600	0.958	-175.1	0.17	22.9	0.0094	50.3	0.932	-174.8
1650	0.955	-175.2	0.17	22.1	0.0096	54.1	0.933	-175.1
1700	0.954	-175.4	0.16	21.6	0.0101	55.7	0.935	-175.2
1750	0.952	-175.6	0.15	21.0	0.0103	58.8	0.936	-175.4
1800	0.952	-175.6	0.15	20.5	0.0106	61.0	0.936	-175.7
1850	0.952	-175.8	0.14	19.9	0.0110	63.1	0.938	-175.8
1900	0.951	-175.8	0.14	19.4	0.0113	64.2	0.937	-176.0
1950	0.951	-175.8	0.13	19.0	0.0120	66.3	0.938	-176.3
2000	0.951	-175.9	0.13	18.6	0.0123	67.7	0.938	-176.4
2050	0.949	-175.8	0.12	18.2	0.0127	69.5	0.939	-176.6
2100	0.948	-175.9	0.12	18.0	0.0133	70.7	0.940	-176.8
2150	0.947	-176.0	0.11	17.8	0.0138	71.9	0.940	-177.0
2200	0.947	-176.2	0.11	17.5	0.0144	72.9	0.941	-177.1
2250	0.947	-176.1	0.11	17.3	0.0149	73.8	0.942	-177.3
2300	0.946	-176.3	0.10	17.1	0.0153	74.0	0.941	-177.5
2350	0.946	-176.4	0.10	17.0	0.0158	74.7	0.943	-177.7
2400	0.947	-176.5	0.10	16.9	0.0163	75.3	0.942	-178.0
2450	0.945	-176.4	0.09	16.7	0.0166	75.9	0.942	-178.3
2500	0.944	-176.6	0.09	16.7	0.0174	76.2	0.942	-178.5
2550	0.943	-176.6	0.09	16.9	0.0178	77.0	0.940	-178.6

$(V_{DS} = 7.5 \text{ V}, I_D = 300 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.817	-120.2	17.99	107.7	0.0266	16.9	0.567	-140.0
100	0.820	-145.5	9.32	86.1	0.0271	1.4	0.646	-153.4
150	0.836	-153.9	5.98	74.6	0.0255	-7.4	0.687	-157.4
200	0.856	-158.7	4.16	66.6	0.0229	-16.2	0.726	-159.8
250	0.873	-161.8	3.09	60.4	0.0214	-17.7	0.757	-161.5
300	0.886	-164.0	2.41	55.6	0.0204	-20.7	0.783	-163.0
350	0.899	-165.7	1.93	51.7	0.0187	-22.6	0.802	-164.2
400	0.907	-167.0	1.58	48.6	0.0167	-22.6	0.819	-165.1
450	0.914	-168.1	1.33	46.0	0.0157	-22.9	0.831	-166.0
500	0.920	-169.1	1.13	43.6	0.0147	-22.9	0.842	-166.8
550	0.923	-169.9	0.98	41.5	0.0136	-23.8	0.852	-167.4
600	0.927	-170.5	0.86	39.7	0.0126	-21.4	0.862	-168.0
650	0.929	-171.1	0.76	37.9	0.0118	-19.3	0.869	-168.6
700	0.931	-171.6	0.68	36.3	0.0109	-18.5	0.875	-169.1
750	0.932	-172.0	0.61	34.8	0.0104	-16.7	0.882	-169.5
800	0.933	-172.4	0.55	33.3	0.0095	-13.6	0.888	-169.8
850	0.933	-172.7	0.50	32.0	0.0091	-9.5	0.893	-170.3
900	0.935	-172.9	0.46	30.8	0.0086	-7.1	0.897	-170.6
950	0.935	-173.1	0.42	29.6	0.0080	-2.2	0.901	-170.9
1000	0.935	-173.3	0.39	28.6	0.0076	1.1	0.904	-171.3
1050	0.936	-173.3	0.36	27.5	0.0072	6.5	0.907	-171.6
1100	0.936	-173.4	0.33	26.5	0.0071	11.6	0.911	-171.8
1150	0.936	-173.5	0.31	25.4	0.0068	16.1	0.913	-172.1
1200	0.937	-173.5	0.29	24.6	0.0070	24.8	0.917	-172.4
1250	0.938	-173.4	0.27	23.8	0.0069	29.9	0.921	-172.6
1300	0.941	-173.4	0.25	23.1	0.0070	35.7	0.921	-172.9
1350	0.946	-173.5	0.24	22.6	0.0074	40.3	0.924	-173.1
1400	0.954	-173.7	0.22	22.5	0.0080	43.8	0.925	-173.3
1450	0.959	-174.0	0.21	22.2	0.0084	47.3	0.927	-173.6
1500	0.962	-174.3	0.20	22.1	0.0086	49.9	0.928	-173.8
1550	0.962	-174.7	0.19	21.7	0.0090	52.7	0.930	-173.9
1600	0.960	-174.9	0.18	21.3	0.0094	55.3	0.932	-174.1
1650	0.957	-175.2	0.18	20.7	0.0096	57.5	0.933	-174.5
1700	0.956	-175.3	0.17	20.1	0.0100	59.4	0.935	-174.6
1750	0.953	-175.5	0.16	19.6	0.0106	61.7	0.936	-174.8
1800	0.953	-175.6	0.16	19.1	0.0107	63.4	0.937	-175.1
1850	0.952	-175.8	0.15	18.4	0.0111	65.9	0.938	-175.3
1900	0.951	-175.8	0.14	18.0	0.0117	66.6	0.938	-175.5
1950	0.951	-175.8	0.14	17.4	0.0120	68.4	0.939	-175.8
2000	0.951	-175.9	0.13	17.1	0.0126	70.4	0.939	-175.9
2050	0.949	-175.9	0.13	16.6	0.0130	71.7	0.939	-176.1
2100	0.948	-175.9	0.12	16.3	0.0134	72.6	0.940	-176.3
2150	0.946	-176.1	0.12	15.9	0.0139	73.7	0.941	-176.5
2200	0.946	-176.2	0.12	15.7	0.0146	74.5	0.942	-176.7
2250	0.946	-176.2	0.11	15.5	0.0151	75.8	0.943	-176.8
2300	0.945	-176.3	0.11	15.1	0.0156	75.9	0.942	-177.1
2350	0.945	-176.5	0.10	15.0	0.0161	75.9	0.943	-177.3
2400	0.946	-176.5	0.10	14.9	0.0167	76.9	0.943	-177.6
2450	0.945	-176.5	0.10	14.5	0.0171	77.0	0.943	-177.8
2500	0.943	-176.7	0.09	14.5	0.0176	78.2	0.942	-178.1
2550	0.942	-176.7	0.09	14.5	0.0180	78.0	0.941	-178.2

$(V_{DS} = 12 \text{ V}, I_D = 300 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.835	-112.4	19.94	111.2	0.0210	19.4	0.509	-128.1
100	0.840	-140.6	10.54	87.7	0.0250	2.9	0.592	-145.3
150	0.852	-150.8	6.75	75.7	0.0223	-7.7	0.640	-151.1
200	0.872	-156.6	4.69	67.5	0.0215	-12.4	0.685	-154.5
250	0.886	-160.3	3.50	61.3	0.0199	-16.4	0.718	-156.7
300	0.896	-162.9	2.74	56.6	0.0185	-19.0	0.746	-158.6
350	0.907	-164.9	2.21	52.5	0.0169	-20.1	0.768	-160.1
400	0.914	-166.4	1.83	49.2	0.0157	-21.9	0.788	-161.2
450	0.919	-167.6	1.53	46.2	0.0147	-22.3	0.804	-162.2
500	0.925	-168.6	1.31	43.5	0.0136	-22.7	0.818	-163.2
550	0.928	-169.6	1.14	41.0	0.0126	-22.5	0.831	-164.0
600	0.930	-170.2	1.00	38.8	0.0118	-22.0	0.843	-164.7
650	0.932	-170.9	0.88	36.6	0.0109	-20.2	0.853	-165.3
700	0.934	-171.4	0.79	34.7	0.0098	-18.3	0.862	-166.0
750	0.935	-171.9	0.71	32.8	0.0092	-16.3	0.871	-166.5
800	0.936	-172.3	0.64	31.0	0.0085	-12.5	0.878	-167.0
850	0.936	-172.7	0.58	29.4	0.0078	-9.5	0.885	-167.6
900	0.937	-172.9	0.53	28.0	0.0075	-2.8	0.891	-168.1
950	0.937	-173.2	0.48	26.5	0.0070	1.0	0.896	-168.4
1000	0.938	-173.4	0.45	25.2	0.0064	5.0	0.900	-169.0
1050	0.937	-173.5	0.41	24.0	0.0064	11.0	0.904	-169.4
1100	0.936	-173.7	0.38	22.7	0.0060	17.4	0.909	-169.7
1150	0.936	-173.8	0.35	21.5	0.0060	27.5	0.912	-170.1
1200	0.935	-173.8	0.33	20.5	0.0061	32.9	0.916	-170.4
1250	0.935	-173.8	0.30	19.5	0.0062	37.6	0.920	-170.8
1300	0.936	-173.7	0.28	18.7	0.0067	46.3	0.922	-171.1
1350	0.939	-173.8	0.26	17.9	0.0069	50.3	0.925	-171.4
1400	0.946	-173.8	0.25	17.5	0.0075	53.6	0.926	-171.7
1450	0.950	-173.9	0.23	17.2	0.0080	56.9	0.928	-172.0
1500	0.955	-174.0	0.22	17.0	0.0085	60.2	0.929	-172.3
1550	0.958	-174.4	0.21	16.7	0.0090	61.2	0.932	-172.5
1600	0.959	-174.6	0.20	16.4	0.0094	63.3	0.934	-172.8
1650	0.959	-174.9	0.19	16.0	0.0101	65.8	0.935	-173.1
1700	0.959	-175.2	0.18	15.7	0.0102	68.0	0.937	-173.4
1750	0.958	-175.5	0.17	15.3	0.0109	68.1	0.938	-173.6
1800	0.958	-175.6	0.17	14.9	0.0113	70.7	0.939	-173.9
1850	0.958	-175.8	0.16	14.5	0.0118	71.0	0.940	-174.1
1900	0.957	-175.9	0.15	14.2	0.0122	72.3	0.940	-174.4
1950	0.957	-176.0	0.15	13.8	0.0127	73.1	0.941	-174.7
2000	0.957	-176.2	0.14	13.4	0.0132	74.4	0.941	-174.9
2050	0.955	-176.2	0.14	12.9	0.0137	75.4	0.941	-175.1
2100	0.954	-176.3	0.13	12.6	0.0142	76.7	0.943	-175.3
2150	0.952	-176.4	0.13	12.1	0.0148	77.6	0.943	-175.6
2200	0.952	-176.6	0.12	11.7	0.0153	77.7	0.944	-175.7
2250	0.952	-176.6	0.12	11.5	0.0159	78.7	0.945	-175.9
2300	0.951	-176.8	0.12	11.0	0.0163	79.1	0.945	-176.2
2350	0.951	-177.0	0.11	10.8	0.0169	78.7	0.946	-176.4
2400	0.952	-177.1	0.11	10.5	0.0173	79.2	0.945	-176.7
2450	0.950	-177.0	0.10	10.3	0.0179	79.5	0.945	-177.0
2500	0.949	-177.3	0.10	10.0	0.0185	80.0	0.945	-177.2
2550	0.948	-177.3	0.10	10.1	0.0191	80.1	0.944	-177.4

$(V_{DS} = 4.5 \text{ V}, I_D = 500 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.818	-126.6	14.27	106.4	0.0256	19.6	0.656	-157.5
100	0.829	-149.6	7.33	86.6	0.0256	0.6	0.725	-164.6
150	0.840	-157.0	4.73	76.1	0.0242	-7.6	0.752	-166.6
200	0.859	-161.1	3.32	68.7	0.0229	-12.1	0.778	-167.8
250	0.873	-163.7	2.49	62.9	0.0207	-15.8	0.800	-168.5
300	0.885	-165.6	1.95	58.5	0.0192	-18.4	0.818	-169.3
350	0.898	-167.0	1.57	54.8	0.0178	-20.1	0.831	-169.9
400	0.906	-168.2	1.30	51.9	0.0169	-19.5	0.844	-170.4
450	0.912	-169.2	1.09	49.5	0.0157	-19.3	0.852	-170.8
500	0.919	-170.0	0.93	47.5	0.0148	-19.1	0.861	-171.2
550	0.923	-170.7	0.81	45.5	0.0138	-18.1	0.870	-171.8
600	0.926	-171.3	0.71	43.8	0.0131	-16.4	0.875	-172.2
650	0.928	-171.8	0.63	42.2	0.0123	-15.8	0.879	-172.4
700	0.930	-172.2	0.57	40.9	0.0116	-13.5	0.883	-172.7
750	0.931	-172.6	0.51	39.6	0.0109	-10.5	0.887	-172.7
800	0.932	-172.9	0.47	38.3	0.0104	-7.8	0.895	-172.9
850	0.932	-173.2	0.43	37.0	0.0100	-5.6	0.900	-173.4
900	0.934	-173.4	0.39	35.9	0.0095	-2.5	0.901	-173.7
950	0.934	-173.6	0.36	34.9	0.0093	-0.8	0.903	-173.8
1000	0.934	-173.7	0.33	33.9	0.0087	4.0	0.905	-174.0
1050	0.935	-173.7	0.31	33.0	0.0087	8.3	0.907	-174.2
1100	0.935	-173.8	0.29	32.0	0.0082	13.3	0.910	-174.3
1150	0.935	-173.8	0.27	31.0	0.0080	18.3	0.913	-174.5
1200	0.937	-173.6	0.25	30.3	0.0080	22.4	0.916	-174.6
1250	0.941	-173.5	0.24	29.8	0.0083	27.1	0.919	-174.8
1300	0.948	-173.5	0.22	29.6	0.0085	32.7	0.919	-175.0
1350	0.955	-174.0	0.21	29.5	0.0087	35.4	0.921	-175.2
1400	0.961	-174.4	0.20	29.2	0.0091	37.6	0.922	-175.3
1450	0.960	-174.8	0.19	28.6	0.0092	40.0	0.924	-175.4
1500	0.959	-175.0	0.19	28.1	0.0093	43.1	0.925	-175.5
1550	0.957	-175.3	0.18	27.3	0.0096	45.2	0.929	-175.6
1600	0.954	-175.4	0.17	26.6	0.0099	49.1	0.930	-175.9
1650	0.952	-175.5	0.16	25.8	0.0102	51.3	0.930	-176.2
1700	0.951	-175.6	0.16	25.2	0.0104	52.6	0.930	-176.4
1750	0.950	-175.8	0.15	24.6	0.0108	55.8	0.930	-176.5
1800	0.950	-175.8	0.14	24.0	0.0111	57.1	0.929	-176.6
1850	0.950	-175.9	0.14	23.6	0.0114	59.7	0.929	-176.6
1900	0.949	-175.9	0.13	23.2	0.0118	61.5	0.930	-176.6
1950	0.949	-176.0	0.13	22.8	0.0122	63.3	0.935	-176.8
2000	0.950	-176.1	0.12	22.4	0.0126	65.0	0.936	-177.1
2050	0.948	-176.0	0.12	22.0	0.0131	66.4	0.937	-177.4
2100	0.947	-176.1	0.11	21.8	0.0135	68.0	0.936	-177.6
2150	0.945	-176.2	0.11	21.4	0.0141	69.3	0.935	-177.8
2200	0.945	-176.3	0.11	21.3	0.0146	70.8	0.935	-177.9
2250	0.945	-176.3	0.10	21.2	0.0151	71.0	0.936	-177.9
2300	0.944	-176.5	0.10	20.8	0.0155	72.4	0.937	-178.1
2350	0.944	-176.6	0.10	20.7	0.0160	72.5	0.939	-178.3
2400	0.946	-176.7	0.10	20.6	0.0165	72.8	0.938	-178.6
2450	0.944	-176.6	0.09	20.5	0.0169	73.9	0.938	-178.9
2500	0.943	-176.8	0.09	20.3	0.0173	74.0	0.938	-179.1
2550	0.942	-176.8	0.09	20.4	0.0178	74.8	0.936	-179.2

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.819	-123.7	16.07	106.8	0.0245	18.4	0.615	-151.4
100	0.826	-147.5	8.25	86.2	0.0251	0.2	0.692	-160.6
150	0.841	-155.4	5.29	75.4	0.0241	-7.5	0.726	-163.4
200	0.861	-159.9	3.69	67.9	0.0219	-12.3	0.757	-165.0
250	0.876	-162.9	2.76	62.2	0.0206	-16.2	0.781	-166.2
300	0.888	-164.9	2.15	57.9	0.0188	-17.8	0.801	-167.2
350	0.901	-166.5	1.73	54.3	0.0175	-19.0	0.815	-167.9
400	0.908	-167.8	1.43	51.5	0.0163	-19.6	0.829	-168.6
450	0.914	-168.8	1.21	49.1	0.0153	-19.6	0.838	-169.1
500	0.920	-169.7	1.04	47.0	0.0142	-18.6	0.848	-169.6
550	0.924	-170.5	0.90	44.9	0.0134	-18.1	0.857	-170.2
600	0.926	-171.0	0.79	43.2	0.0128	-16.9	0.863	-170.6
650	0.928	-171.6	0.71	41.5	0.0119	-16.3	0.869	-171.0
700	0.930	-172.0	0.63	40.0	0.0112	-12.8	0.873	-171.3
750	0.931	-172.4	0.57	38.5	0.0104	-11.1	0.879	-171.4
800	0.933	-172.8	0.52	37.1	0.0100	-7.9	0.888	-171.6
850	0.933	-173.1	0.47	35.7	0.0095	-5.6	0.893	-172.1
900	0.934	-173.2	0.44	34.5	0.0089	-2.4	0.895	-172.4
950	0.934	-173.4	0.40	33.3	0.0086	1.5	0.898	-172.6
1000	0.935	-173.6	0.37	32.2	0.0081	3.1	0.900	-172.8
1050	0.936	-173.6	0.34	31.2	0.0081	9.1	0.903	-173.1
1100	0.936	-173.7	0.32	30.1	0.0079	14.8	0.907	-173.2
1150	0.936	-173.7	0.30	29.1	0.0077	19.8	0.909	-173.4
1200	0.937	-173.7	0.28	28.1	0.0076	24.8	0.913	-173.6
1250	0.939	-173.7	0.26	27.3	0.0080	30.3	0.917	-173.8
1300	0.943	-173.6	0.24	26.8	0.0079	34.6	0.917	-174.0
1350	0.949	-173.8	0.23	26.4	0.0081	38.4	0.920	-174.2
1400	0.957	-174.1	0.22	26.3	0.0087	42.1	0.921	-174.4
1450	0.960	-174.4	0.21	26.1	0.0090	44.5	0.922	-174.5
1500	0.960	-174.8	0.20	25.7	0.0091	47.0	0.924	-174.6
1550	0.959	-175.1	0.19	25.0	0.0096	48.8	0.928	-174.8
1600	0.956	-175.2	0.18	24.3	0.0097	51.7	0.930	-175.1
1650	0.954	-175.4	0.18	23.6	0.0100	54.2	0.929	-175.4
1700	0.952	-175.5	0.17	22.9	0.0102	56.0	0.930	-175.6
1750	0.951	-175.7	0.16	22.2	0.0108	58.8	0.930	-175.7
1800	0.950	-175.7	0.15	21.6	0.0110	61.3	0.929	-175.9
1850	0.950	-175.9	0.15	21.1	0.0114	62.8	0.930	-175.9
1900	0.949	-175.9	0.14	20.7	0.0118	64.5	0.930	-176.0
1950	0.949	-176.0	0.14	20.3	0.0123	66.7	0.935	-176.2
2000	0.950	-176.0	0.13	19.8	0.0127	67.5	0.937	-176.5
2050	0.948	-176.0	0.13	19.4	0.0131	68.3	0.937	-176.8
2100	0.947	-176.0	0.12	19.0	0.0136	70.5	0.937	-177.0
2150	0.945	-176.2	0.12	18.8	0.0141	71.5	0.936	-177.2
2200	0.945	-176.3	0.11	18.6	0.0147	72.5	0.936	-177.3
2250	0.945	-176.3	0.11	18.4	0.0152	73.4	0.937	-177.4
2300	0.944	-176.5	0.11	18.1	0.0156	73.9	0.938	-177.6
2350	0.944	-176.6	0.10	17.9	0.0162	74.3	0.940	-177.8
2400	0.945	-176.6	0.10	17.7	0.0166	74.9	0.939	-178.1
2450	0.944	-176.6	0.10	17.5	0.0170	75.5	0.939	-178.4
2500	0.942	-176.8	0.09	17.3	0.0177	76.2	0.939	-178.6
2550	0.941	-176.8	0.09	17.4	0.0183	76.5	0.937	-178.7

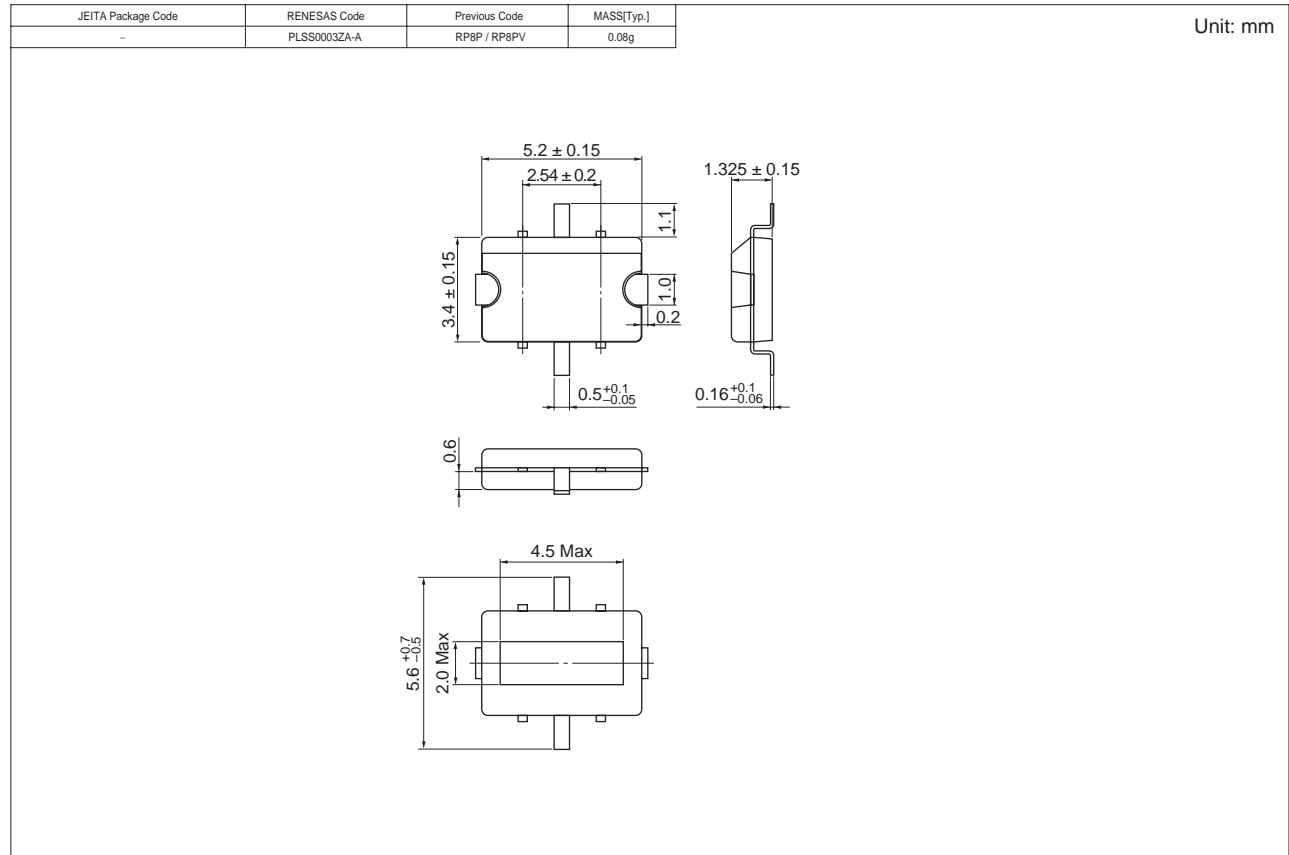
$(V_{DS} = 7.5 \text{ V}, I_D = 500 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.821	-120.3	17.31	107.6	0.0224	17.9	0.584	-145.8
100	0.827	-145.4	8.91	86.2	0.0252	-0.4	0.664	-156.9
150	0.844	-153.9	5.68	75.1	0.0223	-5.2	0.703	-160.5
200	0.865	-158.9	3.95	67.6	0.0209	-13.2	0.738	-162.6
250	0.881	-162.2	2.95	62.0	0.0197	-15.3	0.764	-164.1
300	0.893	-164.4	2.30	57.7	0.0183	-17.8	0.785	-165.3
350	0.904	-166.2	1.86	54.2	0.0170	-18.7	0.801	-166.2
400	0.912	-167.6	1.54	51.3	0.0161	-19.9	0.815	-166.9
450	0.917	-168.7	1.30	48.8	0.0147	-19.7	0.826	-167.5
500	0.922	-169.6	1.12	46.6	0.0141	-19.0	0.837	-168.0
550	0.926	-170.5	0.98	44.3	0.0130	-18.6	0.847	-168.7
600	0.928	-171.1	0.86	42.4	0.0124	-17.3	0.854	-169.2
650	0.929	-171.7	0.76	40.5	0.0113	-15.9	0.860	-169.6
700	0.931	-172.1	0.68	38.8	0.0109	-15.5	0.866	-169.9
750	0.932	-172.6	0.62	37.2	0.0102	-12.2	0.872	-170.1
800	0.933	-173.0	0.56	35.6	0.0095	-10.0	0.882	-170.3
850	0.933	-173.3	0.51	34.0	0.0089	-5.4	0.888	-170.9
900	0.934	-173.5	0.47	32.6	0.0086	-3.6	0.891	-171.3
950	0.933	-173.7	0.43	31.3	0.0080	0.6	0.895	-171.4
1000	0.933	-173.9	0.40	30.1	0.0077	3.6	0.898	-171.8
1050	0.932	-173.9	0.37	28.9	0.0075	10.2	0.901	-172.0
1100	0.931	-174.0	0.34	27.7	0.0071	16.6	0.905	-172.2
1150	0.931	-174.1	0.32	26.4	0.0071	21.0	0.908	-172.5
1200	0.930	-174.0	0.30	25.5	0.0070	26.1	0.912	-172.7
1250	0.932	-173.8	0.27	24.6	0.0073	32.2	0.916	-172.9
1300	0.936	-173.6	0.26	24.1	0.0073	38.2	0.917	-173.2
1350	0.942	-173.7	0.24	23.7	0.0079	42.6	0.919	-173.4
1400	0.951	-173.9	0.23	23.6	0.0084	45.5	0.921	-173.6
1450	0.956	-174.2	0.22	23.3	0.0087	47.9	0.923	-173.8
1500	0.959	-174.5	0.21	23.1	0.0090	51.7	0.924	-173.9
1550	0.960	-174.9	0.20	22.6	0.0092	53.1	0.929	-174.1
1600	0.958	-175.1	0.19	21.9	0.0097	55.3	0.930	-174.4
1650	0.957	-175.4	0.18	21.3	0.0101	57.3	0.930	-174.8
1700	0.956	-175.6	0.17	20.7	0.0106	60.3	0.931	-175.0
1750	0.955	-175.8	0.17	20.0	0.0110	61.2	0.931	-175.1
1800	0.955	-175.9	0.16	19.5	0.0111	63.5	0.930	-175.3
1850	0.955	-176.1	0.15	19.0	0.0115	66.1	0.931	-175.4
1900	0.954	-176.2	0.15	18.7	0.0120	66.5	0.932	-175.5
1950	0.954	-176.3	0.14	18.2	0.0124	68.5	0.936	-175.7
2000	0.954	-176.4	0.14	17.7	0.0131	69.9	0.938	-176.0
2050	0.952	-176.4	0.13	17.2	0.0134	70.6	0.938	-176.3
2100	0.951	-176.5	0.13	16.9	0.0138	72.1	0.938	-176.5
2150	0.950	-176.6	0.12	16.6	0.0144	73.1	0.937	-176.8
2200	0.950	-176.8	0.12	16.4	0.0149	74.1	0.937	-176.8
2250	0.949	-176.8	0.11	16.2	0.0155	75.0	0.938	-176.9
2300	0.949	-177.0	0.11	15.7	0.0160	74.9	0.939	-177.2
2350	0.949	-177.1	0.11	15.5	0.0167	75.7	0.941	-177.4
2400	0.950	-177.2	0.10	15.2	0.0169	75.9	0.941	-177.7
2450	0.949	-177.2	0.10	15.1	0.0173	76.2	0.940	-178.0
2500	0.948	-177.4	0.10	15.0	0.0179	77.0	0.940	-178.2
2550	0.946	-177.5	0.09	15.0	0.0184	77.1	0.939	-178.4

$(V_{DS} = 12 \text{ V}, I_D = 500 \text{ mA}, Z_O = 50 \Omega)$

f (MHz)	S11		S21		S12		S22	
	Mag	Deg	Mag	Deg	Mag	Deg	Mag	Deg
50	0.838	-112.1	19.26	111.1	0.0193	23.2	0.510	-131.7
100	0.844	-140.2	10.13	87.8	0.0230	5.2	0.596	-147.5
150	0.859	-150.6	6.47	76.1	0.0227	-5.3	0.644	-152.9
200	0.878	-156.6	4.51	68.3	0.0201	-13.0	0.685	-156.0
250	0.890	-160.4	3.38	62.4	0.0187	-15.2	0.716	-158.1
300	0.899	-163.0	2.66	57.8	0.0179	-18.4	0.742	-159.7
350	0.909	-165.0	2.15	53.8	0.0167	-18.9	0.763	-160.9
400	0.914	-166.5	1.79	50.4	0.0156	-21.8	0.782	-161.9
450	0.919	-167.7	1.51	47.4	0.0145	-20.4	0.798	-162.8
500	0.924	-168.7	1.29	44.6	0.0133	-20.7	0.813	-163.5
550	0.927	-169.6	1.13	41.9	0.0125	-20.9	0.827	-164.3
600	0.929	-170.2	0.99	39.6	0.0114	-19.6	0.839	-165.0
650	0.931	-170.8	0.87	37.3	0.0106	-19.0	0.849	-165.6
700	0.933	-171.3	0.78	35.3	0.0097	-16.5	0.857	-166.2
750	0.933	-171.7	0.70	33.3	0.0089	-15.6	0.867	-166.7
800	0.935	-172.1	0.63	31.5	0.0084	-12.1	0.876	-167.1
850	0.936	-172.4	0.57	29.8	0.0076	-9.6	0.884	-167.8
900	0.937	-172.7	0.52	28.3	0.0075	-3.7	0.889	-168.3
950	0.937	-172.9	0.48	26.7	0.0070	2.1	0.894	-168.6
1000	0.938	-173.1	0.44	25.4	0.0066	8.4	0.898	-169.1
1050	0.938	-173.2	0.41	24.3	0.0063	13.2	0.902	-169.5
1100	0.939	-173.3	0.38	23.0	0.0064	22.6	0.907	-169.8
1150	0.939	-173.4	0.35	21.8	0.0062	27.8	0.911	-170.2
1200	0.939	-173.5	0.32	20.7	0.0062	34.0	0.915	-170.5
1250	0.941	-173.5	0.30	19.7	0.0066	39.4	0.919	-170.9
1300	0.943	-173.6	0.28	18.9	0.0068	46.0	0.920	-171.2
1350	0.945	-173.7	0.26	18.2	0.0073	51.6	0.923	-171.5
1400	0.951	-173.9	0.25	17.8	0.0078	54.1	0.924	-171.8
1450	0.954	-174.0	0.23	17.3	0.0083	57.4	0.927	-172.1
1500	0.956	-174.1	0.22	17.1	0.0087	59.7	0.928	-172.3
1550	0.958	-174.5	0.21	16.7	0.0090	63.7	0.932	-172.6
1600	0.958	-174.7	0.20	16.4	0.0095	64.6	0.934	-172.9
1650	0.957	-174.9	0.19	15.9	0.0100	65.3	0.934	-173.3
1700	0.956	-175.1	0.18	15.6	0.0104	67.4	0.935	-173.5
1750	0.955	-175.4	0.17	15.1	0.0111	68.6	0.936	-173.7
1800	0.954	-175.4	0.17	14.6	0.0114	69.8	0.936	-174.0
1850	0.954	-175.7	0.16	14.2	0.0118	71.6	0.938	-174.2
1900	0.953	-175.7	0.15	13.9	0.0124	72.1	0.937	-174.4
1950	0.952	-175.8	0.15	13.3	0.0129	73.0	0.940	-174.7
2000	0.952	-175.9	0.14	12.9	0.0133	74.9	0.941	-174.9
2050	0.950	-175.8	0.14	12.4	0.0138	75.6	0.942	-175.2
2100	0.949	-175.9	0.13	12.0	0.0144	76.7	0.942	-175.4
2150	0.947	-176.0	0.13	11.6	0.0148	77.0	0.942	-175.7
2200	0.947	-176.2	0.12	11.3	0.0155	78.5	0.942	-175.8
2250	0.947	-176.2	0.12	11.0	0.0160	78.6	0.943	-176.0
2300	0.946	-176.3	0.11	10.5	0.0165	79.1	0.944	-176.2
2350	0.946	-176.5	0.11	10.3	0.0170	79.0	0.945	-176.5
2400	0.947	-176.5	0.11	10.1	0.0175	79.3	0.944	-176.8
2450	0.945	-176.5	0.10	9.9	0.0180	80.0	0.944	-177.1
2500	0.944	-176.7	0.10	9.6	0.0186	80.4	0.944	-177.3
2550	0.943	-176.7	0.10	9.9	0.0189	80.0	0.943	-177.5

Package Dimensions



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