

NTE458 N-Channel Silicon JFET General Purpose, Low Noise, Audio Frequency Amplifier

Features:

- Very Low Noise
- Low Gate Current

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Gate-Drain Voltage, V_{GDO}	-50V
Gate-Source Voltage, V_{GSO}	-50V
Drain-Source Voltage ($V_{DS} = -2V$), V_{DSX}	50V
Drain Current, I_D	20mA
Gate Current, I_G	10mA
Total Device Dissipation, P_T	250mW
Operating Junction Temperature, T_J	+125°C
Storage Temperature Range, T_{stg}	-55° to +125°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Reverse Current	I_{GSS}	$V_{GS} = -20V, V_{DS} = 0$	-	-	-1	nA
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 10V, V_{GS} = 0$	0.5	3.0	12	mA
Gate-Source Voltage	$V_{GS(off)}$	$V_{DS} = 10V, I_D = 10\mu A$	-0.13	-0.5	-1.5	V
Forward Transconductance	g_{fs}	$V_{DS} = 10V, I_D = 0.5mA, f = 1kHz$	4.0	5.2	-	mhos
		$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	4.0	12	-	mhos
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	-	13	-	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	-	2.6	-	pF
Noise Frequency	NF	$V_{DS} = 10V, V_{GS} = 0, R_G = 1k\Omega, f = 10Hz$	-	5.0	10	dB
		$V_{DS} = 10V, V_{GS} = 0, R_G = 1k\Omega, f = 100Hz$	-	1.0	3.0	dB
		$V_{DS} = 10V, V_{GS} = 0, R_G = 1k\Omega, f = 1kHz$	-	0.6	1.5	dB
Noise Voltage	NV	$I_D = 0.5mA, R_G = 1k\Omega, f = 10Hz \text{ to } 1kHz \text{ (at } V_G = -3dB)$	-	15	20	mV

