



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089

NTE1294 Integrated Circuit Audio Power Amplifier, 1.2W

Description:

The NTE1294 is a monolithic integrated audio amplifier in an 8-Lead DIP type package designed for use as a low frequency class B power amplifier with a wide supply voltage range (3V to 16V) in portable radios, cassette recorders, and players etc.

Features:

- Minimum Working Supplu Voltage: $V_s = 3V$ Min
- Low Quiescent Current
- Low Number of External Components
- Good Ripple Rejection
- No Cross-over Distortion
- Low Power Dissipation
- Output Power:
 - $P_o = 2W$ at $12V/8\Omega$
 - $P_o = 1.6W$ at $9V/4\Omega$
 - $P_o = 1.2W$ at $9V/8\Omega$

Absolute Maximum Ratings:

Supply Voltage, V_s	16V
Output Peak Current, I_o	1.5A
Power Dissipation ($T_A = +50^\circ C$), P_{tot}	1W
Junction Temperature Range, T_J	-40° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ C$
Maximum Thermal Resistance, Junction-to-Ambient, R_{thJA}	$100^\circ C/W$

Electrical Characteristics: ($V_s = 9V$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_s		3	–	16	V
Quiescent Output Voiltage (Pin5)	V_o		4.0	4.5	5.0	V
Quiescent Drain Current	I_d		–	4	12	mA
Bias Current (Pin3)	I_b		–	0.1	–	μA



Electrical Characteristics (Cont'd): ($V_S = 9V$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Power	P_o	$d = 10\%$, $f = 1\text{kHz}$, $R_f = 120\Omega$	$V_s = 12V$, $R_L = 8\Omega$	–	2	–	W
			$V_s = 9V$, $R_L = 4\Omega$	–	1.6	–	W
			$V_s = 9V$, $R_L = 8\Omega$	0.9	1.2	–	W
			$V_s = 6V$, $R_L = 4\Omega$	–	0.75	–	W
			$V_s = 3.5V$, $R_L = 4\Omega$	–	0.25	–	W
			$V_s = 3V$, $R_L = 4\Omega$	–	0.20	–	W
Input Sensitivity	$V_{i(rms)}$	$P_o = 1.2W$, $R_L = 8\Omega$, $f = 1\text{kHz}$	$R_f = 33\Omega$	–	16	–	mV
			$R_f = 120\Omega$	–	60	–	mV
		$P_o = 50mW$, $R_L = 8\Omega$, $f = 1\text{kHz}$	$R_f = 33\Omega$	–	3.5	–	mV
			$R_f = 120\Omega$	–	12	–	mV
Input Resistance (Pin3)	R_i	$f = 1\text{kHz}$	–	5	–	$M\Omega$	
Frequency Response (–3dB)	B	$R_L = 8\Omega$, $C_5 = 1000\mu F$, $R_f = 120\Omega$	$C_B = 680pF$	25 to 7000			Hz
			$C_B = 220pF$	25 to 20000			Hz
Distortion	d	$P_o = 500mW$, $R_L = 8\Omega$, $f = 1\text{kHz}$	$R_f = 33\Omega$	–	0.8	–	%
			$R_f = 120\Omega$	–	0.4	–	%
Voltage Gain (Open Loop)	G_v	$f = 1\text{kHz}$, $R_L = 8\Omega$	–	75	–	dB	
Voltage Gain (Closed Loop)	G_v	$R_L = 8\Omega$, $f = 1\text{kHz}$	$R_f = 33\Omega$	–	45	–	dB
			$R_f = 120\Omega$	–	34	–	dB
Input Noise Voltage	e_N	Note 1	–	3	–	μV	
Input Noise Current	i_N	Note 1	–	0.4	–	nA	
Signal to Noise Ratio	$\frac{S+N}{N}$	$P_o = 1.2W$, $R_L = 8\Omega$, $G_v = 34\text{dB}$, Note 1	$R1 = 10k\Omega$	–	80	–	dB
			$R1 = 50k\Omega$	–	70	–	dB
Supply Voltage Rejection	SVR	$R_L = 8\Omega$, $f_{ripple} = 100\text{Hz}$, $C_6 = 47\mu F$, $R_f = 120\Omega$	–	42	–	dB	

Note 1. B = 22Hz to 22kHz

Pin Connection Diagram

