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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°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} = 18V; R_L = 8Ω; f = 1kHz; T_A = 25°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	kΩ
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	–	kΩ
Output impedance (Pin 6)	$\|Z_O\|$	100	200	400	Ω

Note: R_S = 5kΩ and DC control at minimum gain.