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## NTE490 MOSFET N-Ch, Enhancement Mode High Speed Switch TO92 Type Package

**Absolute Maximum Ratings:**

|   |                               |
|---|-------------------------------|
| Drain-Source Voltage, $V_{DS}$ .....                          | 60V                           |
| Gate-Source Voltage, $V_{GS}$ .....                           | $\pm 20V$                     |
| Drain Current (Note 1), $I_D$ .....                           | 500mA                         |
| Total Device Dissipation ( $T_A = +25^\circ C$ ), $P_D$ ..... | 350mW                         |
| Operating Junction Temperature Range, $T_J$ .....             | $-55^\circ$ to $+150^\circ C$ |
| Storage Temperature Range, $T_{stg}$ .....                    | $-55^\circ$ to $+150^\circ C$ |

Note 1. The Power Dissipation of the package may result in a lower continuous drain current.

**Electrical Characteristics:** ( $T_A = +25^\circ C$  unless otherwise specified)

| Parameter                           | Symbol        | Test Conditions                      | Min | Typ  | Max | Unit     |
|-------------------------------------|---------------|--------------------------------------|-----|------|-----|----------|
| <b>OFF Characteristics</b>          |               |                                      |     |      |     |          |
| Drain-Source Breakdown Voltage      | $V_{(BR)DSS}$ | $V_{GS} = 0, I_D = 100\mu A$         | 60  | 90   | -   | V        |
| Gate Reverse Current                | $I_{GSS}$     | $V_{GS} = 15V, V_{DS} = 0$           | -   | 0.01 | 10  | nA       |
| <b>ON Characteristics</b> (Note 2)  |               |                                      |     |      |     |          |
| Gate Threshold Voltage              | $V_{GS(Th)}$  | $V_{DS} = V_{GS}, I_D = 1mA$         | 0.8 | 2.0  | 3.0 | V        |
| Static Drain-Source ON Resistance   | $r_{DS(on)}$  | $V_{GS} = 10V, I_D = 200mA$          | -   | 1.8  | 5.0 | $\pm$    |
| Drain Cutoff Current                | $I_{D(off)}$  | $V_{DS} = 25V, V_{GS} = 0$           | -   | -    | 0.5 | $\leq A$ |
| Forward Transconductance            | $g_{fs}$      | $V_{DS} = 10V, I_D = 250mA$          | -   | 200  | -   | mmhos    |
| <b>Small-Signal Characteristics</b> |               |                                      |     |      |     |          |
| Input Capacitance                   | $C_{iss}$     | $V_{DS} = 10V, V_{GS} = 0, f = 1MHz$ | -   | -    | 60  | pF       |
| <b>Switching Characteristics</b>    |               |                                      |     |      |     |          |
| Turn-On Time                        | $t_{on}$      | $I_D = 200mA$                        | -   | 4    | 10  | ns       |
| Turn-Off Time                       | $t_{off}$     | $I_D = 200mA$                        | -   | 4    | 10  | ns       |

Note 2. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

