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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/8Ω
  P_O = 1.6W at 9V/4Ω
  P_O = 1.2W at 9V/8Ω

Absolute Maximum Ratings:

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

Electrical Characteristics: (V_S = 9V, T_A = +25°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°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Power	P_o	d = 10%, f = 1kHz, R_f = 120Ω	V_S = 12V, R_L = 8Ω	–	2	–	W
			V_S = 9V, R_L = 4Ω	–	1.6	–	W
			V_S = 9V, R_L = 8Ω	0.9	1.2	–	W
			V_S = 6V, R_L = 4Ω	–	0.75	–	W
			V_S = 3.5V, R_L = 4Ω	–	0.25	–	W
			V_S = 3V, R_L = 4Ω	–	0.20	–	W
Input Sensitivity	$V_{i(rms)}$	P_o = 1.2W, R_L = 8Ω, f = 1kHz	R_f = 33Ω	–	16	–	mV
			R_f = 120Ω	–	60	–	mV
		P_o = 50mW, R_L = 8Ω, f = 1kHz	R_f = 33Ω	–	3.5	–	mV
			R_f = 120Ω	–	12	–	mV
Input Resistance (Pin3)	R_i	f = 1kHz		–	5	–	MΩ
Frequency Response (–3dB)	B	R_L = 8Ω, C_5 = 1000µF, R_f = 120Ω	C_B = 680pF	25 to 7000			Hz
			C_B = 220pF	25 to 20000			Hz
Distortion	d	P_o = 500mW, R_L = 8Ω, f = 1kHz	R_f = 33Ω	–	0.8	–	%
			R_f = 120Ω	–	0.4	–	%
Voltage Gain (Open Loop)	G_v	f = 1kHz, R_L = 8Ω		–	75	–	dB
Voltage Gain (Closed Loop)	G_v	R_L = 8Ω, f = 1kHz	R_f = 33Ω	–	45	–	dB
			R_f = 120Ω	–	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 = 8Ω, G_v = 34dB, Note 1	R1 = 10kΩ	–	80	–	dB
			R1 = 50kΩ	–	70	–	dB
Supply Voltage Rejection	SVR	R_L = 8Ω, f_{ripple} = 100Hz, C6 = 47µF, R_f = 120Ω		–	42	–	dB

Note 1. B = 22Hz to 22kHz

Pin Connection Diagram