

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°C	2.4mW/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+175^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
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
		$V_{GS} = -20V, V_{DS} = 0, T_A = +150^{\circ}C$	–	–	0.5	μA
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
		$V_{DS} = 15V, V_{GS} = -10V, T_A = +150^{\circ}C$	–	–	0.5	μA
ON Characteristics						
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
Small–Signal Characteristics						
Drain–Source “ON” Resistance	$r_{DS(on)}$	$V_{GS} = 0, I_D = 0, f = 1kHz$	–	–	25	Ω
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
Switching Characteristics (Note 2)						
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.

