

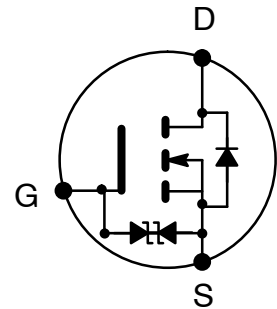


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NTE2911 MOSFET N-Channel, Enhancement Mode High Speed Switch TO-220 Full Pack Type Package

Features:

- Low Drain-Source ON-Resistance
- High Forward Transfer Admittance
- Low Leakage Current
- Enhancement Mode



Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$, Note 1 unless otherwise specified)

Drain-Source Voltage, V_{DSS}	500V
Drain-Gate Voltage ($R_{GS} = 20\text{k}\Omega$), V_{DGR}	500V
Gate-Source Voltage, V_{GSS}	$\pm 30\text{V}$
Drain Current (Note 2), I_D	
Continuous	12A
Pulse ($t = 1\text{ms}$)	48A
Drain Power Dissipation ($T_C = +25^\circ\text{C}$), P_D	40W
Single Pulse Avalanche Energy (Note 3), E_{AS}	364mJ
Avalanche Current, I_{AR}	12A
Repetitive Avalanche Energy (Note 4), E_{AR}	4mJ
Channel Temperature T_{ch}	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$
Thermal Resistance, Channel-to-Case, $R_{th(ch-c)}$	3.125°C/W
Thermal Resistance, Channel-to-Ambient, $R_{th(ch-a)}$	62.5°C/W

Note 1. Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the Absolute Maximum Ratings.

Note 2. Ensure that the channel temperature does not exceed $+150^\circ\text{C}$.

Note 3. $V_{DD} = 90\text{V}$, $T_{ch} = +25^\circ\text{C}$ (Initial), $L = 4.3\text{mH}$, $I_{AR} = 12\text{A}$, $R_G = 25\Omega$.

Note 4. Repetitive rating: pulse width limited by maximum channel temperature.



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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 25\text{V}, V_{DS} = 0\text{V}$	-	-	± 10	μA
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$V_{DS} = 0\text{V}, I_G = \pm 10\mu\text{A}$	± 30	-	-	V
Drain Cut-Off Current	I_{DSS}	$V_{DS} = 500\text{V}, V_{GS} = 0\text{V}$	-	-	100	μA
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 10\text{mA}$	500	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	2.0	-	4.0	V
Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 6\text{A}$	-	0.4	0.52	Ω
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}, I_D = 6\text{A}$	3.5	8.5	-	S
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = 25\text{V}, f = 1\text{MHz}$	-	1500	-	pF
Output Capacitance	C_{oss}		-	180	-	pF
Reverse Transfer Capacitance	C_{rss}		-	15	-	pF
Turn-On Time	t_{on}	$V_{DD} = 200\text{V}, I_D = 6\text{A}, R_L = 33\Omega,$ $V_{GS} = 10\text{V}, \text{Duty} \leq 1\%, t_w = 10\mu\text{s}$	-	50	-	ns
Rise Time	t_r		-	22	-	ns
Turn-Off Time	t_{off}		-	170	-	ns
Fall Time	t_f		-	36	-	ns
Total Gate Charge	Q_g	$I_D = 12\text{A}, V_{DD} = 400\text{V}, V_{GS} = 10\text{V}$	-	42	-	nC
Gate-to-Source Charge	Q_{gs}		-	23	-	nC
Gate-to-Drain ("Miller") Charge	Q_{gd}		-	19	-	nC

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Drain Reverse Current	I_{DR}	Note 2	-	-	12	A
Pulse Drain Reverse Current	I_{DRP}	Note 2	-	-	48	A
Diode Forward Voltage	V_{DSF}	$I_{DR} = 12\text{A}, V_{GS} = 0\text{V}$	-	-	-1.7	V
Reverse Recovery Time	t_{rr}	$I_{DR} = 12\text{A}, V_{GS} = 0\text{V},$ $di_{DR}/dt = 100\text{A}/\mu\text{s}$	-	1200	-	ns
Reverse Recovery Charge	Q_{rr}		-	16	-	μC

Note 2. Ensure that the channel temperature does not exceed $+150^\circ\text{C}$.

