



ELECTRONICS, INC.

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NTE2992 MOSFET N-Channel, Enhancement Mode High Speed Switch

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

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

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

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Time	$t_{d(on)}$	$V_{DD} = 300\text{V}, I_D = 3\text{A}, V_{GS} = 10\text{V}, R_L = 100\Omega$	-	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	$V_{DD} = 400\text{V}, V_{GS} = 10\text{V}, I_D = 6\text{A}$	-	56	110	nC
Gate-Source Charge	Q_{gs}		-	32	-	nC
Gate-Drain ("Miller") Charge	Q_{gd}		-	24	-	nC

Source-Drain Diode Ratings and Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Continuous Drain Reverse Current	I_{DR}		-	-	6	A
Pulse Drain Reverse Current	I_{DRP}		-	-	24	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 6\text{A}, V_{GS} = 0\text{V}$	-	-	-2	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 6\text{A}, V_{GS} = 0\text{V}, di_{DR}/dt = 100\text{A}/\mu\text{s}$	-	460	-	ns
Reverse Recovered Charge	Q_{rr}		-	3.5	-	μC

