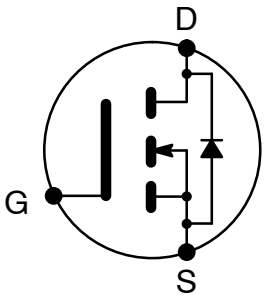
ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE2992
MOSFET
N–Channel, Enhancement Mode
High Speed Switch
TO–220 Full Pack Type Package

Features:
- 4V Gate Drive
- Low Drain–Source On–Resistance
- High Forward Transfer Admittance
- Low Leakage Current



Applications:
- Switching Regulators
- UPS
- DC–DC Converters
- General Purpose Power Amplifier

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Drain–Source Voltage, V_{DSS} 600V
Drain–Gate Voltage (R_{GS} = 20kΩ), V_{DGR} 600V
Gate–Source Voltage, V_{GSS} . . . . . ±30V
Drain Current, I_D
  Continuous 6A
  Pulsed 24A
Maximum Power Dissipation (T_C = +25°C), P_D 45W
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 62.5°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.77°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 10mA, V_{GS} = 0V	600	–	–	V
Gate Threshold Voltage	$V_{GS(th)}$	I_D = 1mA, V_{DS} = 10V	1.5	–	3.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600V, V_{GS} = 0V	–	–	300	μA
Gate–Source Leakage Current	I_{GSS}	V_{GS} = ±25V, V_{DS} = 0V	–	–	±100	nA
Drain–Source On–State Resistance	$R_{DS(on)}$	I_D = 3A, V_{GS} = 10V	–	0.95	1.25	Ω
Forward Transfer Admittance	g_{fs}	I_D = 3A, V_{DS} = 10V	3	4	–	S
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz	–	1400	2000	pF
Output Capacitance	C_{oss}		–	75	120	pF
Reverse Transfer Capacitance	C_{rss}		–	250	380	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn−On Time	$t_{d(on)}$	V_{DD} = 300V, I_D = 3A, V_{GS} = 10V, R_L = 100Ω	–	40	80	ns
Rise Time	t_r		–	25	50	ns
Turn−Off Time	$t_{d(off)}$		–	85	170	ns
Fall Time	t_f		–	20	40	ns
Total Gate Charge	Q_g	V_{DD} = 400V, V_{GS} = 10V, I_D = 6A	–	56	110	nC
Gate−Source Charge	Q_{gs}		–	32	–	nC
Gate−Drain ("Miller") Charge	Q_{gd}		–	24	–	nC
Source−Drain Diode Ratings and Characteristics: (T_A = +25°C unless otherwise specified)						
Continuous Drain Reverse Current	I_{DR}		–	–	6	A
Pulse Drain Reverse Current	I_{DRP}		–	–	24	A
Diode Forward Voltage	V_{DSF}	I_{DR} = 6A, V_{GS} = 0V	–	–	–2	V
Reverse Recovery Time	t_{rr}	I_{DR} = 6A, V_{GS} = 0V, dI_{DR}/dt = 100A/μs	–	460	–	ns
Reverse Recovered Charge	Q_{rr}		–	3.5	–	μC