

**TOSHIBA**

**3SK320**

TENTATIVE TOSHIBA FIELD EFFECT TRANSISTOR GaAs N-CHANNEL DUAL GATE MES TYPE

# 3SK320

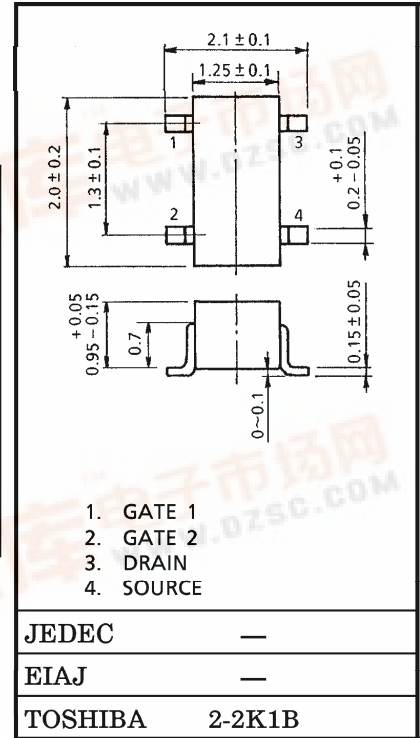
UHF BAND LOW NOISE AMP

UHF BAND MIX

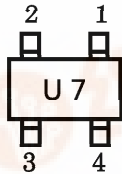
Unit in mm

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate 1-Drain Voltage	V <sub>G1DO</sub>	-6	V
Gate 2-Drain Voltage	V <sub>G2DO</sub>	-6	V
Gate 1-Source Voltage	V <sub>G1S</sub>	-4	V
Gate 2-Source Voltage	V <sub>G2S</sub>	-4	V
Gate 1 Current	I <sub>G1</sub>	1	mA
Gate 2 Current	I <sub>G2</sub>	1	mA
Power Dissipation	P <sub>D</sub>	100	mW
Channel Temperature	T <sub>ch</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C

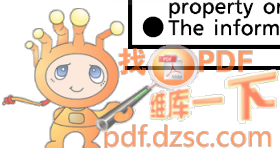


Marking



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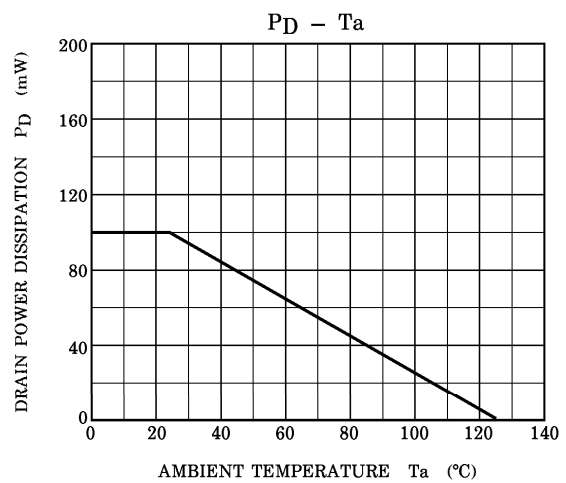
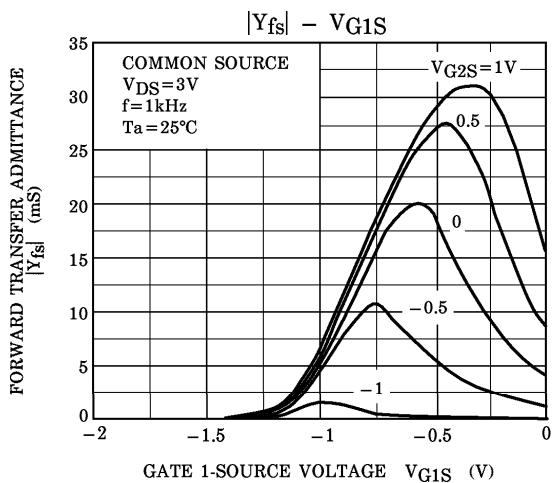
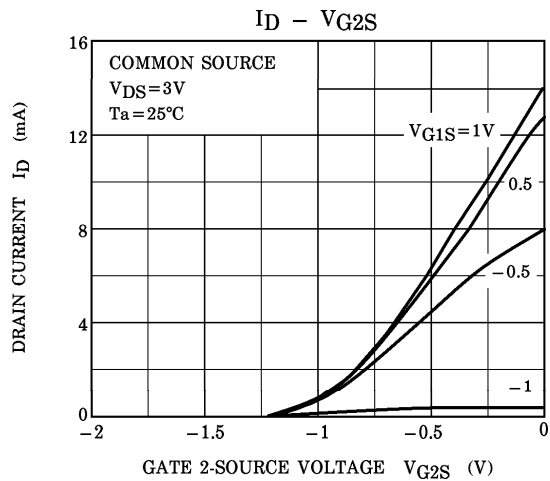
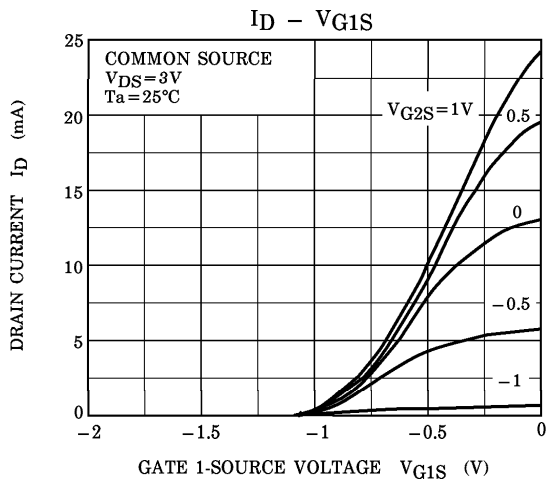
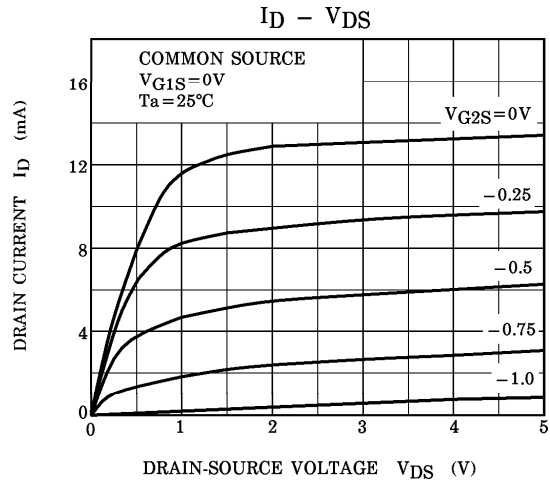
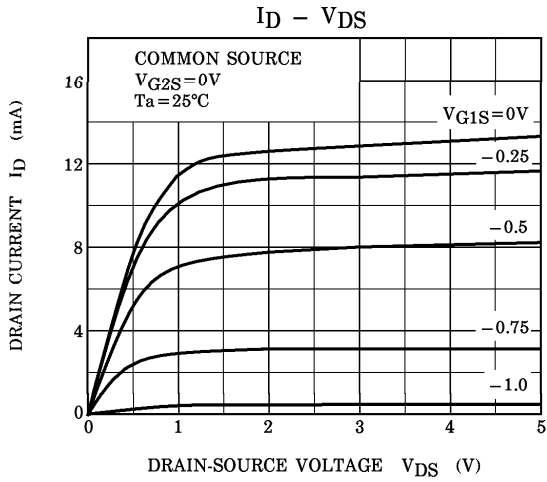


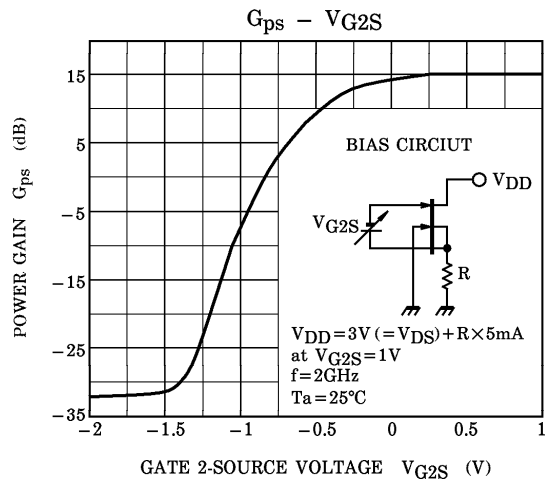
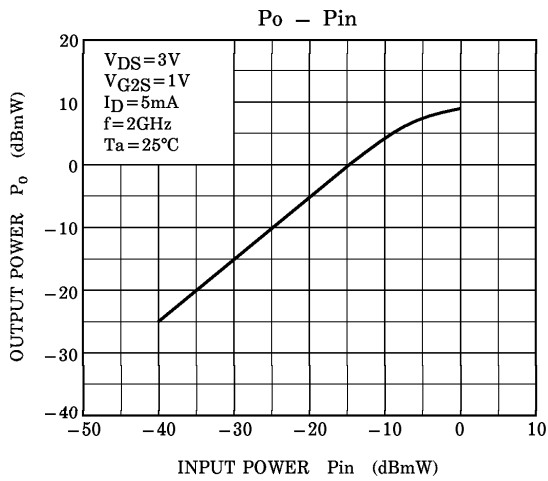
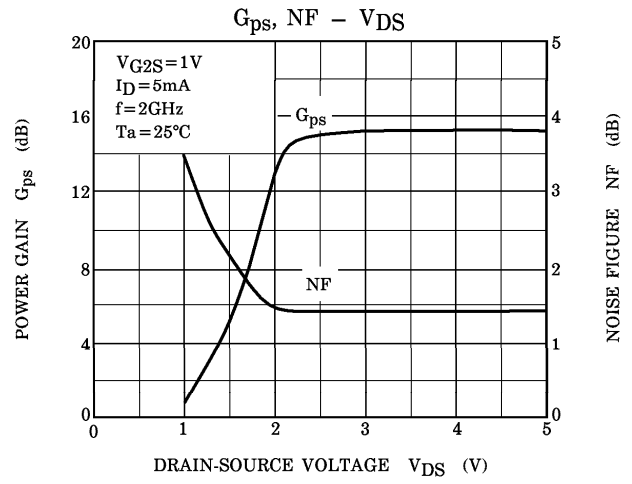
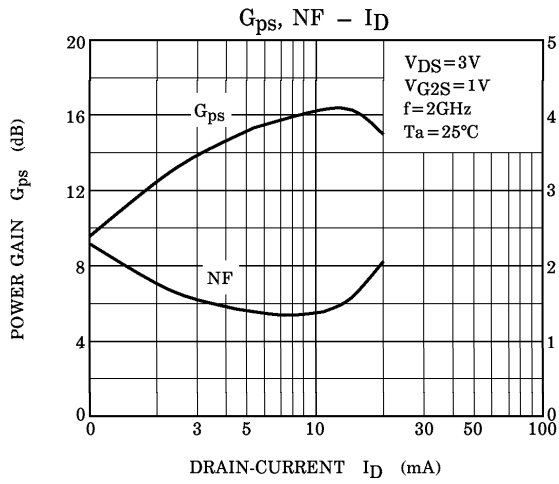
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	$I_{G1SS}$	$V_{DS}=0, V_{G1S}=-3V, V_{G2S}=0$	—	—	-4	$\mu A$
Gate 2 Leakage Current	$I_{G2SS}$	$V_{DS}=0, V_{G1S}=0, V_{G2S}=-3V$	—	—	-4	$\mu A$
Drain Current	$I_{DSS}$	$V_{DS}=3V, V_{G1S}=0, V_{G2S}=0$	9	—	18	mA
Gate 1-Source Cut-off Voltage	$V_{G1S} (OFF)$	$V_{DS}=3V, V_{G2S}=0, I_D=100\mu A$	-0.8	—	-1.4	V
Gate 2-Source Cut-off Voltage	$V_{G2S} (OFF)$	$V_{DS}=3V, V_{G1S}=0, I_D=100\mu A$	-0.8	—	-1.4	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=1kHz$	—	22	—	mS
Input Capacitance	$C_{iss}$	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=1MHz$	—	0.6	1.4	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=1MHz$	—	0.012	0.03	pF
Power Gain (1)	$G_{ps} (1)$	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=800MHz$	—	20.5	—	dB
Noise Figure (1)	NF (1)	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=800MHz$	—	0.9	—	dB
Power Gain (2)	$G_{ps} (2)$	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=2GHz$	12	15	—	dB
Noise Figure (2)	NF (2)	$V_{DS}=3V, V_{G2S}=1V, I_D=5mA, f=2GHz$	—	1.4	2.2	dB

## CAUTION

This device electrostatic sensitivity. Please handle with caution.





**S-PARAMETER**

( $V_{DS}=2V$ ,  $I_D=2mA$ ,  $V_{G2S}=0.5V$ ,  $T_a=25^{\circ}C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.998	-3.5	1.196	174.7	0.0019	59.4	0.968	-2.1
200	0.996	-4.9	1.195	172.8	0.0026	63.7	0.967	-2.9
300	0.992	-6.9	1.194	170.4	0.0034	66.0	0.966	-3.9
400	0.990	-9.3	1.195	167.2	0.0044	69.9	0.964	-5.2
500	0.984	-11.6	1.193	164.1	0.0051	79.0	0.963	-6.6
600	0.979	-14.0	1.195	161.0	0.0064	79.3	0.962	-7.8
700	0.971	-16.3	1.197	158.1	0.0070	77.2	0.960	-9.2
800	0.963	-18.6	1.202	155.0	0.0075	80.3	0.959	-10.5
900	0.953	-20.8	1.202	152.1	0.0083	79.3	0.958	-11.8
1000	0.945	-23.1	1.209	148.9	0.0087	77.5	0.956	-13.1
1100	0.935	-25.2	1.208	145.9	0.0087	74.9	0.954	-14.5
1200	0.926	-27.5	1.214	142.5	0.0093	78.1	0.951	-15.8
1300	0.918	-29.7	1.217	139.4	0.0098	79.5	0.948	-17.1
1400	0.906	-32.1	1.223	136.0	0.0102	78.9	0.946	-18.4
1500	0.895	-34.4	1.226	132.9	0.0107	75.9	0.944	-19.8
1600	0.882	-36.7	1.231	129.5	0.0107	74.8	0.943	-21.1
1700	0.867	-39.0	1.229	126.2	0.0106	75.7	0.941	-22.4
1800	0.854	-41.2	1.229	122.6	0.0108	71.6	0.939	-23.8
1900	0.839	-43.4	1.229	119.5	0.0109	68.6	0.936	-25.2
2000	0.824	-45.5	1.232	115.8	0.0106	71.8	0.933	-26.5
2100	0.810	-47.7	1.227	112.6	0.0116	70.2	0.929	-27.9
2200	0.796	-50.0	1.227	108.8	0.0119	67.2	0.927	-29.2
2300	0.778	-52.2	1.226	105.6	0.0116	65.5	0.924	-30.6
2400	0.761	-54.2	1.225	101.7	0.0118	66.2	0.923	-31.9
2500	0.746	-55.9	1.221	98.6	0.0125	63.0	0.921	-33.0
2600	0.735	-57.1	1.228	96.1	0.0123	63.5	0.921	-33.8

**S-PARAMETER**

( $V_{DS}=2V$ ,  $I_D=5mA$ ,  $V_{G2S}=0.5V$ ,  $T_a=25^{\circ}C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.997	-4.3	1.913	174.3	0.0017	113.5	0.953	-2.1
200	0.995	-5.8	1.909	172.3	0.0021	103.9	0.953	-2.9
300	0.990	-7.8	1.904	169.8	0.0029	95.8	0.952	-4.0
400	0.984	-10.4	1.900	166.4	0.0035	87.2	0.951	-5.3
500	0.977	-12.9	1.897	163.1	0.0036	82.1	0.950	-6.6
600	0.969	-15.3	1.896	159.9	0.0045	81.8	0.948	-7.9
700	0.959	-17.8	1.894	156.6	0.0051	84.0	0.946	-9.3
800	0.950	-20.4	1.896	153.3	0.0057	81.4	0.944	-10.6
900	0.938	-22.9	1.892	150.2	0.0069	81.1	0.941	-11.9
1000	0.925	-25.4	1.895	146.9	0.0077	83.9	0.940	-13.2
1100	0.912	-28.0	1.892	143.8	0.0088	84.4	0.938	-14.5
1200	0.899	-30.6	1.897	140.3	0.0093	81.3	0.936	-15.8
1300	0.884	-32.9	1.893	137.0	0.0092	82.1	0.935	-17.1
1400	0.870	-35.3	1.896	133.5	0.0090	84.4	0.933	-18.4
1500	0.855	-37.7	1.893	130.1	0.0099	79.8	0.931	-19.8
1600	0.837	-39.9	1.892	126.6	0.0097	79.2	0.929	-21.2
1700	0.818	-42.1	1.881	123.1	0.0100	76.7	0.925	-22.6
1800	0.799	-44.2	1.874	119.4	0.0108	75.4	0.923	-24.0
1900	0.780	-46.4	1.865	116.1	0.0115	73.4	0.919	-25.4
2000	0.761	-48.5	1.857	112.4	0.0115	72.8	0.916	-26.8
2100	0.744	-50.7	1.843	109.0	0.0120	69.6	0.915	-28.1
2200	0.725	-52.6	1.831	105.3	0.0120	73.8	0.913	-29.6
2300	0.708	-54.5	1.820	102.0	0.0113	71.6	0.913	-30.9
2400	0.688	-56.3	1.810	98.1	0.0119	72.2	0.913	-32.2
2500	0.672	-57.8	1.801	95.1	0.0127	75.0	0.913	-33.4
2600	0.659	-58.8	1.805	92.5	0.0136	77.8	0.913	-34.2

S-PARAMETER

( $V_{DS}=2V$ ,  $I_D=10mA$ ,  $V_{G2S}=0.5V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.993	-4.6	2.468	173.8	0.0006	61.7	0.936	-2.1
200	0.991	-6.2	2.464	171.6	0.0018	81.6	0.936	-2.9
300	0.987	-8.5	2.455	168.7	0.0028	91.9	0.935	-3.9
400	0.981	-11.4	2.450	165.0	0.0044	91.0	0.934	-5.3
500	0.973	-14.1	2.443	161.4	0.0050	88.7	0.933	-6.6
600	0.962	-16.9	2.436	157.8	0.0058	89.1	0.932	-7.9
700	0.951	-19.7	2.425	154.3	0.0063	86.0	0.930	-9.2
800	0.937	-22.4	2.424	150.6	0.0072	79.9	0.928	-10.5
900	0.921	-25.0	2.411	147.2	0.0079	75.4	0.927	-11.8
1000	0.905	-27.7	2.406	143.7	0.0084	73.9	0.925	-13.1
1100	0.887	-30.3	2.393	140.2	0.0087	77.3	0.922	-14.4
1200	0.869	-32.8	2.393	136.5	0.0092	80.0	0.920	-15.7
1300	0.853	-35.3	2.380	133.0	0.0095	79.5	0.919	-17.0
1400	0.835	-37.7	2.378	129.3	0.0091	80.8	0.917	-18.4
1500	0.818	-40.0	2.366	125.8	0.0095	79.8	0.915	-19.7
1600	0.799	-42.3	2.359	122.1	0.0101	78.2	0.914	-21.1
1700	0.778	-44.5	2.339	118.5	0.0105	78.1	0.912	-22.6
1800	0.757	-46.7	2.319	114.6	0.0105	78.1	0.910	-23.9
1900	0.735	-48.8	2.299	111.1	0.0114	78.4	0.908	-25.3
2000	0.712	-51.0	2.281	107.1	0.0119	79.5	0.907	-26.8
2100	0.692	-53.1	2.256	103.5	0.0122	78.9	0.904	-28.2
2200	0.672	-55.1	2.230	99.5	0.0124	77.5	0.904	-29.6
2300	0.652	-56.9	2.212	96.2	0.0126	74.9	0.904	-31.0
2400	0.633	-58.5	2.191	92.1	0.0122	72.9	0.904	-32.4
2500	0.617	-59.6	2.171	89.0	0.0119	71.5	0.904	-33.6
2600	0.603	-60.4	2.171	86.3	0.0114	68.9	0.905	-34.5

( $V_{DS}=3V$ ,  $I_D=2mA$ ,  $V_{G2S}=1V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.997	-3.7	1.220	175.0	0.0027	58.3	0.973	-2.0
200	0.996	-5.0	1.218	173.1	0.0031	68.8	0.973	-2.7
300	0.994	-6.8	1.218	170.7	0.0034	76.3	0.972	-3.7
400	0.990	-9.1	1.217	167.6	0.0040	81.2	0.970	-4.9
500	0.985	-11.4	1.216	164.6	0.0043	83.2	0.970	-6.1
600	0.980	-13.7	1.217	161.6	0.0048	87.8	0.968	-7.3
700	0.973	-16.0	1.217	158.8	0.0050	83.1	0.966	-8.6
800	0.963	-18.2	1.219	155.7	0.0054	76.7	0.964	-9.9
900	0.956	-20.4	1.219	152.9	0.0063	75.7	0.961	-11.1
1000	0.947	-22.6	1.225	149.9	0.0074	75.1	0.958	-12.3
1100	0.937	-24.9	1.227	146.9	0.0077	75.6	0.956	-13.6
1200	0.926	-27.2	1.237	143.6	0.0086	75.9	0.955	-14.8
1300	0.917	-29.3	1.240	140.6	0.0093	78.2	0.953	-16.0
1400	0.905	-31.6	1.246	137.3	0.0093	76.0	0.951	-17.3
1500	0.893	-33.8	1.249	134.2	0.0095	71.5	0.950	-18.5
1600	0.883	-36.1	1.253	131.0	0.0099	68.8	0.948	-19.8
1700	0.870	-38.3	1.252	127.7	0.0101	71.0	0.945	-21.1
1800	0.856	-40.5	1.251	124.1	0.0097	70.5	0.942	-22.4
1900	0.842	-42.6	1.252	121.0	0.0095	72.2	0.940	-23.6
2000	0.828	-44.8	1.254	117.5	0.0096	75.1	0.939	-24.9
2100	0.811	-47.1	1.252	114.3	0.0100	73.8	0.936	-26.1
2200	0.795	-49.1	1.249	110.6	0.0091	70.5	0.935	-27.4
2300	0.781	-51.2	1.248	107.8	0.0095	68.1	0.934	-28.6
2400	0.765	-53.4	1.247	104.0	0.0092	69.3	0.933	-29.9
2500	0.753	-54.9	1.243	101.1	0.0084	71.2	0.932	-30.9
2600	0.744	-56.0	1.248	98.5	0.0077	77.0	0.933	-31.7

S-PARAMETER

( $V_{DS}=3V$ ,  $I_D=5mA$ ,  $V_{G2S}=1V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.995	-4.2	1.923	174.6	0.0012	133.1	0.963	-2.0
200	0.992	-5.6	1.919	172.6	0.0020	112.8	0.963	-2.7
300	0.989	-7.6	1.914	170.0	0.0027	104.4	0.961	-3.7
400	0.984	-10.1	1.912	166.7	0.0035	93.7	0.959	-4.9
500	0.978	-12.5	1.910	163.5	0.0039	90.3	0.958	-6.2
600	0.971	-15.0	1.909	160.3	0.0050	81.0	0.956	-7.4
700	0.964	-17.5	1.907	157.3	0.0054	78.4	0.954	-8.6
800	0.952	-20.0	1.909	154.0	0.0065	74.9	0.952	-9.8
900	0.941	-22.4	1.903	150.9	0.0075	76.3	0.950	-11.1
1000	0.927	-25.0	1.906	147.6	0.0078	78.6	0.949	-12.3
1100	0.913	-27.5	1.901	144.5	0.0084	80.3	0.947	-13.5
1200	0.897	-29.9	1.905	141.1	0.0088	77.5	0.945	-14.7
1300	0.884	-32.3	1.901	138.0	0.0082	77.8	0.944	-16.0
1400	0.870	-34.7	1.902	134.5	0.0082	70.5	0.942	-17.2
1500	0.854	-36.8	1.899	131.4	0.0092	68.5	0.940	-18.3
1600	0.837	-39.0	1.901	128.0	0.0096	71.0	0.939	-19.6
1700	0.820	-41.3	1.891	124.7	0.0101	72.4	0.936	-20.8
1800	0.803	-43.5	1.882	121.0	0.0102	72.3	0.933	-22.0
1900	0.784	-45.5	1.873	117.8	0.0107	79.0	0.930	-23.3
2000	0.765	-47.5	1.864	114.0	0.0104	79.9	0.928	-24.5
2100	0.747	-49.5	1.849	110.8	0.0099	76.7	0.925	-25.8
2200	0.726	-51.5	1.833	107.0	0.0090	75.2	0.923	-27.1
2300	0.705	-53.4	1.824	104.0	0.0094	76.1	0.923	-28.3
2400	0.686	-55.5	1.812	100.2	0.0087	73.4	0.922	-29.5
2500	0.672	-57.1	1.801	97.4	0.0087	75.1	0.921	-30.5
2600	0.660	-58.3	1.807	94.8	0.0086	77.6	0.921	-31.2

( $V_{DS}=3V$ ,  $I_D=10mA$ ,  $V_{G2S}=1V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.989	-4.4	2.577	174.0	0.0019	85.2	0.954	-1.9
200	0.987	-6.1	2.569	171.8	0.0023	80.5	0.953	-2.6
300	0.984	-8.4	2.559	169.0	0.0026	89.3	0.952	-3.6
400	0.980	-11.2	2.550	165.3	0.0033	78.1	0.951	-4.8
500	0.972	-13.9	2.543	161.8	0.0037	76.2	0.949	-6.1
600	0.964	-16.6	2.534	158.2	0.0042	74.8	0.948	-7.2
700	0.954	-19.1	2.524	154.8	0.0049	75.7	0.946	-8.5
800	0.939	-21.7	2.520	151.3	0.0057	75.3	0.944	-9.7
900	0.924	-24.3	2.505	148.0	0.0062	76.7	0.942	-10.9
1000	0.906	-26.8	2.501	144.5	0.0068	79.4	0.939	-12.1
1100	0.888	-29.3	2.484	141.2	0.0077	84.4	0.938	-13.3
1200	0.870	-31.8	2.479	137.6	0.0079	84.6	0.935	-14.5
1300	0.853	-34.2	2.462	134.2	0.0086	83.4	0.933	-15.6
1400	0.834	-36.7	2.457	130.5	0.0089	84.4	0.932	-16.9
1500	0.818	-39.0	2.439	127.1	0.0092	78.2	0.930	-18.1
1600	0.799	-41.3	2.427	123.5	0.0090	72.0	0.928	-19.3
1700	0.780	-43.4	2.404	120.0	0.0090	74.7	0.926	-20.6
1800	0.757	-45.4	2.381	116.1	0.0089	69.7	0.925	-21.8
1900	0.735	-47.3	2.354	112.9	0.0089	69.8	0.922	-23.0
2000	0.713	-49.5	2.334	109.1	0.0086	75.4	0.919	-24.2
2100	0.692	-51.3	2.304	105.7	0.0091	78.6	0.917	-25.5
2200	0.668	-53.0	2.275	101.9	0.0088	81.3	0.915	-26.7
2300	0.650	-54.8	2.251	98.8	0.0087	85.5	0.915	-27.9
2400	0.627	-56.3	2.227	95.0	0.0087	91.2	0.915	-29.1
2500	0.609	-57.2	2.204	92.1	0.0092	94.2	0.916	-30.0
2600	0.593	-58.1	2.200	89.7	0.0091	99.3	0.917	-30.7

S-PARAMETER

( $V_{DS}=5V$ ,  $I_D=2mA$ ,  $V_{G2S}=1.5V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.993	-3.7	1.184	174.9	0.0009	116.0	0.977	-1.7
200	0.992	-5.0	1.182	173.0	0.0015	106.6	0.977	-2.4
300	0.991	-6.8	1.179	170.6	0.0020	92.3	0.975	-3.4
400	0.987	-8.9	1.178	167.5	0.0025	88.4	0.975	-4.6
500	0.983	-11.2	1.180	164.5	0.0033	83.3	0.973	-5.7
600	0.979	-13.4	1.181	161.5	0.0043	78.3	0.972	-6.9
700	0.974	-15.6	1.181	158.6	0.0048	74.1	0.970	-8.1
800	0.966	-17.8	1.188	155.6	0.0055	78.5	0.969	-9.2
900	0.962	-20.1	1.189	152.8	0.0068	72.9	0.967	-10.3
1000	0.954	-22.3	1.195	149.9	0.0071	77.0	0.965	-11.4
1100	0.942	-24.5	1.194	147.1	0.0074	79.2	0.963	-12.5
1200	0.931	-26.8	1.202	144.0	0.0085	78.1	0.961	-13.6
1300	0.923	-28.9	1.202	140.9	0.0090	73.5	0.960	-14.7
1400	0.911	-31.1	1.208	137.7	0.0093	75.9	0.958	-15.8
1500	0.899	-33.3	1.210	134.7	0.0098	71.6	0.956	-17.0
1600	0.889	-35.6	1.217	131.4	0.0094	69.5	0.954	-18.2
1700	0.876	-37.7	1.218	128.2	0.0087	68.8	0.952	-19.3
1800	0.862	-39.9	1.218	124.8	0.0083	73.6	0.950	-20.5
1900	0.848	-42.1	1.217	121.9	0.0084	77.1	0.947	-21.7
2000	0.833	-44.3	1.220	118.2	0.0084	75.2	0.945	-22.8
2100	0.818	-46.5	1.218	115.1	0.0098	73.1	0.943	-23.9
2200	0.803	-48.7	1.216	111.4	0.0096	69.2	0.941	-25.0
2300	0.786	-50.9	1.219	108.4	0.0096	66.4	0.940	-26.2
2400	0.769	-52.9	1.218	104.5	0.0089	63.0	0.940	-27.2
2500	0.754	-54.4	1.214	101.6	0.0085	65.7	0.940	-28.1
2600	0.742	-55.6	1.220	99.0	0.0075	69.7	0.940	-28.8

( $V_{DS}=5V$ ,  $I_D=5mA$ ,  $V_{G2S}=1.5V$ ,  $T_a=25^\circ C$ ,  $Z_L=Z_S=50\Omega$ )

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.994	-4.1	1.887	174.4	0.0014	89.2	0.968	-1.9
200	0.992	-5.6	1.887	172.4	0.0019	74.4	0.967	-2.5
300	0.989	-7.5	1.883	169.9	0.0026	74.8	0.966	-3.4
400	0.985	-10.0	1.881	166.6	0.0029	74.8	0.965	-4.5
500	0.980	-12.4	1.879	163.3	0.0034	79.7	0.964	-5.7
600	0.972	-14.9	1.880	160.1	0.0043	85.2	0.963	-6.8
700	0.965	-17.3	1.873	157.0	0.0049	94.7	0.961	-7.9
800	0.955	-19.8	1.877	153.8	0.0055	92.0	0.959	-9.0
900	0.944	-22.2	1.871	150.7	0.0067	89.0	0.958	-10.2
1000	0.931	-24.5	1.874	147.5	0.0069	83.6	0.956	-11.3
1100	0.919	-27.0	1.867	144.4	0.0070	83.8	0.954	-12.4
1200	0.903	-29.4	1.872	141.0	0.0077	77.5	0.951	-13.5
1300	0.888	-31.7	1.867	137.8	0.0076	77.0	0.950	-14.6
1400	0.872	-34.1	1.869	134.4	0.0076	77.9	0.948	-15.7
1500	0.856	-36.4	1.865	131.2	0.0081	77.6	0.946	-16.8
1600	0.837	-38.6	1.863	127.7	0.0085	74.5	0.944	-18.0
1700	0.820	-40.9	1.854	124.3	0.0083	77.3	0.942	-19.1
1800	0.802	-43.3	1.846	120.6	0.0093	76.3	0.941	-20.2
1900	0.784	-45.5	1.837	117.4	0.0095	75.0	0.938	-21.3
2000	0.766	-47.6	1.830	113.6	0.0100	77.4	0.936	-22.4
2100	0.748	-49.7	1.818	110.6	0.0104	80.9	0.934	-23.5
2200	0.728	-51.8	1.808	106.9	0.0103	80.8	0.933	-24.6
2300	0.708	-53.5	1.793	104.0	0.0095	84.6	0.931	-25.6
2400	0.686	-55.4	1.783	100.3	0.0090	89.5	0.931	-26.6
2500	0.668	-57.1	1.771	97.5	0.0082	94.5	0.931	-27.5
2600	0.655	-58.4	1.776	95.0	0.0076	98.5	0.931	-28.1



## S-PARAMETER

(V<sub>DS</sub>=5V, I<sub>D</sub>=10mA, V<sub>G2S</sub>=1.5V, T<sub>a</sub>=25°C, Z<sub>L</sub>=Z<sub>S</sub>=50Ω)

FREQ. (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	0.994	-4.1	2.507	173.8	0.0007	63.5	0.963	-1.7
200	0.990	-5.8	2.502	171.6	0.0011	70.8	0.963	-2.4
300	0.986	-8.1	2.495	168.8	0.0016	79.4	0.962	-3.3
400	0.980	-10.9	2.493	165.2	0.0024	84.0	0.960	-4.4
500	0.972	-13.8	2.483	161.6	0.0029	81.4	0.960	-5.6
600	0.964	-16.5	2.476	158.0	0.0038	88.5	0.958	-6.7
700	0.954	-19.1	2.463	154.6	0.0044	88.4	0.956	-7.9
800	0.939	-21.8	2.461	151.1	0.0048	79.9	0.954	-8.9
900	0.925	-24.3	2.445	147.7	0.0059	79.7	0.952	-10.0
1000	0.908	-26.8	2.437	144.2	0.0059	77.8	0.949	-11.1
1100	0.889	-29.4	2.420	140.8	0.0061	78.9	0.947	-12.2
1200	0.869	-31.9	2.421	137.2	0.0063	78.9	0.944	-13.2
1300	0.851	-34.3	2.404	133.7	0.0070	85.4	0.942	-14.3
1400	0.833	-36.8	2.395	130.1	0.0072	87.7	0.941	-15.4
1500	0.814	-39.3	2.383	126.7	0.0075	86.6	0.939	-16.5
1600	0.795	-41.5	2.368	123.1	0.0077	85.2	0.937	-17.6
1700	0.775	-43.7	2.342	119.6	0.0083	89.1	0.935	-18.7
1800	0.754	-45.8	2.317	115.8	0.0077	88.7	0.933	-19.8
1900	0.730	-47.8	2.292	112.5	0.0070	91.7	0.931	-20.9
2000	0.706	-49.7	2.271	108.6	0.0084	98.5	0.928	-21.9
2100	0.684	-51.6	2.243	105.3	0.0089	95.4	0.928	-22.9
2200	0.662	-53.3	2.215	101.5	0.0084	93.7	0.927	-24.0
2300	0.641	-55.0	2.191	98.4	0.0085	94.6	0.927	-25.0
2400	0.619	-56.5	2.168	94.5	0.0088	91.9	0.927	-26.1
2500	0.601	-57.5	2.144	91.5	0.0084	89.0	0.928	-27.0
2600	0.586	-58.4	2.144	88.9	0.0080	92.0	0.928	-27.7