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## NTE1368 Integrated Circuit Dual Audio Power Amplifier, 5.8W/Channel

### Description:

The NTE1368 is an integrated circuit in a 12-Lead SIP type package designed for dual, low-frequency, high power amplifier applications. This device requires few external components, thus enabling high density mounting. Design for heat radiation is easy due to low thermal resistance. The NTE1368 contains internal power-on pop noise protection circuitry and various other protection circuits. This device is best suited for car stereo applications.

### Features:

- High Power Output
- Low Noise Output Voltage
- Low Total Harmonic Distortion
- Minimum External Components
- On-Chip Power On Pop Noise Protection Circuit
- Audio Mute Function is provided
- Separated GND Pins for Input/Output Circuit
- Various Protection Circuits:
  - Overvoltage Protection
  - Thermal Protection
  - Load Short Protection
  - Output Pin-to-DC Short Protection

### Absolute Maximum Ratings: (Note 1)

|  |                |
|--|----------------|
| Power Supply Voltage, $V_{CC}$                 |                |
| No Signal                                      | 24V            |
| Operational                                    | 18V            |
| Surge ( $t_s \leq 0.2$ sec, $t_r \geq 1$ msec) | 40V            |
| Output Current (Peak), $I_{OPEAK}$             | 4.5A           |
| Power Dissipation, $P_D$                       | 18W            |
| Operating Case Temperature Range, $T_C$        | -20° to +75°C  |
| Storage Temperature Range, $T_{stg}$           | -55° to +150°C |

Note 1. Permanent device damage may occur if "ABSOLUTE MAXIMUM RATINGS" are exceeded. Functional operation should be restricted to the conditions as detailed in the operational sections of this data sheet. Exposure to absolute maximum rating condition for extended periods may affect device reliability.

### Recommended Operating Conditions:

|                                     |               |
|-------------------------------------|---------------|
| Power Supply Voltage, $V_{CC}$      | 8 to 16V      |
| Operating Temperature Range, $T_C$  | -20° to +75°C |
| Output Load (Dual Operation), $R_L$ | 2Ω to 8Ω      |



**Electrical Characteristic:** ( $V_{CC} = 13.2V$ ,  $f = 1kHz$ ,  $R_L = 4\Omega$ ,  $T_C = +25^\circ C$ , One Channel Operation unless otherwise specified)

| Parameter                      | Symbol       | Test Conditions                      | Min  | Typ  | Max  | Unit       |
|--------------------------------|--------------|--------------------------------------|------|------|------|------------|
| Quiescent Power Supply Current | $I_Q$        | $V_{IN} = 0V$ , $R_L = \infty$       | –    | 80   | 160  | mA         |
| Voltage Gain                   | $A_V$        | $P_O = 1W$                           | 48.5 | 50.5 | 52.5 | dB         |
| Difference Voltage Gain        | $\Delta A_V$ | $P_O = 1W$                           | –    | 0    | 1.5  | dB         |
| Output Power                   | $P_O$        | THD = 10%                            | 5.0  | 5.8  | –    | W          |
| Total Harmonic Distortion      | THD          | $P_O = 1W$                           | –    | 0.2  | 1.0  | %          |
| Output Noise Voltage           | $V_{NO}$     | $R_g = 10k\Omega$ , BW = 20 to 20kHz | –    | 0.8  | 1.6  | mV         |
| Input Resistance               | $R_{IN}$     |                                      | 20   | 30   | –    | k $\Omega$ |
| Cross Talk                     | CT           | $R_g = 600\Omega$                    | 40   | 50   | –    | dB         |
| Audio Mute Attenuation         |              | $R_g = 600\Omega$                    | –    | 40   | –    | dB         |

**Pin Connection Diagram**  
(Front View)

