

NTE2976 MOSFET N-Channel, Enhancement Mode High Speed Switch

Features:

- Low Input Capacitance
- Low Static $R_{DS(on)}$
- Fast Switching Time
- Guaranteed Avalanche Resistance

Applications:

- Switching Power Supply of AC 240V Input
- High Voltage Power Supply
- Inverter

Absolute Maximum Ratings: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Drain-Source Voltage, V_{DSS}	700V
Gate-Source Voltage, V_{GSS}	$\pm 30\text{V}$
Drain Current, I_D	
Continuous DC	6A
Peak (Pulse Width $\leq 10\mu\text{s}$, Duty Cycle $\leq 1/100$)	18A
Continuous DC Source Current, I_S	6A
Total Power Dissipation, P_T	50W
Repetitive Avalanche Current ($T_{ch} = +150^\circ\text{C}$), I_{AR}	6A
Single Avalanche Energy ($T_{ch} = +25^\circ\text{C}$), E_{AS}	190mJ
Repetitive Avalanche Energy ($T_{ch} = +25^\circ\text{C}$), E_{AR}	19mJ
Operating Channel Temperature, T_{ch}	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	2.5°C/W
Dielectric Strength (Terminals-to-Case, AC, 1 minute), V_{dis}	2kV
Mounting Torque, TOR	
Maximum	0.5N•m
Recommended	0.3N•m

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}, V_{GS} = 0\text{V}$	700	–	–	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 700\text{V}, V_{GS} = 0\text{V}$	–	–	250	μA
Gate–Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30\text{V}, V_{DS} = 0\text{V}$	–	–	± 0.1	μA
Forward Transconductance	g_{fs}	$I_D = 3\text{A}, V_{DS} = 10\text{V}$	3	5	–	S
Static Drain–Source On–State Resistance	$R_{DS(on)}$	$I_D = 3\text{A}, V_{GS} = 10\text{V}$	–	1.5	2.0	Ω
Gate Threshold Voltage	V_{TH}	$I_D = 1\text{mA}, V_{DS} = 10\text{V}$	2.5	3.0	3.5	V
Source–Drain Diode Forward Voltage	V_{SD}	$I_S = 3\text{A}, V_{GS} = 0\text{V}$	–	–	1.5	V
Total Gate Charge	Q_g	$V_{DD} = 400\text{V}, V_{GS} = 10\text{V}, I_D = 6\text{A}$	–	35	–	nC
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$	–	1250	–	pF
Reverse Transfer Capacitance	C_{rss}		–	250	–	pF
Output Capacitance	C_{oss}		–	530	–	pF
Turn–On Time	t_{on}	$I_D = 3\text{A}, R_L = 50\Omega, V_{GS} = 10\text{V}$	–	60	110	ns
Turn–Off Time	t_{off}		–	160	250	ns

