



ELECTRONICS, INC.

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NTE7146 Integrated Circuit Dual (12W + 12W) Stereo Amplifier w/Muting

Description:

The NTE7146 is a class AB dual audio power amplifier assembled in an 11-Lead Staggered SIP type package specifically designed for high quality sound applications such as HI-FI music centers and stereo TV sets.

Features:

- Wide Supply Voltage Range
- High Output Power: 12W + 12W @ $V_S = 28V$, $R_L = 8\Omega$, THD = 10%
- Mute facility (Pop Free) with Low Consumption
- AC Short Circuit Protection
- Thermal Overload Protection

Absolute Maximum Ratings:

| | |
|--|-------------------------------|
| Supply Voltage, V_S | 35V |
| Output Peak Current, I_O | |
| Repetitive ($f > 20Hz$) | 2.5A |
| Non-Repetitive ($t = 100\mu s$) | 3.5A |
| Total Power Dissipation ($T_C = +70^\circ C$), P_{tot} | 25W |
| Operating Temperature Range, T_{opr} | 0° to $+70^\circ C$ |
| Storage Temperature Range, T_{stg} | -40° to $+150^\circ C$ |
| Maximum Thermal Resistance, Junction-to-Case, R_{thJC} | $3^\circ C/W$ |

Electrical Characteristics: ($T_A = +25^\circ C$, $V_S = 28V$, $R_L = 8\Omega$, $G_V = 30dB$, $f = 1kHz$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------|--------|---|-----|------|-----|------|
| Supply Voltage | V_S | | 10 | – | 32 | V |
| Quiescent Output Voltage | V_O | | – | 13.5 | – | V |
| Total Quiescent Current | I_q | | – | 70 | 95 | mA |
| Output Power (RMS) | P_O | THD = 10%, $T_A = +85^\circ C$ | 10 | 12 | – | W |
| | | THD = 1% | – | 9.5 | – | W |
| Total Harmonic Distortion | THD | $P_O = 1W$, $f = 1kHz$ | – | 0.02 | 0.2 | % |
| | | $P_O = 0.1W$ to $8W$, $f = 100Hz$ to $10kHz$ | – | – | 0.5 | % |

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_S = 28\text{V}$, $R_L = 8\Omega$, $G_V = 30\text{dB}$, $f = 1\text{kHz}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------------|--------------------|---|-----|-----|-----|------------------|
| Crosstalk | CT | $R_S = 10\text{k}\Omega$, $f = 1\text{kHz}$ | - | 70 | - | dB |
| | | $R_S = 10\text{k}\Omega$, $f = 10\text{kHz}$ | - | 60 | - | dB |
| Input Resistance | R_I | | 100 | 200 | - | $\text{k}\Omega$ |
| Low Frequency Roll-Off (-3dB) | f_L | | - | 40 | - | Hz |
| High Frequency Roll-Off (-3dB) | f_H | | - | 80 | - | kHz |
| Total Input Noise Voltage | e_N | A Curve; $R_S = 10\text{k}\Omega$ | - | 1.5 | - | mV |
| | | $f = 22\text{Hz to } 22\text{kHz}$, $R_S = 10\text{k}\Omega$ | - | 3 | 10 | μV |
| Supply Voltage Rejection (Ea Channel) | SVR | $R_S = 10\text{k}\Omega$, $f = 100\text{Hz}$, $V_r = 0.5\text{V}$ | 45 | 60 | - | dB |
| Thermal Shutdown Junction Temperature | T_J | | - | 145 | - | $^\circ\text{C}$ |
| Mute Function | | | | | | |
| Mute Threshold | $V_{T\text{MUTE}}$ | | 1.0 | 1.6 | - | V |
| Play Threshold | $V_{T\text{PLAY}}$ | | - | 4.5 | - | V |
| Mute Attenuation | ATT_{AM} | | 70 | 100 | - | dB |
| Quiescent Current @ Mute | $I_{q\text{MUTE}}$ | | - | 7 | 10 | mA |

Pin Connection Diagram
(Front View)

