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:  ($T_A = +25^\circ C$ 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:  ($T_A = +25^\circ C$ unless otherwise specified)

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

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).
1.187 (30.16)
.875 (22.2)
Dia Max

.430 (10.92)

.135 (3.45) Max

.350 (8.89)

.312 (7.93) Min

.040 (1.02)

Seating Plane

.215 (5.45)

.156 (3.96) Dia
(2 Holes)

.665 (16.9)

.430 (10.92)

.188 (4.8) R Max

.525 (13.35) R Max

Emitter

Base

Collector/Case