

NTE7102 Integrated Circuit Dual Audio Power Amplifier, 5.5W/Ch (20W BTL)

Description:

The NTE7102 is a class B dual audio power amplifier in a 14-Lead DIP type package designed for use in a music center and a radio cassette player.

Features:

- High Output Power: 20W Typ @ $V_{CC} = 18V$, $R_L = 8\Omega$ (BTL)
5.5W/Ch Typ @ $V_{CC} = 18V$, $R_L = 8\Omega$
7W/Ch Typ @ $V_{CC} = 15V$, $R_L = 4\Omega$
5.7W/Ch Typ @ $V_{CC} = 12V$, $R_L = 3\Omega$
4.6W/Ch Typ @ $V_{CC} = 12V$, $R_L = 4\Omega$
- Wide Operating Voltage Range: $V_{CC} = 6$ to $20V$
- Low Quiescent Current: $I_{CC} = 23mA$ Typ @ $V_{CC} = 15V$
- Low Noise: $N_L = 0.25mV_{rms}$ Typ
- High Supply Voltage Rejection: $SVR = 55dB$ Typ
- No Shock Noise at Power Supply Switch ON and OFF
- Soft Clipping Wave Form
- Built-In Thermal Shutdown Circuit
- Low Thermal Resistance: $R_{\theta JC} = 3^{\circ}C/W$
- Few External Components

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

Supply Voltage,	
No Signal, V_{CC1}	28V
Operating, V_{CC2}	25V
Powewr Dissipation (100 x 100 x 2mm Al Heat Sink), P_D	14W
Operating Temperature Range, T_{opr}	-20° to $+70^{\circ}C$
Storage Temperature Range, T_{stg}	-40° to $+150^{\circ}C$

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

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	6.0	12.15	20.0	V
Load Impedance (Dual)	R_L	3	4	8	Ω
Load Impedance (BTL)	R_L	—	—	8	Ω
Voltage Gain	A_v	38	48	—	dB

Electrical Characteristics: ($V_{CC} = 15V$, $R_L = 4\Omega$, $f = 1kHz$, $T_A = +25^\circ C$, 100 x 100 x 2mm Al panel Heat Sink unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_{CC}	No Signal	–	23	36	mA
Voltage Gain	A_v		46	48	50	dB
Output Power	P_O	THD = 10% $V_{CC} = 12V$, $R_L = 4\Omega$	–	4.6	–	W
		$V_{CC} = 12V$, $R_L = 3\Omega$	–	5.7	–	W
		$V_{CC} = 15V$, $R_L = 4\Omega$	6.0	7.0	–	W
		$V_{CC} = 18V$, $R_L = 8\Omega$	–	5.5	–	W
		THD = 10%, BTL, $V_{CC} = 18V$, $R_L = 4\Omega$	–	20	–	W
Total Harmonic Distortion	THD	$P_O = 1W$	–	0.2	1.0	%
Output Noise Voltage	NL	DIN AUDIO, $R_G = 0$	–	0.26	0.6	mV _{rms}
Crosstalk	CT	$P_O = 2W$, other Ch, $R_G = 0$	45	55	–	dB
Channel Balance	Ch. B	$P_O = 4W$	–1	0	+1	dB
Ripple Rejection	SVR	$R_G = 0$, $f = 100Hz$, $V = 0.3mV_{rms}$	45	55	–	dB
Input Impedance	Z_{in}		20	30	–	k Ω

Pin Connection Diagram
(Front View)

14	GND (Output)
13	Output 2
12	V_{CC}
11	Compensation 2
10	Bootstrap 2
9	NFB 2
8	Input 2
7	Filter
6	GND (Input)
5	NFB 1
4	Input 1
3	Compensation 1
2	Bootstrap 1
1	Output 1

