



ELECTRONICS, INC.

44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
http://www.nteinc.com

NTE2974 MOSFET N-Channel, Enhancement Mode High Speed Switch

Features:

- Low On-State Resistance: $R_{DS(on)} = 1.1\Omega$ Max ($V_{GS} = 10V, I_D = 3A$)
- Low Input Capacitance: $C_{iss} = 1150pF$ Typ
- High Avalanche Capability Ratings
- Isolated TO220 Type Package

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

Drain-to-Source Voltage, V_{DSS}	600V
Gate-to-Source Voltage, V_{GSS}	$\pm 30V$
Drain Current, I_D	
DC	$\pm 6.0A$
Pulse (Note 1)	$\pm 24A$
Total Power Dissipation, P_T	
$T_C = +25^\circ C$	35W
$T_A = +25^\circ C$	2.0W
Single Avalanche Current (Note 2), I_{AS}	6.0A
Single Avalanche Energy (Note 2), E_{AS}	12mJ
Channel Temperature, T_{ch}	$+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Note 1. $PW \leq 10\mu s$, Duty Cycle $\leq 1\%$.

Note 2. Starting $T_{ch} = +25^\circ C$, $R_G = 25\Omega$, $V_{GS} = 20V \rightarrow 0$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-to-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$	-	0.8	1.1	Ω
Gate-to-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V, I_D = 1mA$	2.5	-	3.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V, I_D = 3A$	2.0	-	-	S
Drain Leakage Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0$	-	-	100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30V, V_{DS} = 0$	-	-	± 100	nA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$	-	1150	-	pF
Output Capacitance	C_{oss}		-	260	-	pF
Reverse Transfer Capacitance	C_{rss}		-	60	-	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10\text{V}, V_{DD} = 150\text{V}, I_D = 3\text{A}, R_G = 10\Omega, R_L = 37.5\Omega$	-	15	-	ns
Rise Time	t_r		-	15	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	75	-	ns
Fall Time	t_f		-	13	-	ns
Total Gate Charge	Q_G	$V_{GS} = 10\text{V}, I_D = 6\text{A}, V_{DD} = 480\text{V}$	-	40	-	nC
Gate-to-Source Charge	Q_{GS}		-	6	-	nC
Gate-to-Drain Charge	Q_{GD}		-	20	-	nC
Diode Forward Voltage	$V_{F(S-D)}$	$I_F = 6\text{A}, V_{GS} = 0$	-	1.0	-	V
Reverse Recovery Time	t_{rr}	$I_F = 6\text{A}, di/dt = 50\text{A}/\mu\text{s}$	-	370	-	ns
Reverse Recovery Charge	Q_{rr}		-	1.5	-	μC

