ELECTRONICS, INC.
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NTE459
N–Channel Silicon JFET Transistor
AF Amplifier/Chopper/Switch

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Drain–Source Voltage, V_{DS} 50V
Drain–Gate Voltage, V_{DG} 50V
Gate–Source Voltage, V_{GS} . . . . . –50V
Drain Current, I_D 10mA
Total Device Dissipation (T_A = +25°C), P_D 300mW
Derate Above 25°C . . . . . 2mW/°C
Operating Junction Temperature, T_J . . . . . +175°C
Storage Temperature Range, T_{stg} . . . . . –55° to +200°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Gate–Source Breakdown Voltage	$V_{(BR)GSS}$	I_G = –1μA, V_{DS} = 0	–50	–	–	V
Gate Reverse Current	I_{GSS}	V_{GS} = –30V, V_{DS} = 0	–	–	–0.1	nA
		V_{GS} = –30V, V_{DS} = 0, T_A = +150°C	–	–	–100	nA
Gate–Source Cutoff Voltage	$V_{GS(off)}$	I_D = 0.5nA, V_{DS} = 15V	–	–	–6	V
Gate–Source Voltage	V_{GS}	I_D = 200μA, V_{DS} = 15V	–1	–	–4	V
ON Characteristics						
Zero–Gate–Voltage Drain Current	I_{DSS}	V_{DS} = 15V, V_{GS} = 0, Note 1	2	–	10	mA
Small–Signal Characteristics						
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS} = 15V, V_{GS} = 0, f = 1kHz, Note 1	3000	–	6500	μmho
		V_{DS} = 15V, V_{GS} = 0, f = 100MHz	3000	–	–	μmho
Output Admittance	$\|y_{os}\|$	V_{DS} = 15V, V_{GS} = 0, f = 1kHz, Note 1	–	–	20	μmho
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0, f = 1MHz	–	–	6	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS} = 15V, V_{GS} = 0, f = 1MHz	–	–	3	pF

Note 1. Pulse Test: Pulse Width ≤ 100ms, Duty Cycle ≤ 10%.

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Functional Characteristics						
Noise Figure	NF	V_{DS} = 15V, V_{GS} = 0, R_G = 1MΩ, f = 10Hz, BW = 5Hz	–	–	5	dB
Equivalent Short–Circuit Input Noise Voltage	e_n	V_{DS} = 15V, V_{GS} = 0, f = 10Hz, BW = 5Hz	–	–	200	$nV/Hz^{1/2}$



