

NTE1383 Integrated Circuit Dual Audio Power Amp, 5.1W/Ch (10.5W BTL)

Description:

The NTE1383 is an integrated circuit in an 18-Lead DIP designed for use as an audio output with low noise, low distortion, and high output for a wide range of power supply voltages and load resistance. Two built-in amplifiers provide dual or BTL operation. Typical applications include radio cassette recorder, tape recorder, car stereo, and home entertainment.

Features:

- High Output Power, Dual or BTL Circuit Operation
- Wide Output Power Setting Range
- Wide Supply Voltage Range
- Incorporates an Automatic Operating Point Stabilizer Circuit
- Low Distortion, Low 1/f Noise, and Low Shock Noise
- High Audio Channel Separation
- Incorporates a Phase Converter

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

Supply Voltage (Note 1), V_{CC}	20V
Supply Current, I_{CC}	4A
Power Dissipation ($T_A = +60^\circ\text{C}$), P_D	14W
Operating Ambient Temperature Range, T_{opr}	-30° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Note 1. V_{CC} at operation mode = 20V (Stabilized power source).

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Quiescent Circuit Current	I_{CQ}	$V_{CC} = 9V$	$V_i = 0$	20	35	55	mA
		$V_{CC} = 12V$		21	40	65	
		$V_{CC} = 13.2V$		22	40	66	

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
BTL ($R_L = 8\Omega$, $f = 1\text{kHz}$)							
Voltage Gain	G_V	$V_{CC} = 9\text{V}$	$V_i = 4\text{mV}$	40	43	46	dB
		$V_{CC} = 12\text{V}$		40	43	46	dB
		$V_{CC} = 13.2\text{V}$		40	43	46	dB
Total Harmonic Distortion	THD	$V_{CC} = 9\text{V}$	$V_i = 4\text{mV}$	–	0.15	1.0	%
		$V_{CC} = 12\text{V}$		–	0.15	1.0	%
		$V_{CC} = 13.2\text{V}$		–	0.15	1.0	%
Output Power	P_O	$V_{CC} = 9\text{V}$	THD = 10%	4.5	5.0	–	W
		$V_{CC} = 12\text{V}$		8.0	9.0	–	W
		$V_{CC} = 13.2\text{V}$		9.4	10.5	–	W
Output Noise Voltage	V_{no}	$V_{CC} = 9\text{V}$	$V_i = 0$, $R_g = 3.9\text{k}\Omega$	–	0.3	1.0	mV
		$V_{CC} = 12\text{V}$	$V_i = 0$, $R_g = 10\text{k}\Omega$	–	0.5	2.0	mV
		$V_{CC} = 13.2\text{V}$		–	0.7	2.0	mV
Output Offset Voltage	$V_{O(\text{offset})}$	$V_{CC} = 9\text{V}$	$V_i = 0$	–10	–	+10	mV
		$V_{CC} = 12\text{V}$		–12	–	+12	mV
		$V_{CC} = 13.2\text{V}$		–12	–	+12	mV
Dual ($R_L = 4\Omega$, $f = 1\text{kHz}$)							
Voltage Gain	G_V	$V_{CC} = 9\text{V}$	$V_i = 4\text{mV}$	41	44	47	dB
		$V_{CC} = 12\text{V}$		42	45	48	dB
		$V_{CC} = 13.2\text{V}$		42	45	48	dB
Total Harmonic Distortion	THD	$V_{CC} = 9\text{V}$	$V_i = 4\text{mV}$	–	0.3	1.0	%
		$V_{CC} = 12\text{V}$		–	0.3	1.0	%
		$V_{CC} = 13.2\text{V}$		–	0.3	1.0	%
Output Power	P_O	$V_{CC} = 9\text{V}$	THD = 10%	2.0	2.4	–	W
		$V_{CC} = 12\text{V}$		3.6	4.2	–	W
		$V_{CC} = 13.2\text{V}$		4.5	5.1	–	W
Output Noise Voltage	V_{no}	$V_{CC} = 9\text{V}$	$V_i = 0$, $R_g = 3.9\text{k}\Omega$	–	0.2	1.0	mV
		$V_{CC} = 12\text{V}$	$V_i = 0$, $R_g = 10\text{k}\Omega$	–	0.3	1.5	mV
		$V_{CC} = 13.2\text{V}$		–	0.3	1.5	mV
Channel Balance	CB	$V_{CC} = 9\text{V}$	$V_i = 4\text{mV}$	–	0	1	dB
		$V_{CC} = 12\text{V}$		–	0	1	dB
		$V_{CC} = 13.2\text{V}$		–	0	1	dB

Pin Connection Diagram

