ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
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NTE491
MOSFET
N–Ch, Enhancement Mode
High Speed Switch

Absolute Maximum Ratings:

Drain–Source Voltage, V_{DS} 60V
Drain–Gate Voltage (R_{GS} = 1MΩ), V_{DGR} 60V
Gate–Source Voltage, V_{GS} . . . . . ±40V
Drain Current, I_D
  Continuous 200mA
  Pulsed 500mA
Total Device Dissipation (T_A = +25°C), P_D 350mW
  Derate above 25°C . . . . . 2.8mW/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient, $R_{th\ (JA)}$ . . . . . 312.5°C/W
Maximum Lead Temperature (During Soldering, 1/16” from case, 10sec), T_L . . . . . +300°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Zero–Gate–Voltage Drain Current	I_{DSS}	V_{DS} = 48V, V_{GS} = 0	–	–	1.0	μA
		V_{DS} = 48V, V_{GS} = 0, T_J = +125°C	–	–	1.0	mA
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0, I_D = 10μA	60	–	–	V
Gate–Body Leakage Current, Forward	I_{GSSF}	V_{GSF} = 15V, V_{DS} = 0	–	–	–10	nA
ON Characteristics (Note 1)						
Gate Threshold Voltage	$V_{GS(Th)}$	I_D = 1mA, V_{DS} = V_{GS}	0.8	–	3.0	V
Static Drain–Source ON Resistance	$r_{DS(on)}$	V_{GS} = 10V, I_D = 500mA	–	–	5.0	Ω
		V_{GS} = 4.5V, I_D = 75mA	–	–	6.0	Ω
Drain–Source ON–Voltage	$V_{DS(on)}$	V_{GS} = 10V, I_D = 500mA	–	–	2.5	V
		V_{GS} = 4.5V, I_D = 75mA	–	–	0.45	V
ON–State Drain Current	$I_{d(on)}$	V_{GS} = 4.5V, V_{DS} = 10V	75	–	–	mA
Forward Transconductance	g_{fs}	V_{DS} = 10V, I_D = 200mA	100	–	–	μmhos

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 25V, V_{GS} = 0, f = 1MHz	–	–	60	pF
Reverse Transfer Capacitance	C_{rss}		–	–	25	pF
Output Capacitance	C_{oss}		–	–	5.0	pF
Switching Characteristics						
Turn–On Delay Time	t_{on}	V_{DD} = 15V, I_D = 500mA, R_{gen} = 25Ω, R_L = 25Ω	–	–	10	ns
Turn–Off Delay Time	t_{off}		–	–	10	ns