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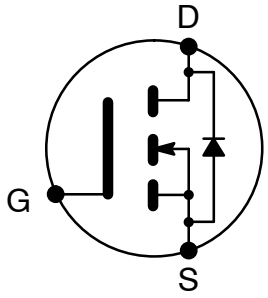
NTE2932
MOSFET
N–Channel, Enhancement Mode
High Speed Switch
TO3PML Type Package

Features:
- Avalanche Rugged Technology
- Rugged Gate Oxide Technology
- Lower Input Capacitance
- Improved Gate Charge
- Extended Safe Operating Area
- Lower R_{DS}(on): 0.071≤ Typ
- Lower Leakage Current: 10° A (Max) @ V_{DS} = 200V



Absolute Maximum Ratings:

Drain–to–Source Voltage, V_{DSS} 200V
Drain Current, I_D
  Continuous
    T_C = +25°C 21.3A
    T_C = +100°C 13.5A
  Pulsed (Note 1) 130A
Total Power Dissipation (T_C = +25°C), P_D 90W
  Derate Above 25°C . . . . . 0.72W/°C
Gate–Source Voltage, V_{GS} . . . . . ±30V
Single Pulsed Avalanche Energy (Note 2), E_{AS} 605mJ
Avalanche Current (Note 1), I_{AR} 21.3A
Repetitive Avalanche Energy (Note 1), E_{AR} 9mJ
Peak Diode Recovery dv/dt (Note 3), dv/dt 5.0V/ns
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Maximum Lead Temperature (During Soldering, 1/8” from case, 5sec), T_L . . . . . +300°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.38°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 40°C/W

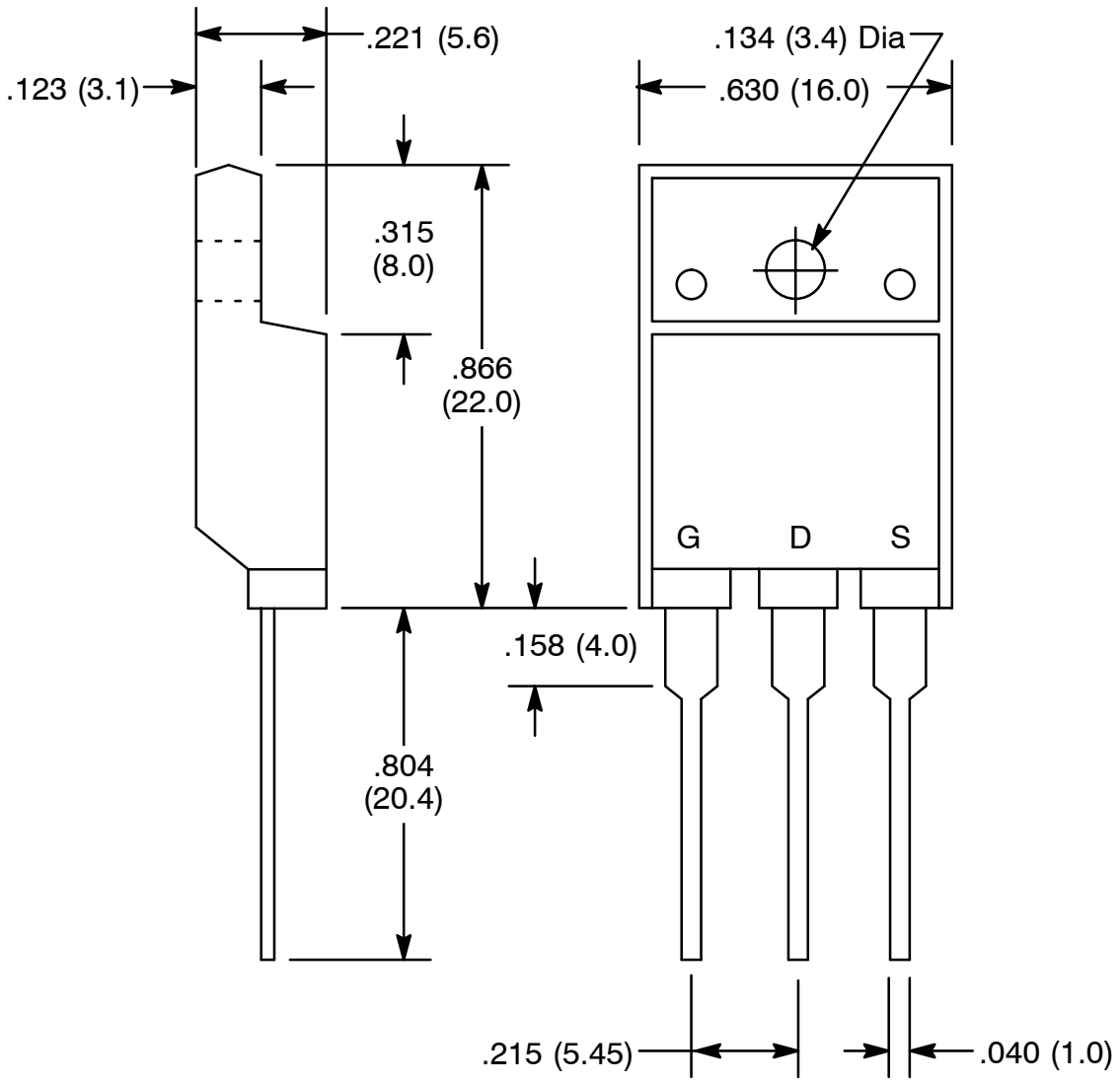
Note 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
Note 2. L = 2mH, I_{AS} = 21.3A, V_{DD} = 50V, R_G = 27≤, Starting T_J = +25°C.

Note 3. $I_{SD} \leq 32A$, $di/dt \leq 320A/° s$, $V_{DD} \leq V_{(BR)DSS}$, Starting $T_J = +25°C$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250° A	200	–	–	V
Breakdown Voltage Temperature Coefficient	$\pm V_{(BR)DSS}/\pm T_J$	I_D = 250° A	–	0.24	–	V/°C
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = 5V, I_D = 250° A	2.0	–	4.0	V
Gate–Source Leakage Forward	I_{GSS}	V_{GS} = 30V	–	–	100	nA
Gate–Source Leakage Reverse	I_{GSS}	V_{GS} = –30V	–	–	–100	nA
Drain–to–Source Leakage Current	I_{DSS}	V_{DS} = 200V	–	–	10	° A
		V_{DS} = 160V, T_C = +150°C	–	–	100	° A
Static Drain–Source ON Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 10.65A, Note 4	–	–	0.085	≤
Forward Transconductance	g_{fs}	V_{DS} = 40V, I_D = 10.65A, Note 4	–	16.64	–	mhos
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz	–	2300	3000	pF
Output Capacitance	C_{oss}		–	410	475	pF
Reverse Transfer Capacitance	C_{rss}		–	200	230	pF
Turn–On Delay Time	$t_{d(on)}$	V_{DD} = 100V, I_D = 32A, R_G = 6.2≤ , Note 4, Note 5	–	21	50	ns
Rise Time	t_r		–	20	50	ns
Turn–Off Delay Time	$t_{d(off)}$		–	77	160	ns
Fall Time	t_f		–	38	90	ns
Total Gate Charge	Q_g	V_{GS} = 10V, I_D = 32A, V_{DS} = 160V, Note 4, Note 5	–	95	123	nC
Gate–Source Charge	Q_{gs}		–	18	–	nC
Gate–Drain (“Miller”) Charge	Q_{gd}		–	45.3	–	nC
Source–Drain Diode Ratings and Characteristics						
Continuous Source Current	I_S	(Body Diode)	–	–	21.3	A
Pulse Source Current	I_{SM}	(Body Diode) Note 1	–	–	130	A
Diode Forward Voltage	V_{SD}	T_J = +25°C, I_S = 21.3A, V_{GS} = 0V, Note 4	–	–	1.5	V
Reverse Recovery Time	t_{rr}	T_J = +25°C, I_F = 32A, di_F/dt = 100A/° s, Note 4	–	203	–	ns
Reverse Recovery Charge	Q_{rr}		–	1.52	–	° C

Note 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
Note 4. Pulse Test: Pulse Width = 250° s, Duty Cycle ≤ 2%.
Note 5. Essentially independent of operating temperature.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