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## NTE461 Silicon N-Channel JFET Transistor Dual, Matched Pair DC Amp/Sampler/Chopper

**Features:**

- High Input Impedance:  $I_G < 50\text{pA}$
- Minimum System Error and Calibrations
- TO-71 Case Style

**Absolute Maximum Ratings:**

Gate Drain or Gate Source Voltage .....	-50V
Gate Current .....	30mA
Device Dissipation ( $T_A = +25^\circ\text{C}$ , Each Side) .....	250mW
Derate Above $25^\circ\text{C}$ .....	1.67mW/ $^\circ\text{C}$
Total Device Dissipation ( $T_A = +25^\circ\text{C}$ ) .....	400mW
Derate Above $25^\circ\text{C}$ .....	2.67mW/ $^\circ\text{C}$
Storage Temperature Range .....	-65° to +200°C
Lead Temperature (During Soldering, 1/16" from case for 30sec) .....	+300°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1\mu\text{A}, V_{DS} = 0$	-50	-	-	V
Gate Reverse Current	$I_{GSS}$	$V_{GS} = -30\text{V}, V_{DS} = 0$	-	-	-100	pA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DG} = 15\text{V}, I_D = 0.5\text{nA}$	-0.5	-	-4.5	V
Saturation Drain Current	$I_{DSS}$	$V_{DS} = 15\text{V}, V_{GS} = 0$	0.5	-	8.0	mA
Gate Operating Current	$I_G$	$V_{DG} = 15\text{V}, I_D = 200\mu\text{A}$	-	-	-50	pA
<b>Dynamic Characteristics</b>						
Forward Transconductance	$g_{fs}$	$g = 1\text{kHz}$	1500	-	6000	$\mu\text{mhos}$
Input Capacitance	$C_{iss}$	$V_{DS} = 15\text{V}, V_{GS} = 0$	-	-	6	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 15\text{V}, V_{GS} = 0$	-	-	2	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
<b>Matching Characteristics</b>							
Differential Gate Current	$I_{G1}-I_{G2}$	$V_{DG} = 15\text{V}, I_D = 200\mu\text{A}, T_A = +25^\circ\text{C}$	-	-	5	nA	
Saturation Drain Current Ratio	$I_{DSS1}/I_{DSS2}$	$V_{DS} = 15\text{V}, V_{GS} = 0$ , Note 1	0.95	-	1.0		
Differential Gate-Source Voltage	$V_{GS1}-V_{GS2}$	$V_{GD} = 15\text{V}$	$I_D = 50\mu\text{A}$	-	-	15	mV
			$I_D = 200\mu\text{A}$	-	-	15	mV
Gate-Source Voltage Differential Drift		$V_{DG} = 15\text{V}, I_D = 200\mu\text{A}$ , Note 2	$T_A = +25^\circ\text{C}/T_B = +125^\circ\text{C}$	-	-	40	$\mu\text{V}/^\circ\text{C}$
			$T_A = -55^\circ\text{C}/T_B = +25^\circ\text{C}$	-	-	40	$\mu\text{V}/^\circ\text{C}$
Transconductance Ratio	$g_{fs1}/g_{fs2}$		0.95	-	1.0		
Differential Output Conductance	$g_{os1}-g_{os2}$		-	-	3	$\mu\text{mhos}$	

Note 1. Assumes smaller value in numerator.

Note 2. Measured at end points,  $T_A$  and  $T_B$ .

