

NTE1724 Integrated Circuit Audio Power Amplifier, 20W

Description:

This device is a monolithic integrated circuit and a power amplifier designed for Hi-Fi audio sets and in a 10 pin single in-line plastic package. NTE1724 can provide 20W (Typ) to 8Ω at 1% THD and ±22V supply voltage.

Features:

- High Output Power:
20W Typ ($V_{CC} = \pm 22V$, $A_v = 40dB$, $f = 20Hz$ to $20kHz$, $R_L = 8\Omega$, THD = 1%)
20W Typ ($V_{CC} = \pm 22V$, $A_v = 27.5dB$, $f = 20Hz$ to $20kHz$, $R_L = 8\Omega$, THD = 0.5%)
- Low Distortion:
0.02% Typ ($V_{CC} = \pm 22V$, $A_v = 40dB$, $f = 1kHz$, $R_L = 8\Omega$, $P_{OUT} = 5.0W$)
0.005% Typ ($V_{CC} = \pm 22V$, $A_v = 27.5dB$, $f = 1kHz$, $R_L = 8\Omega$, $P_{OUT} = 5.0W$)
- Wide Frequency Bandwidth: $f = 250kHz$ (-3dB)

Absolute Maximum Ratings:

Supply Voltage (Quiescent), V_{CC} ±30V
Circuit Current, $I_{CC(peak)}$ 5A
Package Dissipation ($T_{tab} = +60^\circ C$), P_D 30W
Operating Temperature Range, T_{opt} -20° to +70°C
Storage Temperature Range, T_{stg} -55° to +150°C
Thermal Resistance Junction to Case, R_{thJC} 3°C/W

Recommended Operating Conditions: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage			±17	±22	±23	V
Input Impedance			47	56	100	kΩ
Closed Loop Voltage Gain			26	40	—	dB
Load Impedance			4	8	—	Ω

Electrical Characteristics: ($V_{CC} = \pm 22V$, $A_v = 40dB$, $R_L = 8\Omega$, $T_G = 600\Omega$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Offset Voltage	V_{10}	No Signal	-100	0	+100	mV
Circuit Current	I_{CC}	No Signal	30	60	120	mA
Output Power	P_O	THD = 0.5%, $f = 20Hz$ to $20kHz$	16	18	—	W

Electrical Characteristics (Cont'd): ($V_{CC} = \pm 22V$, $A_V = 40dB$, $R_L = 8\Omega$, $T_G = 600\Omega$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Open Loop Voltage Gain	A_{VO}	$P_O = 0.3W$, $f = 1kHz$	65	75	–	dB
Total Harmonic Distortion	THD	$P_O = 10W$, $f = 20Hz$ to $20kHz$	–	0.1	0.3	%
Output Noise Voltage	NV	$R_G = 2.2k\Omega$, No Filter	–	0.4	1.0	mV
Power Band Width	PBW	$P_O = 0.3W$, $-3dB$	–	250	–	kHz
Supply Voltage Rejection Ratio	SVR	$R_G = 2.2k\Omega$ $f_{ripple} = 100Hz$	50	56	–	dB

Pin Connection Diagram
(Front View)

