



ELECTRONICS, INC.  
44 FARRAND STREET  
BLOOMFIELD, NJ 07003  
(973) 748-5089  
<http://www.nteinc.com>

## NTE7113 Integrated Circuit Dual Audio Power Amplifier, 14W BTL

### **Description:**

The NTE7113 is an integrated circuit in a 16-Lead Staggered SIP type package designed for use as a 14W (13.2V, 4Ω) output power amplifier. Stereo operation is enabled due to incorporating two BTL amplifiers. High reliability is obtained due to incorporating protectors. ON/OFF is enabled even if power is supplied to power supply terminal by applying stand-by circuit.

### **Features:**

- High Output Power: 14W x 2
- Incorporates Protection Circuits:  
Temperature, Over-Voltage,  $V_{OUT} - GND$  Short,  $V_{OUT} - V_{CC}$  Short
- Low Shock Noise from Power ON/OFF Operation
- Fewer External Components
- High Stable Operation

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

Supply Voltage (No Signal),  $V_{CC}$  ..... 24V  
Peak Supply Voltage (Time = 0.2s),  $V_{CC(surge)}$  ..... 50V  
Supply Current,  $I_{CC}$  ..... 6A  
Power Dissipation,  $P_D$  ..... 62.5W  
Operating Ambient Temperature Range,  $T_{opr}$  .....  $-30^\circ$  to  $+75^\circ\text{C}$   
Storage Temperature Range,  $T_{stg}$  .....  $-55^\circ$  to  $+150^\circ\text{C}$   
Thermal Resistance, Junction-to-Case,  $R_{thJC}$  .....  $2^\circ\text{C/W}$

### **Electrical Characteristics:** ( $V_{CC} = 13.2\text{V}$ , $R_L = 4\Omega$ , $f = 1\text{kHz}$ , $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter                 | Symbol   | Test Conditions                                           | Min  | Typ  | Max  | Unit          |
|---------------------------|----------|-----------------------------------------------------------|------|------|------|---------------|
| Quiescent Circuit Current | $I_{CQ}$ | $V_{in} = 0\text{mV}$                                     | –    | 120  | 200  | mA            |
|                           |          | Stand-by Terminal ON                                      | –    | 21   | –    | $\mu\text{A}$ |
| Output Noise Voltage      | $V_{no}$ | $V_{in} = 0\text{mV}$ , $R_g = 10\text{k}\Omega$ , Note 1 | –    | 0.6  | 1.5  | mV            |
| Voltage Gain              | $G_v$    | $V_{in} = 5\text{mV}$                                     | 50.5 | 52.5 | 54.5 | dB            |
| Total Harmonic Distortion | THD      | $V_{in} = 5\text{mV}$                                     | –    | 0.20 | 0.75 | %             |
|                           |          | $V_{in} = 5\text{mV}$ , $f = 100\text{Hz}$                | –    | 0.26 | –    | %             |
|                           |          | $V_{in} = 5\text{mV}$ , $f = 10\text{kHz}$                | –    | 0.45 | –    | %             |
| Maximum Output Power (4Ω) | $P_O$    | THD = 10%                                                 | 9.0  | 12.5 | –    | W             |

Note 1. 15Hz to 30kHz (12dB/oct) With Filter

**Electrical Characteristics (Cont'd):** ( $V_{CC} = 13.2V$ ,  $R_L = 4\Omega$ ,  $f = 1kHz$ ,  $T_A = +25^{\circ}C$  unless otherwise specified)

| Parameter                 | Symbol          | Test Conditions                                                         | Min  | Typ | Max  | Unit |
|---------------------------|-----------------|-------------------------------------------------------------------------|------|-----|------|------|
| Ripple Rejection Ratio    | RR              | $R_g = 0\Omega$ , $V_{in} = 0mV$ , Ripple = 300mV, $f = 120Hz$ , Note 1 | 35   | 40  | –    | dB   |
| Output Offset Voltage     | $V_{O(offset)}$ | $V_{in} = 0mV$                                                          | –300 | 0   | +300 | mV   |
| Channel Balance           | CB              | $V_{in} = 5mV$                                                          | –1   | 0   | +1   | dB   |
| Frequency Characteristics | $f_{CH}$        | $V_{in} = 5mV$ , –3dB Down                                              | –    | 22  | –    | kHz  |
|                           | $f_{CL}$        |                                                                         | –    | 21  | –    | Hz   |
| Crosstalk                 | CT              | $V_{in} = 5mV$ , $R_g = 10k\Omega$                                      | –    | 61  | –    | dB   |

Note 1. 15Hz to 30kHz (12dB/oct) With Filter

