



**ELECTRONICS, INC.**  
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## NTE284 (NPN) & NTE285 (PNP) Silicon Complementary Transistors Audio Amplifier Output

### **Description:**

The NTE284 (NPN) and NTE285 (PNP) are silicon complementary power transistors in a TO3 type package designed for use in power amplifier applications.

### **Applications:**

- Recommended for 100W High-Fidelity Audio Frequency Amplifier Output Stage

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

|   |                 |
|---|-----------------|
| Collector to Base Voltage, $V_{CBO}$ .....    | 180V            |
| Collector to Emitter Voltage, $V_{CEO}$ ..... | 180V            |
| Emitter to Base Voltage, $V_{EBO}$ .....      | 5V              |
| Collector Current, $I_C$ .....                | 16A             |
| Emitter Current, $I_E$ .....                  | 16A             |
| Power Dissipation, $P_C$ .....                | 150W            |
| Junction Temperature, $T_j$ .....             | +150°C          |
| Storage Temperature, $T_{stg}$ .....          | -65°C to +150°C |

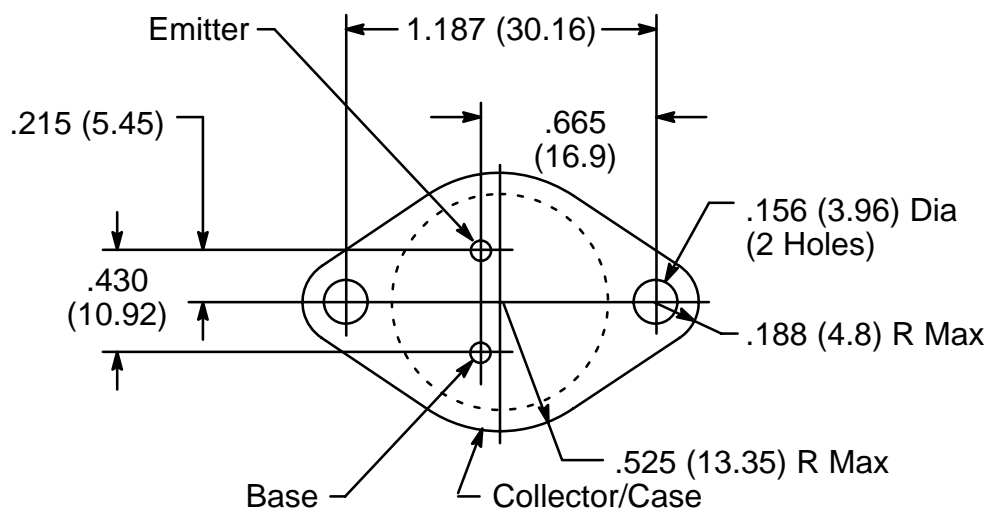
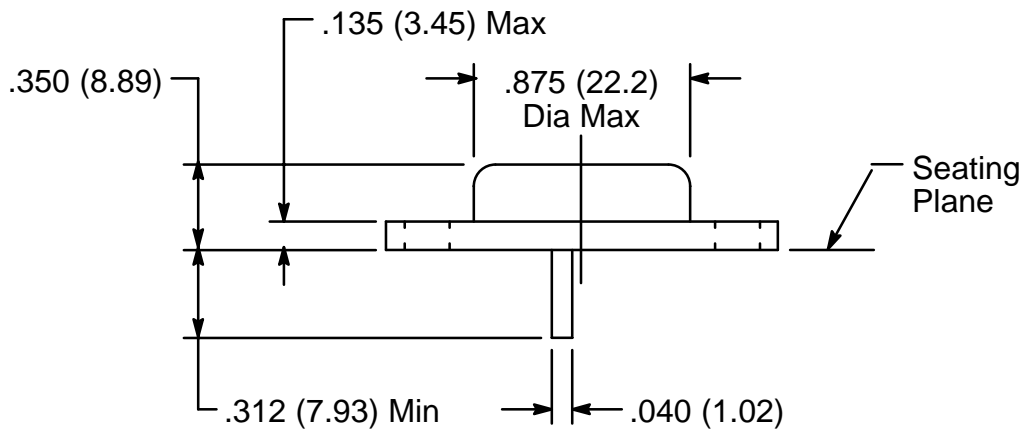
### **Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Condition                         | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|-----------------------------------|-----|-----|-----|---------------|
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB} = 90V, I_E = 0$           | -   | -   | 100 | $\mu\text{A}$ |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$            | -   | -   | 100 | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = 0.1A, I_B = 0$             | 180 | -   | -   | V             |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E = 10mA, I_C = 0$             | 5   | -   | -   | V             |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 5V, I_C = 2A$           | 70  | -   | 140 | V             |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10A, I_B = 1A$             | -   | -   | 3.0 | V             |
| Base to Emitter Voltage              | $V_{BE}$      | $V_{CE} = 5V, I_C = 10A$          | -   | -   | 2.5 | V             |
| Current Gain Bandwidth Product       | $f_T$         | $V_{CE} = 5V, I_C = 2A$           | -   | 6   | -   | MHz           |
| Output Capacitance<br>NTE284         | $C_{ob}$      | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | -   | 300 | -   | pF            |
| NTE285                               |               |                                   | -   | 450 | -   | pF            |

Note 1. NTE284MP is a matched pair of NTE284 with their DC Current Gain ( $h_{FE}$ ) matched to within 10% of each other.

Note 2. NTE285MP is a matched pair of NTE285 with their DC Current Gain ( $h_{FE}$ ) matched to within 10% of each other.

Note 3. NTE285MCP is a matched complementary pair containing 1 each of NTE284 (NPN) and NTE285 (PNP).



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