MPF4220,A
MPF4221,A
MPF4222,A

CASE 29-02, STYLE 5
TO-92 (TO-226AA)

JFET
LOW-FREQUENCY

N-CHANNEL — DEPLETION

Refer to 2N4220 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	Vdc
Drain-Gate Voltage	V_{DG}	30	Vdc
Gate-Source Voltage	V_{GS}	30	Vdc
Reverse Gate-Source Voltage	V_{GSR}	30	Vdc
Gate Current	I_G	10	mA
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	310 2.82	mW mW/°C
Storage Temperature Range	T_{stg}	−65 to +150	°C

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage (I_G = −10 μA, V_{DS} = 0 V)		$V_{(BR)GSS}$	−30	—	Vdc
Gate Reverse Current (V_{GS} = −15 V, V_{DS} = 0 V)		I_{GSS}	—	−100	pA
Gate Source Cutoff Voltage (V_{DS} = 15 V, I_D = 0.1 nA)		$V_{GS(off)}$			Vdc
	MPF4220,A		—	−4.0	
	MPF4221,A		—	−6.0	
	MPF4222,A		—	−8.0	
Gate Source Voltage		V_{GS}			Vdc
(V_{DS} = 15 V, I_D = 50 μA)	MPF4220,A		−0.5	−2.5	
(V_{DS} = 15 V, I_D = 200 μA)	MPF4221,A		−1.0	−5.0	
(V_{DS} = 15 V, I_D = 500 μA)	MPF4222,A		−2.0	−6.0	
ON CHARACTERISTICS					
Zero-Gate-Voltage Drain Current		I_{DSS}*			mA
(V_{DS} = 15 Volts, V_{GS} = 0 V)	MPF4220,A		+0.5	+3.0	
	MPF4221,A		+2.0	+6.0	
	MPF4222,A		+5.0	+15.0	
SMALL-SIGNAL CHARACTERISTICS					
Forward Transfer Admittance		$\|y_{fs}\|$*			μmhos
(V_{DS} = 15 V, f = 1.0 kHz, V_{GS} = 0 V)	MPF4220,A		1000	4000	
	MPF4221,A		2000	5000	
	MPF4222,A		2500	6000	
Output Admittance		$\|y_{os}\|$			μmhos
(V_{DS} = 15 V, f = 1.0 kHz, V_{GS} = 0 V)	MPF4220,A		—	10	
	MPF4221,A		—	20	
	MPF4222,A		—	40	
Input Capacitance (V_{DS} = 15 V, f = 1.0 MHz)		C_{iss}	—	6.0	pF
Reverse Transfer Capacitance (V_{DS} = 15 V, f = 1.0 MHz)		C_{rss}	—	2.0	pF
FUNCTIONAL CHARACTERISTICS					
Noise Figure		NF	—	2.5	dB
(V_{DS} = 15 V, f = 100 Hz, R_G = 1.0 MΩ)	MPF4220,A				
	MPF4221,A				
	MPF4222,A				

*Pulse Width ≤ 100 msec, Duty Cycle ≤ 10%.