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NTE1687 Linear Integrated Circuit Dual, 2.5W (7.8W BTL) Audio Amp

Description:

The NTE1687 is a high performance stereo power amplifier in an 11-Lead SIP type package designed to deliver 1W/Ch into 4Ω or 2W bridged monaural into 8Ω. It is ideal for sensitive AM radio applications, exhibiting lower wideband noise, lower distortion, and less AM radiation than conventional designs.

Features:

- Low AM Radiation
- Low Noise
- 3V, 4Ω, Stereo P_O = 250mW
- Wide Supply Operation: 3V to 15V
- Low Distortion
- P_O = 9W Bridged

Applications:

- Compact AM/FM Radios
- Stereo Tape Recorders and Players
- High Power Portable Stereos

Absolute Maximum Ratings:

| | |
|---|-----------------|
| Supply Voltage, V _S | 18V |
| Junction Temperature, T _J | +150°C |
| Operating Temperature Range (Note 1), T _{opr} | 0°C to +70°C |
| Storage Temperature Range, T _{stg} | -65°C to +150°C |
| Lead Temperature (During Soldering, 10 sec), T _L | +260°C |

Note 1. For operation at ambient temperature greater than +25°C, the NTE1687 must be derated based on a maximum +150°C junction temperature using a thermal resistance which depends upon mounting techniques,

Electrical Characteristics: ($T_A = 25^\circ\text{C}$, $A_V = 200$ (46dB), $T_{TAB} = 25^\circ\text{C}$, $V_S = 12\text{V}$, $R_L = 8\Omega$, unless otherwise specified)

| Parameter | Test Conditions | Min | Typ | Max | Unit | |
|-------------------------------------|--|--|-----|------|------------------|---------------|
| Supply Current | $P_O = 0\text{W}$, Dual Mode | – | 25 | 40 | mA | |
| Operating Supply Voltage | | 3 | – | 15 | V | |
| Output Power | THD = 10%, $f = 1\text{kHz}$ | $V_S = 12\text{V}$, $R_L = 8\Omega$ Dual Mode | 2.0 | 2.5 | – | W/Ch |
| | | $V_S = 12\text{V}$, $R_L = 8\Omega$ Bridge Mode | 7.2 | 9.0 | – | W |
| | | $V_S = 9\text{V}$, $R_L = 4\Omega$ Bridge Mode | – | 7.8 | – | W |
| | | $V_S = 9\text{V}$, $R_L = 4\Omega$ Dual Mode | – | 2.5 | – | W/Ch |
| Distortion | $f = 1\text{kHz}$ | $P_O = 50\text{mW}$ | – | 0.09 | – | % |
| | | $P_O = 0.5\text{W}$ | – | 0.11 | – | |
| | | $P_O = 1\text{W}$ | – | 0.14 | – | |
| Power Supply Rejection Ratio (PSRR) | $C_{BY} = 100\mu\text{F}$, $f = 1\text{kHz}$, $C_{IN} = 0.1\mu\text{F}$, Output Referred, $V_{RIPPLE} = 250\text{mV}$ | –40 | –54 | – | dB | |
| Channel Separation | $C_{BY} = 100\mu\text{F}$, $f = 1\text{kHz}$, $C_{IN} = 0.1\mu\text{F}$, Output Referred | –50 | –64 | – | dB | |
| Noise | Equivalent Input Noise $R_S = 0$ | $C_{IN} = 0.1\mu\text{F}$, BW = 20 – 20kHz | – | 1.4 | – | μV |
| | | CCIR/ARM | – | 1.4 | – | |
| | | Wideband | – | 2.0 | – | |
| DC Output Level | | 5.6 | 6 | 6.4 | V | |
| Input Impedance | | 50 | 100 | 350 | $\text{k}\Omega$ | |
| Input Offset Voltage | | – | 5 | – | mV | |
| Voltage Difference between Outputs | | – | 10 | 20 | mV | |
| Input Bias Current | | – | 120 | – | nA | |

Pin Connection Diagram
(Front View)



