

NTE467

Silicon N-Channel JFET Transistor Chopper, High Speed Switch

Absolute Maximum Ratings:

Drain-Source Voltage, V_{DS}	30V
Drain-Gate Voltage, V_{DG}	30V
Reverse Gate-Source Voltage, V_{GSR}	30V
Forward Gate Current, $I_{G(f)}$	10mA
Total Device Dissipation ($T_A = +25^\circ\text{C}$), P_D	310mW
Derate Above 25°C	2.82mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$

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	$V_{(BR)GSS}$	$I_G = 10\mu A$, $V_{DS} = 0$	30	–	–	V
Gate Reverse Current	I_{GSS}	$V_{GS} = -15V$, $V_{DS} = 0$	–	–	1.0	nA
		$V_{GS} = -15V$, $V_{DS} = 0$, $T_A = +100^{\circ}C$	–	–	1.0	μA
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = 15V$, $V_{GS} = -12V$	–	–	1.0	nA
		$V_{DS} = 15V$, $V_{GS} = -12V$, $T_A = +100^{\circ}C$	–	–	1.0	μA
ON Characteristics						
Zero–Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V$, $V_{GS} = 0$, Note 1	50	–	–	mA
Drain–Source ON–Voltage	$V_{DS(on)}$	$I_D = 12mA$, $V_{GS} = 0$	–	–	0.5	V
Static Drain–Source ON Resistance	$r_{DS(on)}$	$I_D = 1mA$, $V_{GS} = 0$	–	–	30	Ω
Input Capacitance	C_{iss}	$V_{GS} = -12V$, $V_{DS} = 0$, $f = 1MHz$	–	–	10	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GS} = -12V$, $V_{DS} = 0$, $f = 1MHz$	–	–	4	pF
Switching Characteristics						
Turn–On Delay Time	$t_{d(on)}$	$V_{DD} = 10V$, $V_{GS(on)} = 0$, $V_{GS(off)} = 10V$, $I_{D(on)} = 12mA$, $R_G = 50\Omega$	–	–	4	ns
Rise Time	t_r		–	–	5	ns
Turn–Off Delay Time	$t_{d(off)}$		–	–	5	ns
Fall Time	t_f		–	–	10	ns

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 3\%$.

