

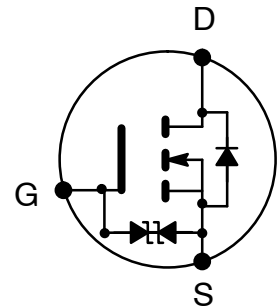


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NTE2929 MOSFET N-Channel, Enhancement Mode TO-220 Full Pack Type Package

Features:

- Low Drain-Source ON Resistance: $R_{DS(on)} = 2.3\Omega$ Typ
- High Forward Transfer Admittance: $|Y_{fs}| = 4.4S$ Typ
- Low Leakage Current: $I_{DSS} = 100\mu A$ Max ($V_{DS} = 720V$)
- Enhancement Mode: $V_{th} = 2.0$ to $4.0V$ ($V_{DS} = 10V, I_D = 1mA$)



Applications:

- DC-DC Converter
- Motor Driver

Absolute Maximum Ratings: ($T_A = +25^\circ C$ unless otherwise specified)

Drain-Source Voltage, V_{DSS}	900V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$), V_{DGR}	900V
Gate-Source Voltage, V_{GSS}	$\pm 30V$
Drain Current (Note 1), I_D	
Continuous	5A
Pulsed	15A
Drain Power Dissipation ($T_C = +25^\circ C$), P_D	45W
Single Pulsed Avalanche Energy (Note 2), E_{AS}	595mJ
Avalanche Current, I_{AR}	5A
Repetitive Avalanche Energy (Note 3), E_{AR}	4.5mJ
Channel Temperature, T_{ch}	$+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$
Maximum Thermal Resistance, Channel-to-Case, R_{thCHC}	$2.78^\circ C/W$
Maximum Thermal Resistance, Channel-to-Ambient, R_{thCHA}	$62.5^\circ C/W$

Note 1. Please use device on condition that the channel temperature is below $+150^\circ C$.

Note 2. $L = 43.6mH, I_{AR} = 5A, V_{DD} = 90V, R_G = 25\Omega, T_{ch} = +25^\circ C$ (initial).

Note 3. 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}	$V_{GS} = \pm 30\text{V}, V_{DS} = 0\text{V}$	-	-	± 10	μA
Gate-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}	$V_{DS} = 720\text{V}, V_{GS} = 0$	-	-	100	μA
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 10\text{mA}$	500	-	-	V
Gate Threshold Voltage	V_{th}	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	2.0	-	4.0	V
Drain-Source ON Resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 3\text{A}$	-	2.3	2.5	Ω
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 20\text{V}, I_D = 3\text{A}$	1.1	4.4	-	S
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = 25\text{V},$ $f = 1\text{MHz}$	-	1200	-	pF
Output Capacitance	C_{oss}		-	120	-	pF
Reverse Transfer Capacitance	C_{rss}		-	20	-	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 200\text{V}, I_D = 3\text{A},$ $V_{GS} = 10\text{V}, R_L = 66.7\Omega, \text{Note 4}$	-	90	-	ns
Rise Time	t_r		-	40	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	200	-	ns
Fall Time	t_f		-	60	-	ns
Total Gate Charge	Q_g	$V_{DD} = 400\text{V}, I_D = 5\text{A}, V_{GS} = 10\text{V}$	-	45	-	nC
Gate-Source Charge	Q_{gs}		-	25	-	nC
Gate-Drain (Miller) Charge	Q_{gd}		-	20	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Drain-Source Reverse Current	I_{DR}	Note 1	-	-	5	A
Pulsed Drain-Source Reverse Current	I_{DRP}	Note 1	-	-	15	A
Diode Forward Voltage	V_{DSF}	$V_{GS} = 0\text{V}, I_{DR} = 5\text{A}$	-	-	-1.9	V
Reverse Recovery Time	t_{rr}	$V_{GS} = 0\text{V}, I_{DR} = 5\text{A},$ $dI_{DR}/dt = 100\text{A}/\mu\text{s}$	-	1300	-	ns
Reverse Recovery Charge	Q_{rr}		-	11	-	μC

Note 1. Please use device on condition that the channel temperature is below $+150^\circ\text{C}$.

Note 4. Duty Cycle $\leq 1\%$, $t_w = 10\mu\text{s}$.

