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## NTE7055 Integrated Circuit Dual Audio Power Amplifier, 2W

**Description:**

The NTE7055 is a dual audio power amplifier in a 14-Lead DIP type package designed for portable audio sets.

**Features:**

- Wide Operating Voltage Range:  $V_{CC} = 3V$  to  $16V$
- High Output Power:  $P_O = 2W$  at  $V_{CC} = 12V, R_L = 8\Omega, THD = 10\%$   
 $P_O = 1.6W$  at  $V_{CC} = 9V, R_L = 4\Omega, THD = 10\%$   
 $P_O = 1.2W$  at  $V_{CC} = 9V, R_L = 8\Omega, THD = 10\%$   
 $P_O = 0.7W$  at  $V_{CC} = 6V, R_L = 4\Omega, THD = 10\%$   
 $P_O = 0.5W$  at  $V_{CC} = 6V, R_L = 8\Omega, THD = 10\%$   
 $P_O = 80mW$  at  $V_{CC} = 4.5V, R_L = 32\Omega, THD = 10\%$
- High Supply Voltage Rejection:  $SVR = 45dB$
- Low Quiescent Current:  $I_{CC} = 12mA$
- Low Pop Noise at Power ON/OFF

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

|   |                               |
|---|-------------------------------|
| Supply Voltage (No Signal), $V_{CC1}$ .....       | 18V                           |
| Supply Voltage (Operating), $V_{CC2}$ .....       | 16V                           |
| Allowable Power Dissipation (Note 1), $P_D$ ..... | 2.4W                          |
| Operating Temperature Range, $T_{opr}$ .....      | $-20^\circ$ to $+70^\circ C$  |
| Storage Temperature Range, $T_{stg}$ .....        | $-40^\circ$ to $+150^\circ C$ |

Note 1. 50 x 50 x 0.035mm copper heat sink on PCB.

**Recommended Operating Conditions:** ( $T_A = +25^\circ C$  unless otherwise specified)

| Parameter      | Symbol       | Test Conditions  | Min | Typ | Max | Unit     |
|----------------|--------------|------------------|-----|-----|-----|----------|
| Supply Voltage | $V_{CC(16)}$ | $R_L = 16\Omega$ | 3   | -   | 16  | V        |
|                | $V_{CC(8)}$  | $R_L = 8\Omega$  | 3   | -   | 13  | V        |
|                | $V_{CC(4)}$  | $R_L = 4\Omega$  | 3   | -   | 9   | V        |
| Load Impedance | $R_L$        |                  | 4   | 8   | -   | $\Omega$ |
| Voltage Gain   | $G_V$        |                  | 34  | 44  | -   | dB       |

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 9\text{V}$ ,  $R_f = 33\Omega$ ,  $f = 1\text{kHz}$ ,  $R_L = 8\Omega$  unless otherwise specified)

| Parameter                 | Symbol   | Test Conditions   | Min | Typ | Max | Unit                     |
|---------------------------|----------|---|-----|-----|-----|--------------------------|
| Circuit Current           | $I_{CC}$ | No Signal   | -   | 12  | 25  | mA                       |
| Voltage Gain              | $G_{V1}$ | $P_O = 0.25\text{W}$ , $R_f = 33\Omega$   | 41  | 44  | 47  | dB                       |
|                           | $G_{V2}$ | $P_O = 0.25\text{W}$ , $R_f = 120\Omega$  | -   | 34  | -   | dB                       |
| Output Power              | $P_{O1}$ | $V_{CC} = 12\text{V}$ , $R_L = 8\Omega$ , THD = 10%   | -   | 2.0 | -   | W                        |
|                           | $P_{O2}$ | $V_{CC} = 9\text{V}$ , $R_L = 4\Omega$ , THD = 10%  | -   | 1.6 | -   | W                        |
|                           | $P_{O3}$ | $V_{CC} = 9\text{V}$ , $R_L = 8\Omega$ , THD = 10%  | 0.9 | 1.2 | -   | W                        |
|                           | $P_{O4}$ | $V_{CC} = 6\text{V}$ , $R_L = 4\Omega$ , THD = 10%  | -   | 0.7 | -   | W                        |
|                           | $P_{O5}$ | $V_{CC} = 6\text{V}$ , $R_L = 8\Omega$ , THD = 10%  | -   | 0.5 | -   | W                        |
|                           | $P_{O6}$ | $V_{CC} = 4.5\text{V}$ , $R_L = 32\Omega$ , THD = 10%   | -   | 80  | -   | mW                       |
| Total Harmonic Distortion | THD1     | $P_O = 0.5\text{W}$ , $R_f = 33\Omega$  | -   | 0.4 | 1.6 | %                        |
|                           | THD2     | $P_O = 0.5\text{W}$ , $R_f = 120\Omega$   | -   | 0.3 | -   | %                        |
| Output Noise Voltage      | NL       | $R_G = 10\text{k}\Omega$  | -   | 0.9 | 1.5 | $\text{mV}_{\text{rms}}$ |
| Supply Voltage Rejection  | SVR      | $R_G = 0$ , $f_{\text{ripple}} = 100\text{Hz}$ , $V_{\text{ripple}} = 0.3\text{V}_{\text{rms}}$ | 38  | 45  | -   | dB                       |
| Crosstalk                 | CT       | $R_G = 0$ , $P_O = 0.25\text{W}$  | 40  | 55  | -   | dB                       |
| Channel Balance           | Ch. B.   | $P_O = 0.25\text{W}$  | -2  | 0   | +2  | dB                       |
| Input Impedance           | $Z_{in}$ |   | -   | 5   | -   | $\text{M}\Omega$         |



