

## NTE3311

### Insulated Gate Bipolar Transistor N-Channel Enhancement Mode, High Speed Switch

#### **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	25A
Pulse (1ms)	50A
Collector Power Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_C$	150W
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	$V_{GE(off)}$	$I_C = 25\text{mA}, V_{CE} = 5\text{V}$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 25\text{A}, V_{GE} = 15\text{V}$	—	3.0	4.0	V
Input Capacitance	$C_{ies}$	$V_{CE} = 10\text{V}, V_{GE} = 0, f = 1\text{MHz}$	—	1400	—	pF
Rise Time	$t_r$	$V_{CC} = 300\text{V}$	—	0.30	0.60	$\mu\text{s}$
Turn-On Time	$t_{on}$		—	0.40	0.80	$\mu\text{s}$
Fall Time	$t_f$		—	0.15	0.35	$\mu\text{s}$
Turn-Off Time	$t_{off}$		—	0.50	1.00	$\mu\text{s}$

