

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	25	Vdc
Drain-Gate Voltage	V _{DG1} V _{DG2}	30 30	Vdc
Drain Current	I _D	30	mAdc
Gate Current	I _{G1R} I _{G1F} I _{G2R} I _{G2F}	-10 10 -10 10	mAdc
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	300 1.71	mW mW/°C
Lead Temperature, 1/16" From Seated Surface for 10 seconds	T _L	260	°C
Storage Channel Temperature Range	T _{stg}	-65 to +175	°C
Operating Channel Temperature	T _{channel}	175	°C

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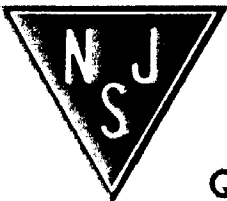


**DUAL-GATE MOSFET
UHF COMMUNICATIONS**

N-CHANNEL — DEPLETION

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (I _D = 10 μAdc, V _{G1S} = -4.0 Vdc, V _{G2S} = 4.0 Vdc)	V _{(BR)DSX}	25	—	—	Vdc
Gate 1 — Source Forward Breakdown Voltage (I _{G1} = 10 mAdc, V _{G2S} = V _{DS} = 0)	V _{(BR)G1SSF}	7.0	—	22	Vdc
Gate 1 — Source Reverse Breakdown Voltage (I _{G1} = -10 mAdc, V _{G2S} = V _{DS} = 0)	V _{(BR)G1SSR}	-7.0	—	-22	Vdc
Gate 2 — Source Forward Breakdown Voltage (I _{G2} = 10 mAdc, V _{G1S} = V _{DS} = 0)	V _{(BR)G2SSF}	7.0	—	22	Vdc
Gate 2 — Source Reverse Breakdown Voltage (I _{G2} = -10 mAdc, V _{G1S} = V _{DS} = 0)	V _{(BR)G2SSR}	-7.0	—	-22	Vdc
Gate 1 — Terminal Forward Current (V _{G1S} = 6.0 Vdc, V _{G2S} = V _{DS} = 0)	I _{G1SSF}	—	—	20	nAdc
Gate 1 — Terminal Reverse Current (V _{G1S} = -6.0 Vdc, V _{G2S} = V _{DS} = 0) (V _{G1S} = -6.0 Vdc, V _{G2S} = V _{DS} = 0, T _A = 150°C)	I _{G1SSR}	—	—	-20 -10	nAdc μAdc
Gate 2 — Terminal Forward Current (V _{G2S} = 6.0 Vdc, V _{G1S} = V _{DS} = 0)	I _{G2SSF}	—	—	20	nAdc
Gate 2 — Terminal Reverse Current (V _{G2S} = -6.0 Vdc, V _{G1S} = V _{DS} = 0) (V _{G2S} = -6.0 Vdc, V _{G1S} = V _{DS} = 0, T _A = 150°C)	I _{G2SSR}	—	—	-20 -10	nAdc μAdc
ON CHARACTERISTICS					
Gate 1 — Zero Voltage Drain Current (V _{DS} = 15 Vdc, V _{G1S} = 0, V _{G2S} = 4.0 Vdc)	I _{DSS}	5.0	—	30	mAdc
SMALL-SIGNAL CHARACTERISTICS					
Forward Transfer Admittance (V _{DS} = 15 Vdc, V _{G2S} = 4.0 Vdc, I _D = 10 mAdc, f = 1.0 kHz)	Y _{fs}	10	13	20	mmhos
Input Capacitance (V _{DS} = 15 Vdc, V _{G2S} = 4.0 Vdc, I _D = 5.0 mAdc, f = 1.0 MHz)	C _{iss}	—	3.3	7.0	pF
Reverse Transfer Capacitance (V _{DS} = 15 Vdc, V _{G2S} = 4.0 Vdc, I _D = 5.0 mAdc, f = 1.0 MHz)	C _{rss}	0.005	0.023	0.03	pF
Output Capacitance (V _{DS} = 15 Vdc, V _{G2S} = 4.0 Vdc, I _D = 5.0 mAdc, f = 1.0 MHz)	C _{oss}	0.5	2.0	4.0	pF



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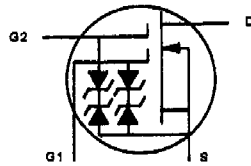
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ELECTRICAL CHARACTERISTICS (continued) ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
FUNCTIONAL CHARACTERISTICS					
Noise Figure ($V_{DS} = 15\text{ Vdc}$, $V_{G2S} = 4.0\text{ Vdc}$, $I_D = 10\text{ mAdc}$, $f = 500\text{ MHz}$)	NF	—	4.0	6.0	dB
Common Source Power Gain (Figure 12) ($V_{DS} = 15\text{ Vdc}$, $V_{G2S} = 4.0\text{ Vdc}$, $I_D = 10\text{ mAdc}$, $f = 500\text{ MHz}$)	G_{ps}	10	13	20	dB
*Bandwidth ($V_{DS} = 15\text{ Vdc}$, $V_{G2S} = 4.0\text{ Vdc}$, $I_D = 10\text{ mAdc}$, $f = 500\text{ MHz}$)	BW	7.0	—	17	MHz

FIGURE 1 – MOSFET CIRCUIT SCHEMATIC



TYPICAL SCATTERING PARAMETERS

FIGURE 2 – S_{11} , INPUT REFLECTION COEFFICIENT

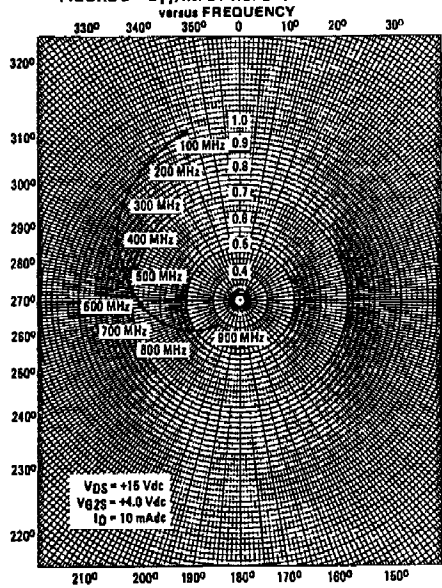


FIGURE 3 – S_{12} , REVERSE TRANSMISSION COEFFICIENT

