ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE2989
MOSFET
N–Channel, Enhancement Mode
High Speed Switch

Features:
- High Speed Switching
- Low On–Resistance
- No Secondary Breakdown
- Low Driving Power
- High Voltage
- Repetitive Avalanche Rated

Applications:
- Switching Regulators
- UPS
- DC–DC Converters
- General Purpose Power Amplifier

Absolute Maximum Ratings: (T_C = +25°C unless otherwise specified)

Drain–Source Voltage, V_{DS} 600V
Drain Current, I_D
  Continuous 10A
  Pulsed 36A
Gate–Source Voltage, V_{GS} . . . . . ±30V
Avalanche Current, Repetitive or Non–Repetitive (T_{ch} ≤ +150°C), I_{AR} 10A
Avalanche Energy, E_{AS} 64.7mJ
Maximum Power Dissipation, P_D 50W
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 62.5°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.5°C/W

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 1mA, V_{GS} = 0V		600	–	–	V
Gate Threshold Voltage	$V_{GS(th)}$	I_D = 1mA, V_{DS} = V_{GS}		3.5	4.0	4.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600V, V_{GS} = 0V	T_{ch} = +25°C	–	10	500	μA
			T_{ch} = +125°C	–	0.2	1.0	mA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate–Source Leakage Current	I_{GSS}	V_{GS} = ±30V, V_{DS} = 0V	–	10	100	nA
Drain–Source On–State Resistance	$R_{DS(on)}$	I_D = 4.5A, V_{GS} = 10V	–	0.85	1.0	Ω
Forward Transconductance	g_{fs}	I_D = 5A, V_{DS} = 25V	3	6	–	S
Input Capacitance	C_{iss}	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz	–	1100	1700	pF
Output Capacitance	C_{oss}		–	170	260	pF
Reverse Transfer Capacitance	C_{rss}		–	74	120	pF
Turn–On Time, t_{on} ($t_{on} = t_{d(on)} + t_r$)	$t_{d(on)}$	V_{CC} = 300V, I_D = 10A, V_{GS} = 10V, R_{GS} = 10Ω	–	25	40	ns
	t_r		–	70	110	ns
Turn–Off Time, $t_{o}ff$ ($t_{off} = t_{d(off)} + t_f$)	$t_{d(off)}$		–	75	120	ns
	t_f		–	40	60	ns
Avalanche Capability	I_{AV}	L = 100µH, T_{ch} = +25°C	10	–	–	A
Diode Forward On–Voltage	V_{SD}	I_F = 2 x I_{DR}, V_{GS} = 0V, T_{ch} = +25°C	–	1.0	1.5	V
Reverse Recovery Time	t_{rr}	I_F = I_{DR}, V_{GS} = 0V, $-dI_F/dt$ = 100A/µs, T_{ch} = +25°C	–	500	–	ns
Reverse Recovery Charge	Q_{rr}		–	6.5	–	µC