

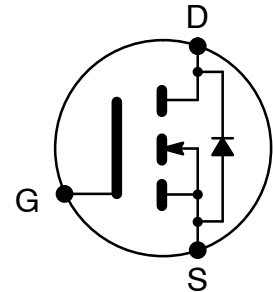


ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE2397 MOSFET N-Ch, Enhancement Mode High Speed Switch TO220 Type Package

**Features:**

- Dynamic dv/dt Rating
- Repetitive Avalanche Rated
- Fast Switching
- Ease of Paralleling
- Simple Drive Requirements



**Absolute Maximum Ratings:**

|  |                               |
|--|-------------------------------|
| Continuous Drain Current ( $V_{GS} = 10V$ ), $I_D$                                 |                               |
| $T_C = +25^\circ C$ .....  | 10A                           |
| $T_C = +100^\circ C$ .....   | 6.3A                          |
| Pulsed Drain Current (Note 1), $I_{DM}$ .....                                      | 40A                           |
| Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....                             | 125W                          |
| Derate Linearly Above $25^\circ C$ .....   | 1.0W/ $^\circ C$              |
| Gate-to-Source Voltage, $V_{GS}$ .....   | $\pm 20V$                     |
| Single Pulse Avalanche Energy (Note 2), $E_{AS}$ .....                             | 520mJ                         |
| Avalanche Current (Note 1), $I_{AR}$ .....   | 10A                           |
| Repetitive Avalanche Energy (Note 1), $E_{AR}$ .....                               | 13mJ                          |
| Peak Diode Recovery dv/dt (Note 3), dv/dt .....                                    | 4V/ns                         |
| Operating Junction Temperature Range, $T_J$ .....                                  | $-55^\circ$ to $+150^\circ C$ |
| Storage Temperature Range, $T_{stg}$ .....   | $-55^\circ$ to $+150^\circ C$ |
| Lead Temperature (During Soldering, 1.6mm from case for 10sec), $T_L$ .....        | $+300^\circ C$                |
| Mounting Torque (6-32 or M3 Screw) .....   | 10 lbf•in (1.1N•m)            |
| Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....                             | 1.0 $^\circ C/W$              |
| Thermal Resistance, Junction-to-Ambient, $R_{thJA}$ .....                          | 62 $^\circ C/W$               |
| Typical Thermal Resistance, Case-to-Sink (Flat, Greased Surface), $R_{thCS}$ ..... | 0.5 $^\circ C/W$              |

Note 1. Repetitive rating; pulse width limited by maximum junction temperature.

Note 2.  $V_{DD} = 50V$ , starting  $T_J = +25^\circ C$ ,  $L = 9.1 \leq H$ ,  $R_G = 25 \pm$ ,  $I_{AS} = 10A$

Note 3.  $I_{SD} \leq 10A$ ,  $di/dt \leq 120A/\leq s$ ,  $V_{DD} \leq V_{(BR)DSS}$ ,  $T_J \leq +150^\circ C$

**Electrical Characteristics:** ( $T_J = +25^\circ\text{C}$  unless otherwise specified)

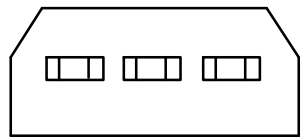
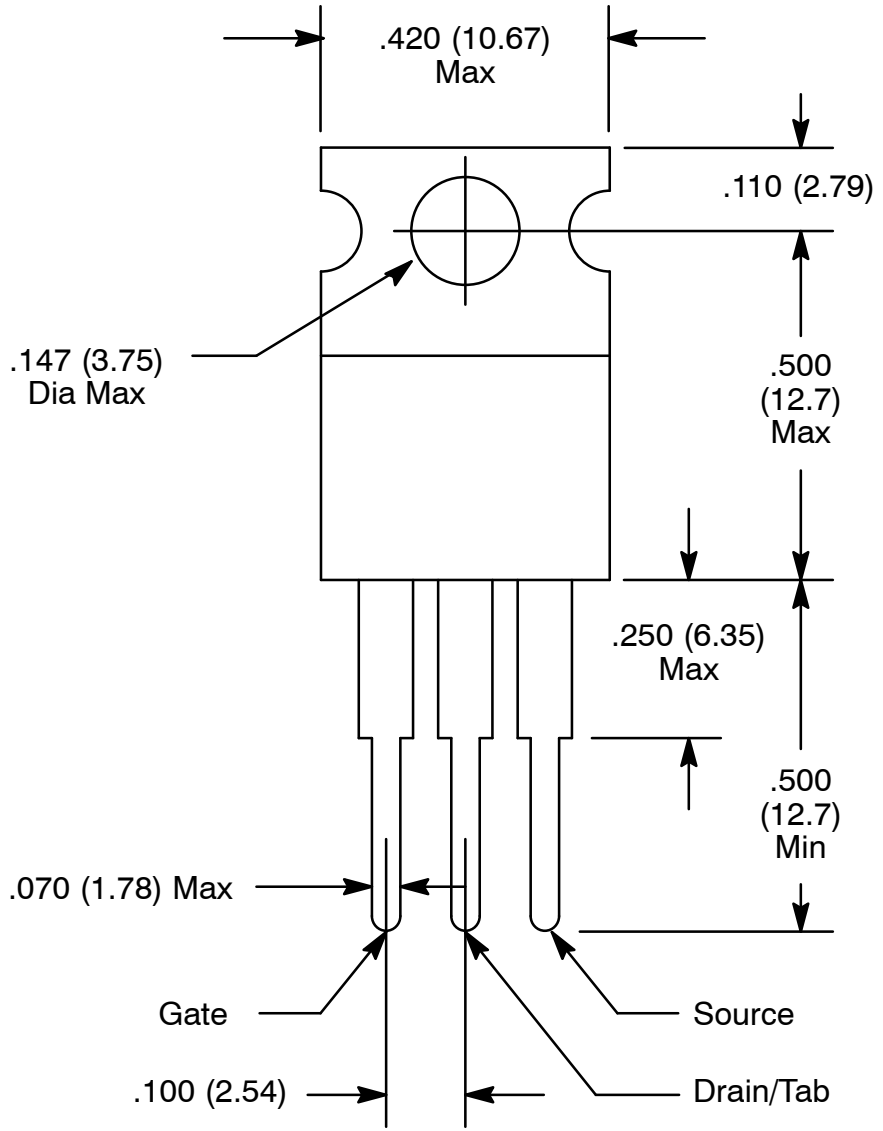
| Parameter                            | Symbol                    | Test Conditions   | Min | Typ  | Max  | Unit               |
|--------------------------------------|---------------------------|---|-----|------|------|--------------------|
| Drain-to-Source Breakdown Voltage    | $V_{(BR)DSS}$             | $V_{GS} = 0V, I_D = 250\leq A$  | 400 | -    | -    | V                  |
| Breakdown Voltage Temp. Coefficient  | $\frac{V_{(BR)DSS}}{T_J}$ | Reference to $+25^\circ\text{C}, I_D = 1\text{mA}$                    | -   | 0.49 | -    | $V/^\circ\text{C}$ |
| Static Drain-to-Source On-Resistance | $R_{DS(on)}$              | $V_{GS} = 10V, I_D = 6A, \text{Note 4}$                               | -   | -    | 0.55 | $\pm$              |
| Gate Threshold Voltage               | $V_{GS(th)}$              | $V_{DS} = V_{GS}, I_D = 250\leq A$                                    | 2.0 | -    | 4.0  | V                  |
| Forward Transconductance             | $g_{fs}$                  | $V_{DS} = 50V, I_D = 6A, \text{Note 4}$                               | 5.8 | -    | -    | mhos               |
| Drain-to-Source Leakage Current      | $I_{DSS}$                 | $V_{DS} = 400V, V_{GS} = 0V$  | -   | -    | 25   | $\leq A$           |
|                                      |                           | $V_{DS} = 320V, V_{GS} = 0V, T_J = +125^\circ\text{C}$                | -   | -    | 250  | $\leq A$           |
| Gate-to-Source Forward Leakage       | $I_{GSS}$                 | $V_{GS} = 20V$  | -   | -    | 100  | nA                 |
| Gate-to-Source Reverse Leakage       | $I_{GSS}$                 | $V_{GS} = -20V$   | -   | -    | -100 | nA                 |
| Total Gate Charge                    | $Q_g$                     | $I_D = 10A, V_{DS} = 320V, V_{GS} = 10V, \text{Note 4}$               | -   | -    | 63   | nC                 |
| Gate-to-Source Charge                | $Q_{gs}$                  |   | -   | -    | 9.0  | nC                 |
| Gate-to-Drain ("Miller") Charge      | $Q_{gd}$                  |   | -   | -    | 32   | nC                 |
| Turn-On Delay Time                   | $t_{d(on)}$               | $V_{DD} = 200V, I_D = 10A, R_G = 9.1\pm, R_D = 20\pm, \text{Note 4}$  | -   | 14   | -    | ns                 |
| Rise Time                            | $t_r$                     |   | -   | 27   | -    | ns                 |
| Turn-Off Delay Time                  | $t_{d(off)}$              |   | -   | 50   | -    | ns                 |
| Fall Time                            | $t_f$                     |   | -   | 24   | -    | ns                 |
| Internal Drain Inductance            | $L_D$                     | Between lead, .250in. (6.0) mm from package and center of die contact | -   | 4.5  | -    | nH                 |
| Internal Source Inductance           | $L_S$                     |   | -   | 7.5  | -    | nH                 |
| Input Capacitance                    | $C_{iss}$                 | $V_{GS} = 0V, V_{DS} = 25V, f = 1\text{MHz}$                          | -   | 1400 | -    | pF                 |
| Output Capacitance                   | $C_{oss}$                 |   | -   | 330  | -    | pF                 |
| Reverse Transfer Capacitance         | $C_{rss}$                 |   | -   | 120  | -    | pF                 |

**Source-Drain Ratings and Characteristics:**

| Parameter                              | Symbol   | Test Conditions   | Min | Typ | Max | Unit     |
|--|----------|---|-----|-----|-----|----------|
| Continuous Source Current (Body Diode) | $I_S$    |   | -   | -   | 10  | A        |
| Pulsed Source Current (Body Diode)     | $I_{SM}$ | Note 1  | -   | -   | 40  | A        |
| Diode Forward Voltage                  | $V_{SD}$ | $T_J = +25^\circ\text{C}, I_S = 10A, V_{GS} = 0V, \text{Note 4}$            | -   | -   | 2.0 | V        |
| Reverse Recovery Time                  | $t_{rr}$ | $T_J = +25^\circ\text{C}, I_F = 10A, di/dt = 100A/\leq s, \text{Note 4}$    | -   | 370 | 790 | ns       |
| Reverse Recovery Charge                | $Q_{rr}$ |   | -   | 3.8 | 8.2 | $\leq C$ |
| Forward Turn-On Time                   | $t_{on}$ | Intrinsic turn-on time is negligible (turn-on is dominated by $L_S + L_D$ ) |     |     |     |          |

Note 1. Repetitive rating; pulse width limited by maximum junction temperature.

Note 4. Pulse width  $\leq 300\leq s$ ; duty cycle  $\leq 2\%$ .



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [NTE](#) manufacturer:*

Other Similar products are found below :

[614233C](#) [648584F](#) [MCH3443-TL-E](#) [MCH6422-TL-E](#) [FDPF9N50NZ](#) [FW216A-TL-2W](#) [FW231A-TL-E](#) [APT5010JVR](#) [NTNS3A92PZT5G](#)  
[IRF100S201](#) [JANTX2N5237](#) [2SK2464-TL-E](#) [2SK3818-DL-E](#) [FCA20N60\\_F109](#) [FDZ595PZ](#) [STD6600NT4G](#) [FSS804-TL-E](#) [2SJ277-DL-E](#)  
[2SK1691-DL-E](#) [2SK2545\(Q,T\)](#) [405094E](#) [423220D](#) [MCH6646-TL-E](#) [TPCC8103,L1Q\(CM](#) [367-8430-0972-503](#) [VN1206L](#) [424134F](#)  
[026935X](#) [051075F](#) [SBVS138LT1G](#) [614234A](#) [715780A](#) [NTNS3166NZT5G](#) [751625C](#) [873612G](#) [IRF7380TRHR](#) [IPS70R2K0CEAKMA1](#)  
[RJK60S3DPP-E0#T2](#) [RJK60S5DPK-M0#T0](#) [APT5010JVFR](#) [APT12031JFLL](#) [APT12040JVR](#) [DMN3404LQ-7](#) [NTE6400](#) [JANTX2N6796U](#)  
[JANTX2N6784U](#) [JANTXV2N5416U4](#) [SQM110N05-06L-GE3](#) [SIHF35N60E-GE3](#) [2SK2614\(TE16L1,Q\)](#)