NTE2387
MOSFET
N−Channel Enhancement Mode,
High Speed Switch
TO220 Type Package

Absolute Maximum Ratings:

Drain−Source Voltage, V_{DS} 800V

Drain−Gate Voltage (R_{GS} = 20k±), V_{DGR} 800V

Gate−Source Voltage, V_{GS} . . . . ±30V

Pulsed Drain Current, I_{DM} 16A

Continuous Drain Current, I_D
        T_C = +25°C 4.0A
        T_C = +100°C 2.5A

Total Dissipation (T_C = +25°C), P_{tot} 125W

Operating Junction Temperature, T_J . . . . +150°C

Storage Temperature Range, T_{stg} . . . . −55° to +150°C

Maximum Thermal Resistance, Junction−to−Case, R_{thJC} . . . . 1.0°C/W

Typical Thermal Resistance, Junction−to−Ambient, R_{thJA} . . . . 60°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain−Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250° A, V_{GS} = 0	800	–	–	V
Zero−Gate Voltage Drain Current	I_{DSS}	V_{GS} = 0, V_{DS} = 800V, T_C = +25°C	–	2	20	°A
		V_{GS} = 0, V_{DS} = 800V, T_C = +125°C	–	0.1	1.0	mA
Gate−Body Leakage Current	I_{GSS}	V_{DS} = 0, V_{GS} = ±30V	–	10	100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 1mA	2.1	3.0	4.0	V
Static Drain−Source On Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 1.5A	–	2.7	3.0	±
Dynamic Characteristics						
Forward Transconductance	g_{fs}	V_{DS} = 25V, I_D = 1.5A	3.0	4.3	–	mho
Input Capacitance	C_{iss}	V_{DS} = 25V, V_{GS} = 0, f = 1MHz	–	1000	1250	pf
Output Capacitance	C_{oss}		–	80	120	pf
Reverse Transfer Capacitance	C_{rss}		–	30	50	pf
Turn−On Time	$t_{d(on)}$	V_{DD} = 30V, I_D = 2.3A, V_{GS} = 10V, R_{GS} = 50±, R_{gen} = 50±	–	10	25	ns
Rise Time	t_r		–	25	40	ns
Turn−Off Delay Time	$t_{d(off)}$		–	130	150	ns
Fall Time	t_f		–	40	60	ns

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics (Cont'd)						
Internal Drain Inductance	L_D	Measured from contact screw on tab to center of die	–	3.5	–	nH
		Measured from drain lead 6mm from package to center of die	–	4.5	–	nH
Internal Source Inductance	L_S	Measured from the source lead 6mm from package to source bonding pad	–	7.5	–	nH
Source–Drain Diode Ratings and Characteristics						
Continuous Reverse Drain Current	I_{DR}		–	–	4	A
Pulsed Reverse Drain Current	I_{DRM}		–	–	16	A
Diode Forward Voltage	V_{SD}	$I_F = 4A$, $V_{GS} = 0$	–	1.0	1.3	V
Reverse Recovery Time	t_{rr}	$I_F = 4A$, $di_F/dt = 100A/°s$, $V_{GS} = 0$, $V_R = 100V$	–	1800	–	ns
Reverse Recovered Charge	Q_{rr}		–	12	–	°C