2N3330

CASE 20-03, STYLE 5
TO-72 (TO-206AF)

JFET
AMPLIFIER

P-CHANNEL — DEPLETION

Refer to 2N5460 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Gate Voltage	V_{DG}	20	Vdc
Reverse Gate-Source Voltage	V_{GSR}	20	Vdc
Gate Current	I_G	10	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.3 2.0	Watts mW/°C
Storage Temperature Range	T_{stg}	−65 to +200	°C

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Gate-Source Breakdown Voltage (I_G = 10 μAdc, V_{DS} = 0)	$V_{(BR)GSS}$	20	—	Vdc
Gate Reverse Current (V_{GS} = 10 Vdc, V_{DS} = 0) (V_{GS} = 10 Vdc, V_{DS} = 0, T_A = 150°C)	I_{GSS}	 — —	 10 10	 nAdc μAdc
ON CHARACTERISTICS				
Zero-Gate-Voltage Drain Current(1) (V_{DS} = −10 Vdc, V_{GS} = 0)	I_{DSS}	2.0	6.0	mAdc
Gate-Source Voltage (V_{DG} = −15 Vdc, I_D = 10 μAdc)	V_{GS}	—	6.0	Vdc
Drain-Source Resistance (I_D = 100 μAdc, V_{GS} = 0)	r_{DS}	—	800	Ohms
SMALL-SIGNAL CHARACTERISTICS				
Forward Transfer Admittance(1) (V_{DS} = −10 Vdc, I_D = 2.0 mAdc, f = 1.0 kHz) (V_{DS} = −10 Vdc, I_D = 2.0 mAdc, f = 10 MHz)	$\lvert y_{fs} \rvert$	 1500 1350	 3000 —	μmhos
Output Admittance (V_{DS} = −10 Vdc, I_D = 2.0 mAdc, f = 1.0 kHz)	$\lvert y_{os} \rvert$	—	40	μmhos
Reverse Transfer Conductance (V_{DS} = −10 Vdc, I_D = 2.0 mAdc, f = 1.0 kHz)	$\lvert y_{rs} \rvert$	—	0.1	μmhos
Input Conductance (V_{DS} = −10 Vdc, I_D = 2.0 mAdc, f = 1.0 kHz)	$\lvert y_{is} \rvert$	—	0.2	μmhos
Input Capacitance (V_{DS} = −10 Vdc, V_{GS} = 1.0 Vdc, f = 1.0 MHz)	C_{iss}	—	20	pF
FUNCTIONAL CHARACTERISTICS				
Noise Figure (V_{DS} = −5.0 Vdc, I_D = 1.0 mAdc, R_G = 1.0 Megohm, f = 1.0 kHz)	NF	—	3.0	dB

(1) Pulse Test: Pulse Width ≤ 630 ms, Duty Cycle ≤ 10%.