MFE2000
MFE2001

CASE 20-03, STYLE 1
TO-72 (TO-206AF)

JFET
VHF/UHF AMPLIFIER

N-CHANNEL — DEPLETION

Refer to 2N4416 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	25	Vdc
Drain-Gate Voltage	V_{DG}	25	Vdc
Gate-Source Voltage	V_{GS}	−25	Vdc
Drain Current	I_D	30	mAdc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	300 2.0	mW mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +175	°C

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Gate-Source Breakdown Voltage (I_G = −1.0 μAdc, V_{DS} = 0)		$V_{(BR)GSS}$	−25	—	—	Vdc
Gate Reverse Current (V_{GS} = −20 Vdc, V_{DS} = 0) (V_{GS} = −20 Vdc, V_{DS} = 0, T_A = 150°C)		I_{GSS}	— —	— —	−100 −200	pAdc nAdc
Gate Source Cutoff Voltage (I_D = 0.5 mAdc, V_{DS} = 15 Vdc)	MFE2000 MFE2001	$V_{GS(off)}$	−0.5 −2.0	— —	−4.0 −6.0	Vdc
ON CHARACTERISTICS						
Zero-Gate-Voltage Drain Current (V_{DS} = 15 Vdc, V_{GS} = 0)	MFE2000 MFE2001	I_{DSS}	4.0 8.0	— —	10 20	mAdc
SMALL-SIGNAL CHARACTERISTICS						
Forward Transfer Admittance (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 kHz)	MFE2000 MFE2001	$\lvert Y_{fs} \rvert$	2500 4000	— —	6000 8000	μmhos
Output Admittance (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 kHz)	MFE2000 MFE2001	$\lvert Y_{os} \rvert$	— —	— —	50 75	μmhos
Input Capacitance (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 MHz)		C_{iss}	—	—	5.0	pF
Reverse Transfer Capacitance (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 MHz)		C_{rss}	—	—	1.0	pF
Output Capacitance (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 MHz)		C_{oss}	—	—	2.0	pF
FUNCTIONAL CHARACTERISTICS						
Noise Figure (V_{DS} = 15 Vdc, I_D = 4.0 mAdc, f = 100 MHz, R_G ≈ 1.0 k ohm) (V_{DS} = 15 Vdc, I_D = 4.0 mAdc, f = 400 MHz, R_G ≈ 1.0 k ohm)		NF	— —	1.6 3.3	2.0 4.0	dB
Common Source Power Gain (V_{DS} = 15 Vdc, I_D = 4.0 mAdc, f = 100 MHz) (V_{DS} = 15 Vdc, I_D = 4.0 mAdc, f = 400 MHz)		G_{ps}	18 10	23 14	— —	dB