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## NTE466 Silicon N-Channel JFET Transistor Chopper, High Speed Switch

### Absolute Maximum Ratings:

Drain-Source Voltage, $V_{DS}$ .....	40V
Drain-Gate Voltage, $V_{DG}$ .....	40V
Reverse Gate-Source Voltage, $V_{GSR}$ .....	-40V
Forward Gate Current, $I_{G(f)}$ .....	50mA
Total Device Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_D$ .....	360mW
Derate Above $25^\circ\text{C}$ .....	2.4mW/ $^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+175^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = 1A, V_{DS} = 0$	-40	-	-	V
Gate Reverse Current	$I_{GSS}$	$V_{GS} = -20V, V_{DS} = 0$	-	-	0.25	nA
		$V_{GS} = -20V, V_{DS} = 0, T_A = +150^\circ\text{C}$	-	-	0.5	$\mu\text{A}$
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 15V, I_D = 0.5nA$	-4	-	-10	V
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = 15V, V_{GS} = -10V$	-	-	0.25	nA
		$V_{DS} = 15V, V_{GS} = -10V, T_A = +150^\circ\text{C}$	-	-	0.5	$\mu\text{A}$
<b>ON Characteristics</b>						
Zero-Gate-Voltage Drain Current	$I_{DSS}$	$V_{DS} = 15V, V_{GS} = 0$ , Note 1	50	-	-	mA
Drain-Source ON-Voltage	$V_{DS(on)}$	$I_D = 20mA, V_{GS} = 0$	-	-	0.75	V
<b>Small-Signal Characteristics</b>						
Drain-Source "ON" Resistance	$r_{DS(on)}$	$V_{GS} = 0, I_D = 0, f = 1kHz$	-	-	25	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 0, V_{GS} = -10V, f = 1MHz$	-	-	18	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 0, V_{GS} = -10V, f = 1MHz$	-	-	0.8	pF
<b>Switching Characteristics (Note 2)</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V, I_{D(on)} = 20mA,$ $V_{GS(on)} = 0, V_{GS(off)} = -10V$	-	-	6	ns
Rise Time	$t_r$		-	-	3	ns
Turn-Off Time	$t_{off}$		-	-	25	ns

Note 1. Pulse Test: Pulse Width = 100ms, Duty Cycle  $\leq$  10%.

Note 2. The  $I_{D(on)}$  values are nominal; exact values vary slightly with transistor parameters.

