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NTE1852 Integrated Circuit 4W Audio Amplifier with DC Volume Control

Description:

The NTE1852 is a monolithic integrated 4W audio Amplifier circuit with DC volume control in a 9-pin single in-line (SIP) plastic package. The wide supply voltage range makes this circuit very suitable for applications such as television receivers and record players.

The DC volume control stage has a logarithmic control characteristic with a range of more than 80dB. Control can be obtained by means of a variable DC voltage between 3.5 and 8V.

The audio amplifier has a well-defined open-loop gain and a fixed integrated closed-loop gain. This offers an optimum in number of external components, performance and stability

Features:

- DC volume control
- SIP package
- Low distortion
- Logarithmic control

Applications:

- Computers
- Intercom
- AM/FM Radio
- Television
- Modems

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

Supply Voltage, V_{CC}	35V
Non-repetitive peak output current, I_{OSM}	3A
Repetitive peak output current, I_{ORM}	1.5A
Storage Temperature Range, T_{stg}	-65 to +150°C
Total Power Dissipation, P_{TOT}	see derating curve

DC and AC Electrical Characteristics: ($V_{CC} = 18\text{V}$; $R_L = 8\Omega$; $f = 1\text{kHz}$; $T_A = 25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	15	-	35	V
Total quiescent current	I_{TOT}	-	35	-	mA

Parameter	Symbol	Min	Typ	Max	Unit
Noise output voltage (see note)	V_n	-	-	1.4	mV
Total sensitivity (DC control at maximum gain for $P_O = 2.5W$)	V_i	38	55	69	mV
Frequency response (-3dB)	f	35Hz	-	20	kHz
AUDIO AMPLIFIER					
Repetitive peak output current	I_{ORM}	-	-	1.5	A
Output power at $d_{TOT} = 10\%$	P_O	4	4.5	-	W
Total harmonic distortion at $P_O = 2.5W$	d_{TOT}	-	0.5	1	%
Voltage gain	A_V	-	30	-	dB
Sensitivity for $P_O = 2.5W$	V_i	100	125	160	mV
Input impedance (Pin 5)	$ Z_I $	100	250	500	k Ω
DC VOLUME CONTROL UNIT					
Gain Control Range	ϕ	80	-	-	dB
Signal handling at $d_{TOT} < 1\%$ (DC control at 0dB) sensitivity for $V_O = 125mV$ at maximum voltage gain	V_i V_i	1.2 -	- 55	- -	V mV
Input impedance (Pin 8)	$ Z_I $	100	250	-	k Ω
Output impedance (Pin 6)	$ Z_O $	100	200	400	Ω

Note: $R_S = 5k\Omega$ and DC control at minimum gain.

