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NTE451 Silicon N-Channel JFET Transistor VHF/UHF Amplifier TO92 Type Package

Absolute Maximum Ratings:

Drain-Gate Voltage, V_{DG}	25V
Reverse Gate-Source Voltage, V_{GSR}	25V
Drain Current, I_D	30mA
Total Device Dissipation ($T_C = +25^\circ C$), P_D	350mW
Derate Above $25^\circ C$	2.8mW/ $^\circ C$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ C$

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1 A, V_{DS} = 0$	-25	-	-	V
Gate Reverse Current	I_{GSS}	$V_{GS} = -20V, V_{DS} = 0$	-	-	-1.0	nA
		$V_{GS} = -20V, V_{DS} = 0, T_A = +100^\circ C$	-	-	-0.2	nA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = 10nA, V_{DS} = 15V$	-0.5	-	-4.0	V
ON Characteristics						
Zero-Gate-Voltage Drain Current	I_{DSS}	$V_{DS} = 15V, V_{GS} = 0$	4	-	20	mA
Small Signal Characteristics Characteristics						
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 15V, V_{GS} = 0, f = 1kHz$	3500	-	7000	mho
Input Admittance	$Re(y_{is})$	$V_{DS} = 15V, V_{GS} = 0, f = 400MHz$	-	-	1000	mho
Output Admittance	$ y_{os} $	$V_{DS} = 15V, V_{GS} = 0, f = 1kHz$	-	-	60	mho
Output Conductance	$Re(y_{os})$	$V_{DS} = 15V, V_{GS} = 0, f = 400MHz$	-	-	100	mho
Forward Transconductance	g_{fs}	$V_{DS} = 15V, V_{GS} = 0, f = 400MHz$	3000	-	-	mho
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0, f = 1MHz$	-	-	5	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 15V, V_{GS} = 0, f = 1MHz$	-	-	1	pF
Output Capacitance	C_{oss}	$V_{DS} = 15V, V_{GS} = 0, f = 1MHz$	-	-	2	pF

Electrical Characteristics Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Functional Characteristics							
Noise Figure	NF	$V_{DS} = 15\text{V}, I_D = 4\text{mA}, R_G \approx 1\text{k}^\circ$	$f = 100\text{MHz}$	-	-	2	dB
			$f = 400\text{MHz}$	-	-	4	dB
Common Source Power Gain	G_{ps}	$V_{DS} = 15\text{V}, I_D = 4\text{mA}$	$f = 100\text{MHz}$	18	-	30	dB
			$f = 400\text{MHz}$	10	-	20	dB

