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: $R_{DS(on)}$ = 1.1Ω 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°C unless otherwise specified)

Drain–to–Source Voltage, V_{DSS} 600V
Gate–to–Source Voltage, V_{GSS} . . . . . ±30V
Drain Current, I_D
  DC . . . . . ±6.0A
  Pulse (Note 1) . . . . . ±24A
Total Power Dissipation, P_T
  T_C = +25°C 35W
  T_A = +25°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°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Note 1. PW ≤ 10μs, Duty Cycle ≤ 1%.
Note 2. Starting T_{ch} = +25°C, R_G = 25Ω, V_{GS} = 20V → 0.

Electrical Characteristics: (T_A = +25°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} = ±30V, V_{DS} = 0	–	–	±100	nA

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0, f = 1MHz	–	1150	–	pF
Output Capacitance	C_{oss}		–	260	–	pF
Reverse Transfer Capacitance	C_{rss}		–	60	–	pF
Turn–On Delay Time	$t_{d(on)}$	V_{GS} = 10V, V_{DD} = 150V, I_D = 3A, R_G = 10Ω, R_L = 37.5Ω	–	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} = 10V, I_D = 6A, V_{DD} = 480V	–	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 = 6A, V_{GS} = 0	–	1.0	–	V
Reverse Recovery Time	t_{rr}	I_F = 6A, di/dt = 50A/μs	–	370	–	ns
Reverse Recovery Charge	Q_{rr}		–	1.5	–	μC