

NTE7051 Integrated Circuit 1W BTL Mono Audio Amplifier

Description:

The NTE7051 is a mono output amplifier in a 8-Lead DIP style plastic package designed for use in battery-fed portable audio applications, such as tape recorders and radios.

This device uses the Bridge-Tied-Load principle (BTL) which can deliver an output power of 1.2W (THD = 10%) into an 8Ω load with a power supply of 6V. The load can be short-circuited at each signal excursion.

Features:

- No External Components
- No Switch-On or Switch-Off Clicks
- Good Overall Stability
- Low Power Consumption
- No External Heatsink Required
- Short-Circuit Proof

Absolute Maximum Ratings:

Supply Voltage, V_P 18V
 Non-Repetitive Peak Output Current, I_{OSM} 1.5A
 Total Power Dissipation ($T_A = +25^\circ\text{C}$), P_{tot} 1.15W
 Operating Junction Temperature, T_C $+150^\circ\text{C}$
 Storage Temperature Range, T_{stg} -65° to $+150^\circ\text{C}$

Electrical Characteristics: ($V_P = 6\text{V}$, $R_L = 8\Omega$, $f = 1\text{kHz}$, $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Range	V_P		3	6	15	V
Total Quiescent Current	I_{tot}	$R_L = \infty$	—	4	8	mA
Voltage Gain	G_V		39	40	41	dB
Output Power	P_O	THD = 10%	—	1.2	—	W

Electrical Characteristics (Cont'd): ($V_P = 6V$, $R_L = 8\Omega$, $f = 1kHz$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Noise Output Voltage (RMS)	$V_{no(rms)}$	Note 1	–	150	300	μV
		Note 2	–	60	–	μV
Frequency Response	f_r		20 to 20k			Hz
Supply Voltage Ripple Rejection	SVRR	Note 3	40	50	–	dB
DC Output Offset Voltage (Pin5 to Pin8)	ΔV_{5-8}	$R_S = 5k\Omega$	–	–	100	mV
Total Harmonic Distortion	THD	$P_O = 0.1W$	–	0.2	–	%
Input Impedance	$ Z_I $		–	100	–	$k\Omega$
Input Bias Current	I_{bias}		–	100	300	nA

Note 1. The unweighted RMS noise output voltage is measured at a bandwidth of 60Hz to 15kHz with a source impedance (R_S) of 5k Ω .

Note 2. The RMS noise output voltage is measured at a bandwidth of 5kHz with a source impedance of 0 Ω and a frequency of 500kHz. With a practical load ($R = 8\Omega$, $L = 200\mu H$) the noise output current is only 100nA.

Note 3. Ripple Rejection is measured at the output with a source impedance of 0 Ω and a frequency between 100Hz and 10kHz. The ripple voltage = 200mV (RMS value) is applied to the positive supply rail.

Pin Connection Diagram

