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

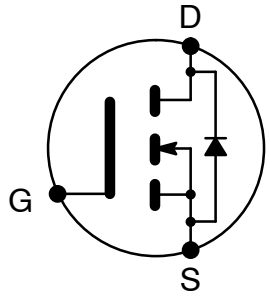
NTE2994
MOSFET
N–Channel, Enhancement Mode
High Speed Switch

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

Drain–Source Voltage, V_{DS} 450V
Gate–Source Voltage, V_{GS} . . . . . ±30V
Continuous Drain Current, I_D
  Continuous (T_C = +25°C) . . . . . ±10A
  Pulsed . . . . . ±40A
Maximum Power Dissipation, P_D 50W
Avalanche Energy (V_{CC} = 45V, L = 1.58mH), E_{AS} 86.2mJ
Avalanche Current, Repetitive or Non–Repetitive ($T_J \le$ +150°C), I_{AR} 10A
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.5°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 62.5°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	I_D = 1mA, V_{GS} = 0V	450	–	–	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} = 450, V_{GS} = 0V, T_J = +25°C	–	10	500	≤A
		V_{DS} = 450, V_{GS} = 0V, T_J = +125°C	–	0.2	1.0	mA
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 = 5A, V_{GS} = 10V	–	0.58	0.65	±
Forward Transconductance	g_{fs}	I_D = 5A, V_{DS} = 25V	3.0	6.0	–	S
Input Capacitance	C_{iss}	V_{DS} = 25v, V_{GS} = 0V, f = 1MHz	–	950	1450	pF
Output Capacitance	C_{oss}		–	180	270	pF
Reverse Transfer Capacitance	C_{rss}		–	80	120	pF
Turn–On Time	$t_{d(on)}$	V_{CC} = 300V, V_{GS} = 10V, I_D = 10A, R_{GS} = 10±	–	25	40	ns
Rise Time	t_r		–	70	110	ns
Turn–Off Time	$t_{d(off)}$		–	70	110	ns
Fall Time	t_f		–	50	80	ns
Avalanche Capability	I_{AV}	L = 100≤H, T_J = +25°C	10	–	–	A
Diode Forward On–Voltage	V_{SD}	I_F = 2 x I_{DR}, V_{GS} = 0V, T_J = +25°C	–	1.1	1.65	nC
Reverse Recovery Time	t_{rr}	I_F = I_{DR}, V_{GS} = 0V, – dI_F/dt = 100A/≤s, T_J = +25°C	–	400	–	ns
Reverse Recovery Charge	Q_{rr}			5.0		≤C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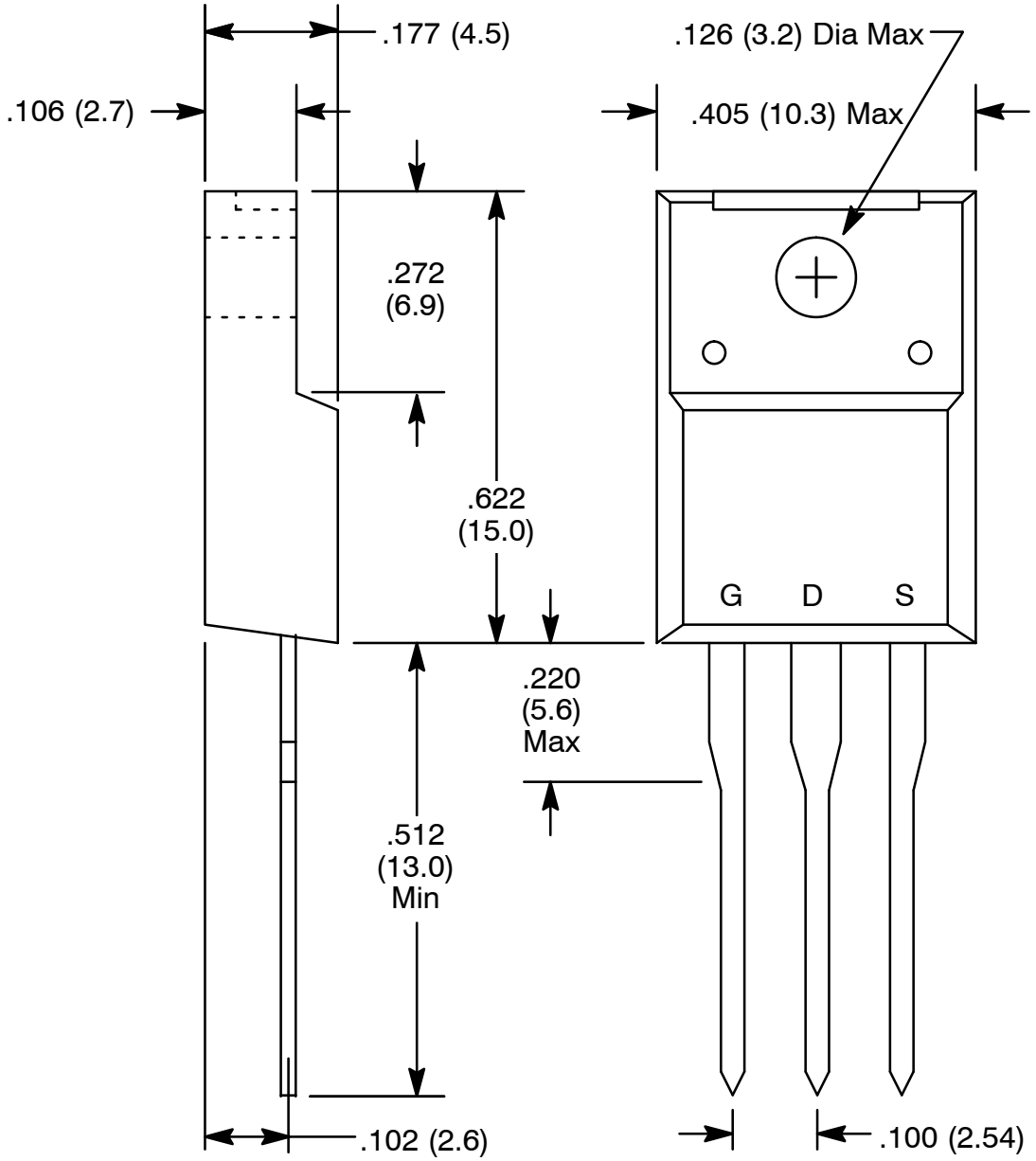
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