



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE2332

Darlington Silicon NPN Transistor w/ Internal Damper & Zener Diode

Description:

The NTE2332 Darlington transistor is especially well suited for use in switching of L load motor drivers, printer hammer drivers, relay drivers, etc.

Features:

- High DC Current Gain
- Large Current Capacity and Wide ASO
- Contains 60 ±10V Avalanche Diode Between Collector and Base
- Uniformity in Collector-to-Base Breakdown Voltage Due to Adoption of Accurate Impurity Diffusion Process
- 25mJ Reverse Energy Rating

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

| | |
|--|----------------|
| Collector to Base Voltage, V_{CBO} , | 60 ±10V |
| Collector to Emitter Voltage, V_{CEO} , | 60 ±10V |
| Emitter to Base Voltage, V_{EBO} | 6V |
| Collector Current, I_C | 2A |
| Peak Collector Current, i_{cp} | 4A |
| Base Current, I_B | 0.4A |
| Collector Dissipation ($T_C = +25^\circ\text{C}$), P_C | 20W |
| Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | -55° to +150°C |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------|-----------|-------------------------|-----|-----|-----|------|
| Collector Cutoff Current | I_{CEO} | $V_{CB} = 40V, I_E = 0$ | – | – | 10 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | – | – | 2 | mA |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|------|------|-----|---------------|
| DC Current Gain | h_{FE} | $V_{CE} = 5\text{V}, I_C = 1\text{A}$ | 1000 | 4000 | – | |
| Gain Bandwidth Product | f_T | $V_{CE} = 5\text{V}, I_C = 1\text{A}$ | – | 180 | – | MHz |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 1\text{A}, I_B = 4\text{mA}$ | – | 1.0 | 1.5 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 1\text{A}, I_B = 4\text{mA}$ | – | – | 2.0 | V |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 0.1\text{mA}, I_E = 0$ | 50 | 60 | 70 | V |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, R_{BE} = \infty$ | 50 | 60 | 70 | V |
| Unclamped Inductive Load Energy | $E_{s/b}$ | $L = 100\text{mH}, R_{BE} = 100\Omega$ | 25 | – | – | mJ |
| Turn–On Time | t_{on} | $V_{CC} = 20\text{V}, I_C = 1\text{A}$ | – | 0.2 | – | μs |
| Storage Time | t_{stg} | $I_{B1} = -I_{B2} = 4\text{mA}$ | – | 3.5 | – | μs |
| Fall Time | t_f | $I_{B1} = -I_{B2} = 4\text{mA}$ | – | 0.5 | – | μs |

