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## 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,  $T_{stg}$  .....  $-65^\circ$  to  $+150^\circ\text{C}$

**Electrical Characteristics:** ( $V_P = 6V$ ,  $R_L = 8\Omega$ ,  $f = 1\text{kHz}$ ,  $T_A = +25^\circ\text{C}$  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	$\mu V$
		Note 2	–	60	–	$\mu V$
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)	$\Delta V_{5-8}$	$R_S = 5k\Omega$	–	–	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 $\Omega$ .
- Note 2. The RMS noise output voltage is measured at a bandwidth of 5kHz with a source impedance of 0 $\Omega$  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 $\Omega$  and a frequency between 100Hz and 10kHz. The ripple voltage = 200mV (RMS value) is applied to the positive supply rail.

