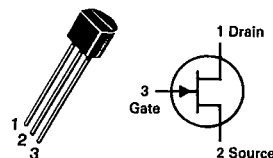


MPF820**CASE 29-04, STYLE 5
TO-92 (TO-226AA)****JFET
RF AMPLIFIER****N-CHANNEL — DEPLETION****MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	25	Vdc
Drain-Gate Voltage	V_{DG}	25	Vdc
Reverse Gate-Source Voltage	V_{GSR}	25	Vdc
Forward Gate Current	$I_{G(f)}$	10	mAac
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage ($I_G = 10 \mu\text{Aac}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	25	—	—	Vdc
Gate Reverse Current ($V_{GS} = 15 \text{ Vdc}$, $V_{DS} = 0$)	I_{GSS}	—	—	5.0	nAac
Gate Source Cutoff Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 200 \mu\text{Aac}$)	$V_{GS(off)}$	—	—	-5.0	Vdc
ON CHARACTERISTICS					
Zero-Gate-Voltage Drain ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$)	I_{DSS}	10	—	—	mAac
SMALL-SIGNAL CHARACTERISTICS					
Forward Transfer Admittance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ kHz}$)	$ y_{fs} $	—	20	—	mmhos
Input Capacitance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 1.0 \text{ MHz}$)	C_{iss}	—	15	—	pF
Reverse Transfer Capacitance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 1.0 \text{ MHz}$)	C_{rss}	—	3.5	—	pF
Common-Gate Input Conductance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 100 \text{ MHz}$)	g_{ig}	—	16	—	mmhos
Common-Gate Output Conductance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 100 \text{ MHz}$)	G_{og}	—	—	16	μmhos
Common-Gate Forward Transadmittance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 100 \text{ MHz}$)	y_{fg}	—	18	—	mmhos
Common-Gate Reverse Transadmittance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 100 \text{ MHz}$)	y_{rg}	—	—	130	μmhos
Output Capacitance ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, $f = 1.0 \text{ kHz}$)	C_{oss}	—	3.5	—	pF
FUNCTIONAL CHARACTERISTICS					
Noise Figure ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, See Figure 5)	NF	—	—	4.0	dB
Small-Signal Power Gain ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ mAac}$, See Figure 5)	G_{pg}	—	11	—	dB

FIGURE 1 - NOISE FIGURE

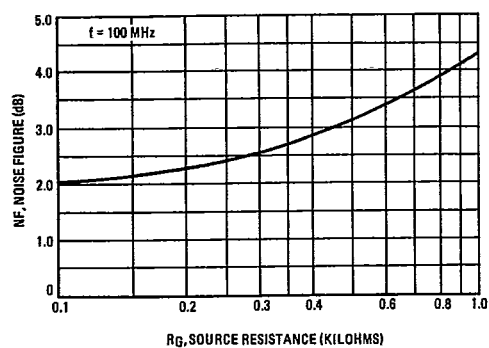


FIGURE 2 - FORWARD TRANSMITTANCE

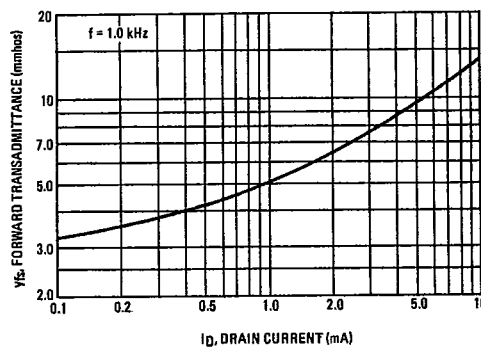


FIGURE 3 - INPUT CAPACITANCE

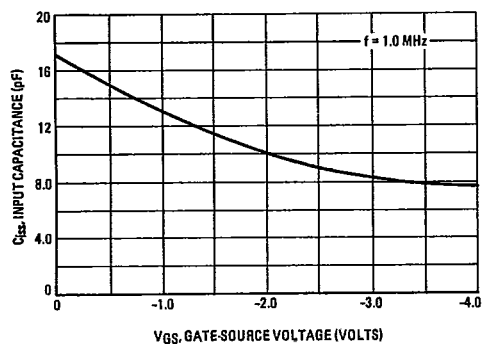
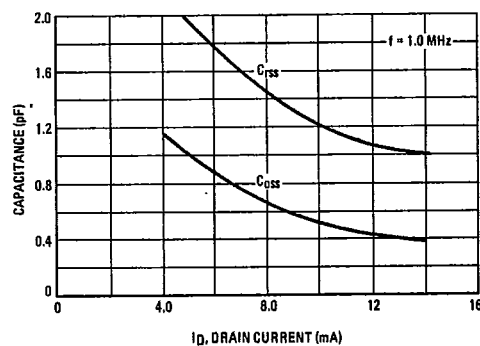


FIGURE 4 - OUTPUT AND REVERSE TRANSFER CAPACITANCE



4

FIGURE 5 - 100 MHz TEST CIRCUIT

