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## NTE3310 Insulated Gate Bipolar Transistor N-Channel Enhancement Mode, High Speed Switch TO3P Type Package

**Features:**

- High Input Impedance
- High Speed
- Low Saturation Voltage
- Enhancement Mode

**Applications:**

- High Power Switching
- Motor Control

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

|  |                                     |
|--|-------------------------------------|
| Collector-Emitter Voltage, $V_{CES}$ .....                             | 600V                                |
| Gate-Emitter Voltage, $V_{GES}$ .....                                  | $\pm 20\text{V}$                    |
| Collector Current, $I_C$   |                                     |
| DC .....   | 15A                                 |
| Pulse (1ms) .....  | 30A                                 |
| Collector Power Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_C$ ..... | 100W                                |
| Operating Junction Temperature, $T_J$ .....                            | $+150^\circ\text{C}$                |
| Storage Temperature Range, $T_{stg}$ .....                             | $-55^\circ$ to $+150^\circ\text{C}$ |

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

| Parameter                            | Symbol        | Test Conditions                                    | Min | Typ  | Max       | Unit          |
|--------------------------------------|---------------|--|-----|------|-----------|---------------|
| Gate Leakage Current                 | $I_{GES}$     | $V_{GE} = \pm 20\text{V}, V_{CE} = 0$              | -   | -    | $\pm 500$ | nA            |
| Collector Cutoff Current             | $I_{CES}$     | $V_{CE} = 600\text{V}, V_{GE} = 0$                 | -   | -    | 1.0       | mA            |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CES}$ | $I_C = 2\text{mA}, V_{GE} = 0$                     | 600 | -    | -         | V             |
| Gate-Emitter Cutoff Voltage          | $V_{GE(off)}$ | $I_C = 15\text{mA}, V_{CE} = 5\text{V}$            | 3.0 | -    | 6.0       | V             |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 15\text{A}, V_{GE} = 15\text{V}$            | -   | 3.0  | 4.0       | V             |
| Input Capacitance                    | $C_{ies}$     | $V_{CE} = 10\text{V}, V_{GE} = 0, f = 1\text{MHz}$ | -   | 1100 | -         | pF            |
| Rise Time                            | $t_r$         | $V_{CC} = 300\text{V}$                             | -   | 0.3  | 0.6       | $\mu\text{s}$ |
| Turn-On Time                         | $t_{on}$      |  | -   | 0.4  | 0.8       | $\mu\text{s}$ |
| Fall Time                            | $t_f$         |  | -   | 0.15 | 0.35      | $\mu\text{s}$ |
| Turn-Off Time                        | $t_{off}$     |  | -   | 0.5  | 1.0       | $\mu\text{s}$ |

