

NTE489

Silicon P-Channel JFET Transistor

General Purpose AF Amplifier

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

Gate-Drain Voltage (Note 1), V_{GD}	30V
Gate-Source Voltage (Note 1), V_{GS}	30V
Gate Current, I_G	-50mA
Total Device Dissipation ($T_A = +25^\circ\text{C}$), P_D	360mW
Derate Above 25°C	3.27mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-55° to $+135^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" from case for 10sec), T_L	$+300^\circ\text{C}$

Note 1. Geometry is symmetrical. Units may be operated with source and drain leads interchanged.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = 1\mu\text{A}$, $V_{DS} = 0$	30	—	—	V
Gate Reverse Current	I_{GSS}	$V_{GS} = 20\text{V}$, $V_{DS} = 0$, Note 2	—	—	200	pA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = -1\text{nA}$, $V_{DS} = -15\text{V}$	0.5	—	2.0	V
Gate Current	I_G	$I_D = -2\text{mA}$, $V_{DG} = -15\text{V}$, Note 2	—	15	—	pA
Saturation Drain Current	I_{DSS}	$V_{DS} = -15\text{V}$, $V_{GS} = 0$	-2	—	-15	mA
Dynamic Characteristics						
Common-Source Forward Transconductance	g_{fs}	$V_{DS} = -15\text{V}$, $V_{GS} = 0$, $f = 1\text{kHz}$, Note 3	6000	—	15000	μmho
Common-Source Output Conductance	g_{os}	$V_{DS} = -15\text{V}$, $V_{GS} = 0$, $f = 1\text{kHz}$	—	—	200	μmho
Common-Source Input Capacitance	C_{iss}	$V_{DS} = -15\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$	—	32	—	pF
Common-Source Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -15\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$	—	4	—	pF
Equivalent Short-Circuit Input Noise Voltage	e_n	$V_{DS} = -10\text{V}$, $I_D = -2\text{mA}$, $f = 1\text{kHz}$	—	6	—	$\frac{\text{nV}}{\sqrt{\text{Hz}}}$

Note 2. Approximately doubles for every 10°C increase in T_A .

Note 3. Pulse test duration = 2ms.

