NTE ELECTRONICS, INC.
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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°C unless otherwise specified)

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

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

Electrical Characteristics: (T_A = +25°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	mA
		V_{CC} = 13.2V		22	40	66	mA

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

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

Pin Connection Diagram