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NTE7101 Integrated Circuit AF Power Amplifier, 7W

Description:

The NTE7101 is an audio power amplifier in an 8-Lead SIP type package designed for use in car radio and car stereo applications. This device features a low thermal resistance providing easy design for 2Ω load circuits and 4Ω load BTL circuits.

Features:

- High Output Power:
 - $P_O = 7W$ Typ @ $R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4V$
 - $P_O = 11W$ Typ @ $R_L = 2\Omega$, THD = 10%, $V_{CC} = 14.4V$
 - $P_O = 18W$ (Bridge) @ $R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4V$
- Low Distortion: THD = 0.1% Typ @ $R_L = 4\Omega$, $P_O = 500mW$
- High Reliability
- Protection Circuits Include:
 - Load Dump Voltage Surge
 - Thermal Overload
 - Output DC and AC Short Circuit to GND or V_{CC}
 - Reverse Insertion
- Minimum External Components Required

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

| | |
|--|----------------|
| Surge Supply Voltage (PW = 200ms), $V_{CCsurge}$ | 50V |
| Quiescent Supply Voltage (Note 1), V_{CC1} | 25V |
| Operational Supply Voltage, V_{CC2} | 18V |
| Peak Circuit Current, I_{CCpeak} | 4.5A |
| Power Dissipation, P_D | 12W |
| Operating Temperature Range (Note 1), T_{opr} | -30° to +75°C |
| Storage Temperature Range, T_{stg} | -55° to +150°C |

Note 1. Using an aluminum heat sink 100mm x 100mm x 1mm.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|----------------------|----------|-----------------|-----|-----|------|------|
| Supply Voltage Range | V_{CC} | | 9.5 | - | 16.0 | V |
| Load Impedance | R_L | | 2 | - | 16 | Ω |

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $f = 1\text{kHz}$, $R_L = 4\Omega$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------|----------|--|------|------|------|--------------------------|
| Circuit Current | I_{CC} | $v_{in} = 0$, $V_{CC} = 13.2\text{V}$ | 25 | 45 | 80 | mA |
| Output Power | P_O | $R_L = 4\Omega$, THD = 10%, $V_{CC} = 13.2\text{V}$ | 5.0 | 5.8 | - | W |
| | | $R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4\text{V}$ | - | 7.0 | - | W |
| | | $R_L = 2\Omega$, THD = 10%, $V_{CC} = 13.2\text{V}$ | - | 9.2 | - | W |
| | | $R_L = 2\Omega$, THD = 10%, $V_{CC} = 14.4\text{V}$ | - | 11.0 | - | W |
| Total Harmonic Distortion | THD | $R_L = 4\Omega$, $P_O = 500\text{mW}$, $V_{CC} = 13.2\text{V}$ | - | 0.1 | 1.0 | % |
| | | $R_L = 2\Omega$, $P_O = 1\text{W}$, $V_{CC} = 13.2\text{V}$ | - | 0.4 | - | % |
| Voltage Gain | A_v | $P_O = 500\text{mW}$ | 49.0 | 51.5 | 54.0 | dB |
| Output Noise Level | v_n | $R_G = 10\text{k}\Omega$ | - | 1.4 | 4.0 | mV_{rms} |

Pin Connection Diagram
(Front View)

