



ELECTRONICS, INC.
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NTE2348 Silicon NPN Transistor High Voltage, High Speed Switch

Features:

- High Breakdown Voltage, High Reliability
- Fast Switching Speed
- Wide Safe Operating Area

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

| | |
|--|----------------|
| Collector–Base Voltage, V_{CBO} | 1100V |
| Collector–Emitter Voltage, V_{CEO} | 800V |
| Emitter–Base Voltage, V_{EBO} | 7V |
| Collector Current, I_C | |
| Continuous | 12A |
| Peak (Note 1) | 30A |
| Base Current, I_B | 6A |
| Collector Dissipation ($T_C = +25^\circ\text{C}$), P_C | 150W |
| Operating Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | –55° to +150°C |

Note 1. Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 10\%$.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 800\text{V}, I_E = 0$ | – | – | 10 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5\text{V}, I_C = 0$ | – | – | 10 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE} = 5\text{V}, I_C = 800\text{mA}$ | 10 | – | – | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{V}, I_C = 4\text{A}$ | 8 | – | – | |
| Gain Bandwidth Product | f_T | $V_{CE} = 10\text{V}, I_C = 800\text{mA}$ | – | 15 | – | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, f = 1\text{MHz}$ | – | 215 | – | pF |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 6\text{A}, I_B = 1.2\text{mA}$ | – | – | 2.0 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 6\text{A}, I_B = 1.2\text{mA}$ | – | – | 1.5 | V |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------|---|------|-----|-----|---------------|
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 1\text{mA}, I_E = 0$ | 1100 | – | – | V |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 5\text{mA}, R_{BE} = \infty$ | 800 | – | – | V |
| Emitter–Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 1\text{mA}, I_C = 0$ | 7 | – | – | V |
| Collector–Emitter Sustaining Voltage | $V_{CEX(sus)}$ | $I_C = 6\text{A}, I_{B1} = I_{B2} = 1.2\text{mA}, L = 2\text{mH}, \text{Clamped}$ | 800 | – | – | V |
| Turn–On Time | t_{on} | $V_{CC} = 400\text{V}, I_{B1} = -2.5\text{A}, I_{B2} = I_C = 8\text{A}, R_L = 50\Omega$ | – | – | 0.5 | μs |
| Storage Time | t_{stg} | | – | – | 3.0 | μs |
| Fall Time | t_f | | – | – | 0.3 | μs |

