



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

NTE1110

Integrated Circuit

Audio Power Amp, 2W

Description:

The NTE1110 is a 2 Watt Audio Power Amp packaged in a 16-Lead DIP plastic package with a heat sink fin.

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

Supply Voltage, V_{CC}	12V
Supply Current, I_{CC}	1.5A
Power Dissipation ($T_A = +45^\circ\text{C}$), P_d	1.1W
Derate Above $+45^\circ\text{C}$	14.1mW/ $^\circ\text{C}$
Power Dissipation ($T_A = +45^\circ\text{C}$, 50 x 50 x 1mm Al), P_d	1.7W
Derate Above $+45^\circ\text{C}$	21.4mW/ $^\circ\text{C}$
Operating Temperature Range, T_{opg}	-10 to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-20 to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 9V$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero-Signal Supply Current	I_{CC}		20	30	60	mA
Pre-Amplifier						
Closed-Loop Voltage Gain Play Mode	$G_{VC} 1$	$f = 1k$	–	35	–	dB
Record Mode			–	20	–	dB
Open-Loop Voltage Gain	$G_{VO} 1$	$f = 1k$	55	60	–	dB
			$V_{CC} = 4V$	42	50	–
Input Resistance (Play Mode)	$R_i 1$	$f = 1k$	–	60	–	k Ω
Linearity (Record Mode)	$V_O 1$	$f = 1k$	0.3	0.5	–	V_{rms}
			$V_{CC} = 4V$	0.3	–	V_{P-P}
Input Referred Noise Voltage	$N_i 1$	DIN. EQ., $R_g = 1k\Omega$	–	0.8	2.0	μV
AGC Figure of Merit	AGC		–	40	–	dB

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$, $V_{CC} = 9\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Tone–Amplifier							
Closed–Loop Voltage Gain Play Mode	$G_{VC\ 2}$	$f = 1\text{k}$		–	40	–	dB
Recorded Mode				–	20	–	dB
Open–Loop Voltage Gain	$G_{VO\ 2}$	$f = 1\text{k}$		50	60	–	dB
			$V_{CC} = 4\text{V}$	45	55	–	dB
Input Resistance (Play Mode)	$R_i\ 2$	$f = 1\text{k}$		–	80	–	$\text{k}\Omega$
Linearity (Play Mode)	$V_O\ 2$	$f = 1\text{k}, R_i = 330\Omega$		0.3	0.5	–	V_{rms}
			$V_{CC} = 4\text{V}$	0.3	–	–	$V_{\text{P–P}}$
Input Referred Noise Voltage (Play Mode)	$N_i\ 1$	Tone: Flat, $R_g = 0\Omega$		–	–	3.16	μV
Power–Amplifier							
Closed–Loop Voltage Gain	$G_{VC\ 3}$	$f = 1\text{k}$		–	25	–	dB
Open–Loop Voltage Gain	$G_{VO\ 3}$	$f = 1\text{k}$		34	40	–	dB
			$V_{CC} = 4\text{V}$	30	33	–	dB
Power Output (Closed–Loop)	P_O	$f = 1\text{K}, \text{THD} \leq 1\%$		1.5	–	–	W

Pin Connection Diagram



