

NTE331 (NPN) & NTE332 (PNP) Silicon Complementary Transistors Audio Power Amp, Switch

Description:

The NTE331 (NPN) and NTE332 (PNP) are silicon epitaxial-base complementary power transistors in a TO-220 plastic package intended for use in power linear and switching applications.

Absolute Maximum Ratings:

| | |
|---|----------------|
| Collector-Base Voltage ($I_E = 0$), V_{CBO} | 100V |
| Collector-Emitter Voltage ($I_B = 0$), V_{CEO} | 100V |
| Emitter-Base Voltage ($I_C = 0$), V_{EBO} | 5V |
| Emitter Current, I_E | 15A |
| Collector Current, I_C | 15A |
| Base Current, I_B | 5A |
| Total Power Dissipation ($T_C \leq +25^\circ\text{C}$), P_D | 90W |
| Operating Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | -65° to +150°C |
| Thermal Resistance Junction-to-Case, R_{thJC} | 1.4°C/W Max |

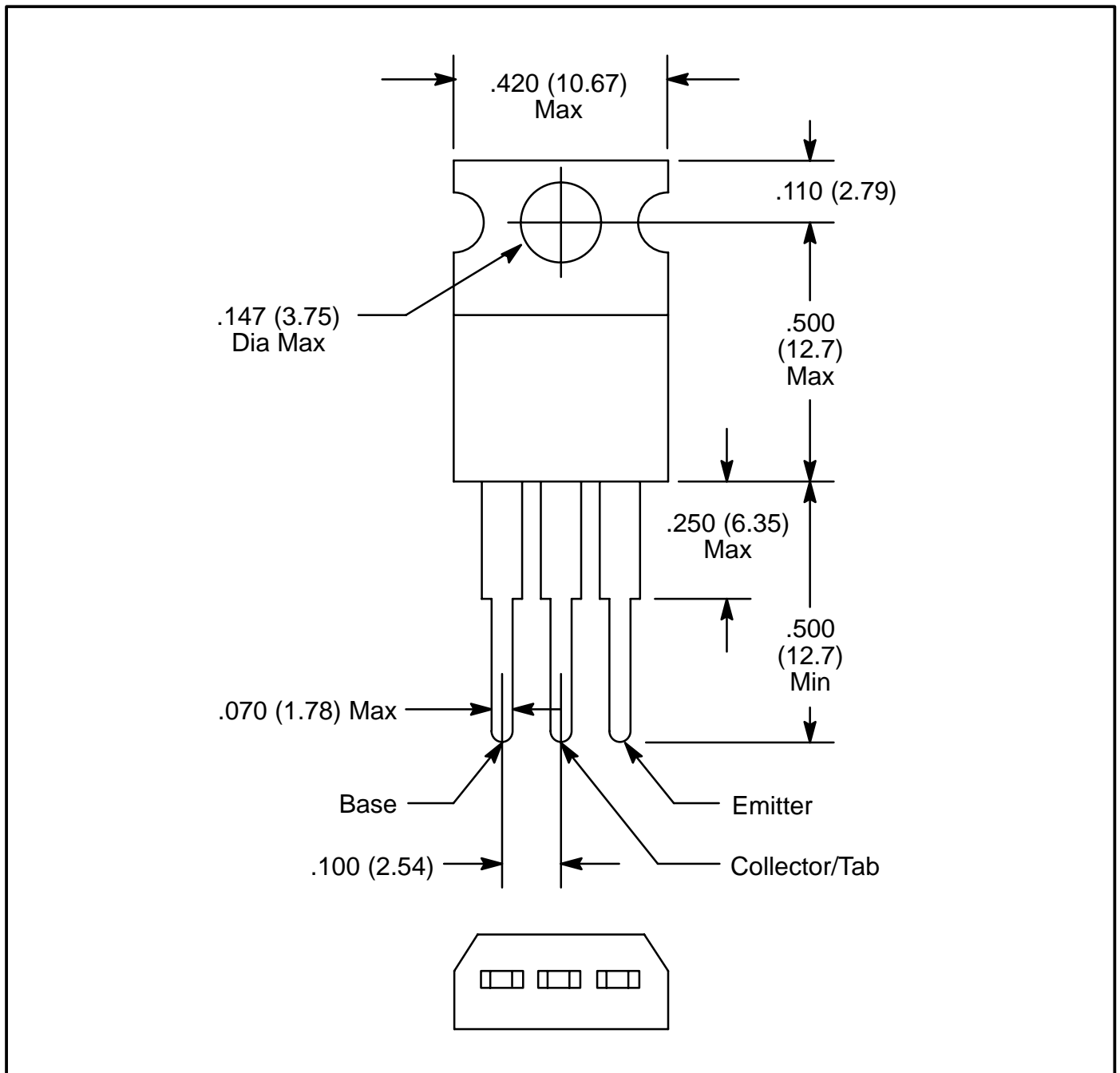
Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------|--|-----|-----|-----|---------------|
| Collector Cutoff Current | I_{CBO} | $I_E = 0, V_{CB} = 100V$ | - | - | 500 | μA |
| | | $I_E = 0, V_{CB} = 100V, T_C = +150^\circ\text{C}$ | - | - | 5 | mA |
| Collector Cutoff Current | I_{CEO} | $I_B = 0, V_{CE} = 50V$ | - | - | 1 | mA |
| Emitter Cutoff Current | I_{EBO} | $I_C = 0, V_{EB} = 5V$ | - | - | 1 | mA |
| Collector-Emitter Sustaining Voltage | $V_{CEO(sus)}$ | $I_B = 0, I_C = 100\text{mA}$, Note 1 | 100 | - | - | V |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 5A, I_B = 0.5A$, Note 1 | - | - | 1 | V |
| | | $I_C = 10A, I_B = 2.5A$, Note 1 | - | - | 3 | V |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------|---------------|--|-----|-----|-----|------|
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 10\text{A}, I_B = 2.5\text{A}$, Note 1 | – | – | 2.5 | V |
| Base-Emitter Voltage | V_{BE} | $I_C = 5\text{A}, V_{CE} = 4\text{V}$, Note 1 | – | – | 1.5 | V |
| DC Current Gain | h_{FE} | $I_C = 0.5\text{A}, V_{CE} = 4\text{V}$, Note 1 | 40 | – | 250 | |
| | | $I_C = 5\text{A}, V_{CE} = 4\text{V}$, Note 1 | 15 | – | 150 | |
| | | $I_C = 10\text{A}, V_{CE} = 4\text{V}$, Note 1 | 5 | – | – | |
| Transistion Frequency | f_T | $I_C = 0.5\text{A}, V_{CE} = 4\text{V}$ | 3 | – | – | MHz |

Note 1. Pulsed; Pulse Duration = $300\mu\text{s}$, Duty Cycle = 1.5%.



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