



ELECTRONICS, INC.
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NTE2334 Silicon NPN Transistor Darlington Driver ^w/Internal Damper and Zener Diode

Description:

The NTE2334 is a silicon Darlington NPN Driver with an internal damper and zener diode in a TO220 type package designed for use in applications such as the switching of the L load of a motor driver, hammer driver, relay driver, etc.

Features:

- High DC Current Gain
- Large Current Capacity and Wide ASO
- Contains 60 ±10V Avalanche Diode between Collector and Base
- High 50mJ Reverse Energy Rating

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

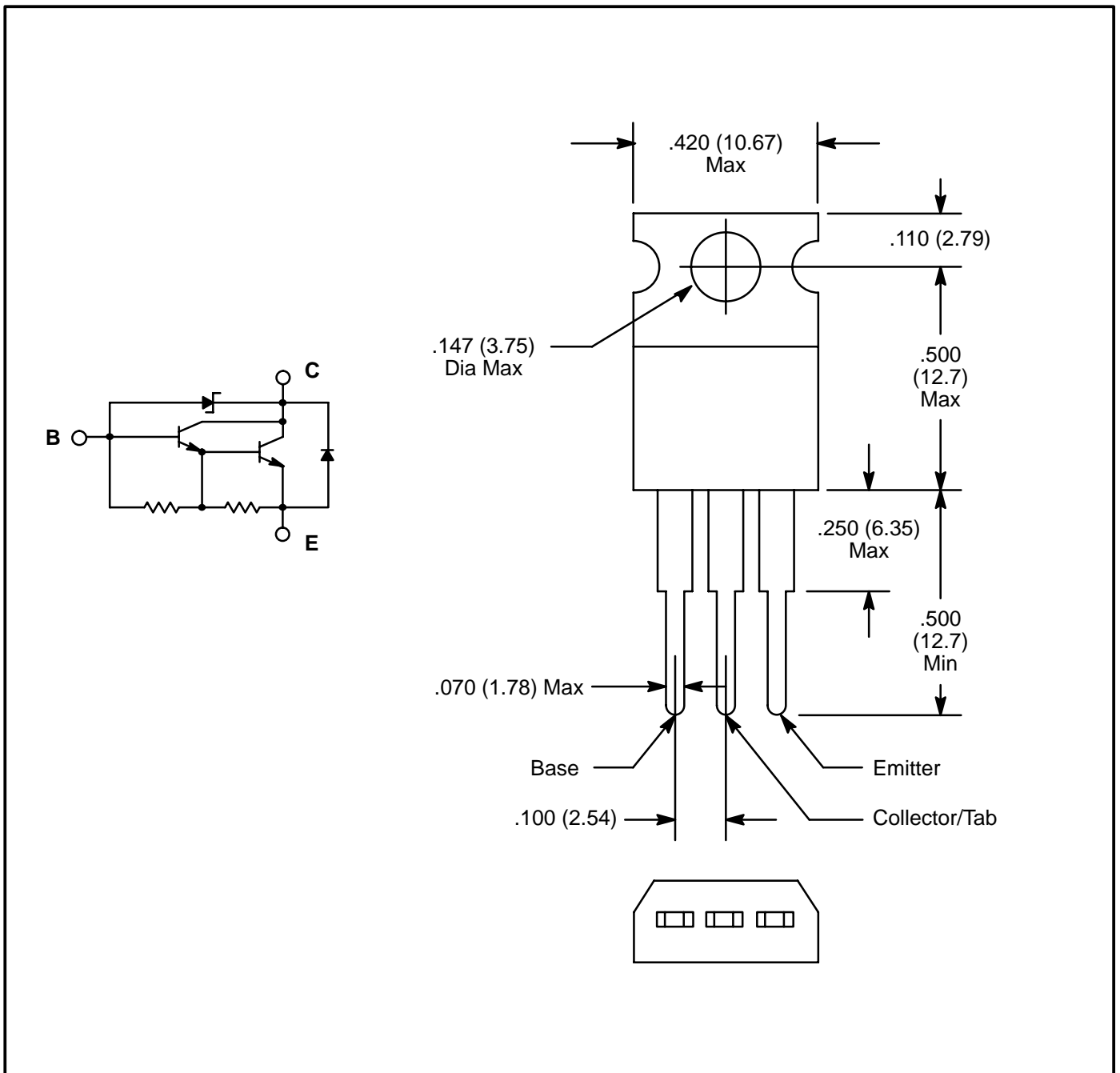
| | |
|--|----------------|
| Collector to Base Voltage, V_{CBO} | 60 ±10V |
| Collector to Emitter Voltage, V_{CEO} | 60 ±10V |
| Emitter to Base Voltage, V_{EBO} | 6V |
| Collector Current, I_C | |
| Continuous | 5A |
| Peak | 8A |
| Base Current, I_B | 500mA |
| Collector Power Dissipation ($T_C = +25^{\circ}\text{C}$), P_C | 40W |
| Operating 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_{CBO} | $V_{BE} = 40V, I_E = 0$ | – | – | 100 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | – | – | 3 | mA |
| DC Current Gain | h_{FE} | $V_{CE} = 3V, I_C = 2.5A$ | 1000 | 4000 | – | |
| Gain Bandwidth Product | f_T | $V_{CE} = 5V, I_C = 2.5A$ | – | 20 | – | MHz |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 2.5\text{A}, I_B = 5\text{mA}$ | – | 0.9 | 1.5 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 2.5\text{A}, I_B = 5\text{mA}$ | – | – | 2.0 | V |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 5\text{mA}, I_E = 0$ | 50 | 60 | 70 | V |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 50\text{mA}, R_{BE} = \infty$ | 50 | 60 | 70 | V |
| Unclamped Inductive Load Energy | $E_{s/b}$ | $L = 100\text{mH}, R_{BE} = 100\Omega$ | 50 | – | – | mJ |
| Turn–On Time | t_{on} | $V_{CC} = 20\text{V}, I_C = 3\text{A},$ $I_{B1} = -I_{B2} = 6\text{mA}$ | – | 0.6 | – | μs |
| Storage Time | t_{stg} | | – | 4.0 | – | μs |
| Fall Time | t_f | | – | 1.5 | – | μs |



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