



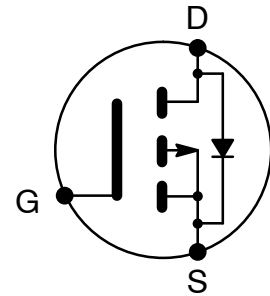
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NTE2918
MOSFET
P-Ch, Enhancement Mode
High Speed Switch
TO220 Type Package

Features:

- Dynamic dv/dt Rating
- +175°C Operating Temperature
- Fast Switching
- Fully Avalanche Rated



Absolute Maximum Ratings:

Continuous Drain Current ($V_{GS} = -10V$), I_D	
$T_C = +25^\circ C$	-31A
$T_C = +100^\circ C$	-22A
Pulsed Drain Current (Note 1), I_{DM}	-110A
Power Dissipation ($T_C = +25^\circ C$), P_D	110W
Derate Linearly Above 25°C	0.71W/°C
Gate-to-Source Voltage, V_{GS}	± 20
Single Pulse Avalanche Energy (Note 2), E_{AS}	280mJ
Avalanche Current (Note 1), I_{AR}	-16A
Repetitive Avalanche Energy (Note 1), E_{AR}	11mJ
Peak Diode Recovery dv/dt (Note 3), dv/dt	-5.0V/ns
Operating Junction Temperature Range, T_J	-55° to +175°C
Storage Temperature Range, T_{stg}	-55° to +175°C
Lead Temperature (During Soldering, 1.6mm from case for 10sec), T_L	+300°C
Mounting Torque (6-32 or M3 Screw)	10 lbf•in (1.1N•m)
Thermal Resistance, Junction-to-Case, R_{thJC}	1.4°C/W
Thermal Resistance, Junction-to-Ambient, R_{thJA}	62°C/W
Typical Thermal Resistance, Case-to-Sink (Flat, Greased Surface), R_{thCS}	0.5°C/W

Note 1. Repetitive rating; pulse width limited by maximum junction temperature.

Note 2. $V_{DD} = -25V$, starting $T_J = +25^\circ C$, $L = 2.1mH$, $R_G = 25\pm$, $I_{AS} = -16A$

Note 3. $I_{SD} \leq -16A$, $di/dt \leq -280A/\mu s$, $V_{DD} \leq -55V$, $T_J \leq +175^\circ C$

Note 4. Pules Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-55	-	-	V
Breakdown Voltage Temp. Coefficient	$\frac{V_{(BR)DSS}}{T_J}$	Reference to $+25^\circ\text{C}$, $I_D = -1\text{mA}$	-	-0.034	-	V/ $^\circ\text{C}$
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -16A$, Note 4	-	-	0.06	\pm
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-2.0	-	-4.0	V
Forward Transconductance	g_{fs}	$V_{DS} = -25V, I_D = -16A$	8.0	-	-	mhos
Drain-to-Source Leakage Current	I_{DSS}	$V_{DS} = -55V, V_{GS} = 0V$	-	-	-25	$\leq A$
		$V_{DS} = -44V, V_{GS} = 0V, T_J = +125^\circ\text{C}$	-	-	-250	$\leq A$
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS} = 20V$	-	-	100	nA
Gate-to-Source Reverse Leakage	I_{GSS}	$V_{GS} = -20V$	-	-	-100	nA
Total Gate Charge	Q_g	$I_D = -16A, V_{DS} = -44V, V_{GS} = -10V$, Note 4	-	-	63	nC
Gate-to-Source Charge	Q_{gs}		-	-	13	nC
Gate-to-Drain ("Miller") Charge	Q_{gd}		-	-	29	nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -28V, I_D = -16A, R_G = 6.8\pm$, $R_D = 1.6\pm$, Note 4	-	14	-	ns
Rise Time	t_r		-	66	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	39	-	ns
Fall Time	t_f		-	63	-	ns
Internal Drain Inductance	L_D	Between lead, .250in. (6.0) mm from package and center of die contact	-	4.5	-	nH
Internal Source Inductance	L_S		-	7.5	-	nH
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -25V, f = 1\text{MHz}$	-	1200	-	pF
Output Capacitance	C_{oss}		-	520	-	pF
Reverse Transfer Capacitance	C_{rss}		-	250	-	pF

Source-Drain Ratings and Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Source Current (Body Diode)	I_S		-	-	-31	A
Pulsed Source Current (Body Diode)	I_{SM}	Note 1	-	-	-110	A
Diode Forward Voltage	V_{SD}	$T_J = +25^\circ\text{C}, I_S = -16A, V_{GS} = 0V$, Note 4	-	-	-1.3	V
Reverse Recovery Time	t_{rr}	$T_J = +25^\circ\text{C}, I_F = -16A$, $di/dt = -100A/\mu s$, Note 4	-	71	110	ns
Reverse Recovery Charge	Q_{rr}		-	170	250	nC

Note 1. Repetitive rating; pulse width limited by maximum junction temperature.

Note 4. Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$.

