NTE1465
Integrated Circuit
Audio Power Amplifier, 500mW

Description:
The NTE1465 is an integrated circuit in a 9–Lead SIP type package designed for use as an audio power amplifier in radio and portable cassette tape recorders.

Features:
- Output Power:  $P_O = 500\text{mW (Typ)}$ @ $V_{CC} = 6\text{V}, R_L = 8\Omega$, THD = 10%
- Wide Operating Supply Range:  $V_{CC} = 4\text{V to 14V}$
- Low Quiescent Current

Absolute Maximum Ratings:  ($T_A = +25^\circ \text{C}$ unless otherwise specified)
- Supply Voltage, $V_{CC}$: 14V
- Output Current (Peak), $I_{O(\text{peak})}$: 500mA
- Power Dissipation, $P_D$: 750mW
- Operating Temperature Range, $T_{opr}$: $-25^\circ \text{to} +75^\circ \text{C}$
- Storage Temperature Range, $T_{stg}$: $-55^\circ \text{to} +150^\circ \text{C}$

Electrical Characteristics:  ($T_A = +25^\circ \text{C}, V_{CC} = 6\text{V}, R_L = 8\Omega, R_g = 600\Omega, R_f = 47\Omega, f = 1\text{kHz}$ unless otherwise specified)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiescent Current</td>
<td>$I_{CCQ}$</td>
<td>$V_{CC} = 4\text{V}$</td>
<td>7</td>
<td>–</td>
<td>–</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$V_{CC} = 6\text{V}$</td>
<td>–</td>
<td>15</td>
<td>20</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$V_{CC} = 9\text{V}$</td>
<td>–</td>
<td>17</td>
<td>23</td>
<td>mA</td>
</tr>
<tr>
<td>Output Power</td>
<td>$P_O$</td>
<td>THD = 10%</td>
<td>450</td>
<td>500</td>
<td>–</td>
<td>mW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$V_{CC} = 9\text{V}, R_L = 16\Omega$</td>
<td>–</td>
<td>700</td>
<td>–</td>
<td>mW</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>THD</td>
<td>$P_O = 100\text{mW}$</td>
<td>–</td>
<td>0.3</td>
<td>1.0</td>
<td>%</td>
</tr>
<tr>
<td>Open Loop Voltage Gain</td>
<td>$G_{VO}$</td>
<td>$R_f = 0$</td>
<td>65</td>
<td>71</td>
<td>–</td>
<td>dB</td>
</tr>
<tr>
<td>Closed Loop Voltage Gain</td>
<td>$G_V$</td>
<td>$R_f = 47\Omega$, Note 1</td>
<td>47</td>
<td>50</td>
<td>52</td>
<td>dB</td>
</tr>
<tr>
<td>Input Resistance</td>
<td>$R_{IN}$</td>
<td></td>
<td>–</td>
<td>15</td>
<td>–</td>
<td>kΩ</td>
</tr>
<tr>
<td>Output Noise Voltage</td>
<td>$V_{NO}$</td>
<td>$R_g = 10k\Omega$, BW = 50Hz to 20kHz</td>
<td>–</td>
<td>0.4</td>
<td>1.0</td>
<td>mV_{rms}</td>
</tr>
</tbody>
</table>

Note 1. In regard to the value of the closed loop gain, it is possible to be classified.
Pin Connection Diagram
(Front View)

9 Ripple Cap (100µF)
8 Feedback
7 VCC
6 Output
5 GND
4 High Frequency Cap
3 Non–Invert Input
2 Invert Input
1 High Frequency Cap

Dimensions:
- 0.862 (21.89)
- 0.118 (3.0)
- 0.053 (1.35)
- 0.177 (4.5)
- 0.110 (2.8)
- 0.100 (2.54)
- 0.031 (0.78)