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NTE7052
Integrated Circuit
Mono BTL Audio Amplifier, 3W

Description:

The NTE7052 is a mono output amplifier in a 9–Lead SIP type package designed for use in battery–fed portable radios and mains–fed equipment such as televisions. This device needs no external components because it makes use of the Bridge–Tied–Load (BTL) principle. Consequently it has, at the same supply voltage, a higher output power compared to a conventional Single Ended output stages. The NTE7052 is capable of delivering an output power of 1W into a loudspeaker load of 8Ω with a 6V supply or 3W into a 16Ω loudspeaker at 11V without the need of an external heatsink. The gain is internally fixed at 40dB. Special attention is given to ON/OFF switch click suppression, and it has a good overall stability. The load can be short circuited at all input conditions.

Features:

- No External Components
- No ON/OFF Switch Clicks
- Good Overall Stability
- Low Power Consumption
- Short–Circuit Protection
- ESD Protected on All Pins

Absolute Maximum Ratings:

Supply Voltage, V_P 18V
Peak Repetitive Output Current, I_{ORM} 1A
Peak Non–Repetitive Output Current, I_{OSM} 1.5A
Total Power Dissipation (T_C < +60°C), P_{tot} 9W
Short Circuit Time (Note 1), T_{SC} 1Hr
Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} 10K/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} 55K/W

Note 1. The load can be short–circuited at all input conditions.

Electrical Characteristics: (T_A = +25°C, V_P = 11V, f = 1kHz, R_L = 16Ω unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage	V_P		3	11	18	V
Repetitive Peak Output Current	I_{ORM}		–	–	600	mA
Total Quiescent Current	I_P	R_L = ∞, Note 2	–	5	7	mA
Output Power	P_O	THD = 10%	2.5	3.0	–	W
Total Harmonic Distortion	THD	P_O = 500mW	–	0.25	1.0	%
Voltage Gain	G_V		39.0	40.5	42.0	dB
Noise Output Voltage	V_{no}	Note 3	–	180	300	μV
		Note 4	–	60	–	μV
Frequency Response			20 to 20,000			Hz
Ripple Rejection	RR	Note 5	36	50	–	dB
DC Output Offset Voltage	ΔV	R_S = 5kΩ	–	–	200	mV
Input Impedance	$\|Z_i\|$		–	100	–	kΩ
Input Bias Current	I_I		–	100	300	nA

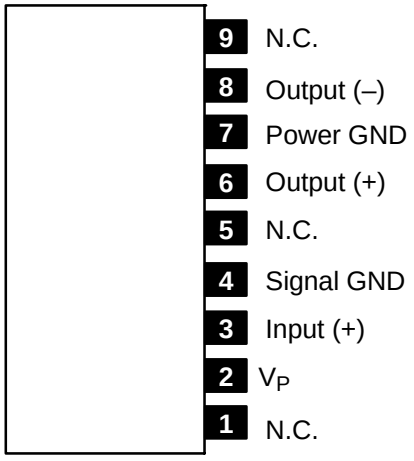
Note 2. With a load connected to the outputs the quiescent current will increase, the maximum value of this increase being equal to the DC output offset voltage divided by R_L.

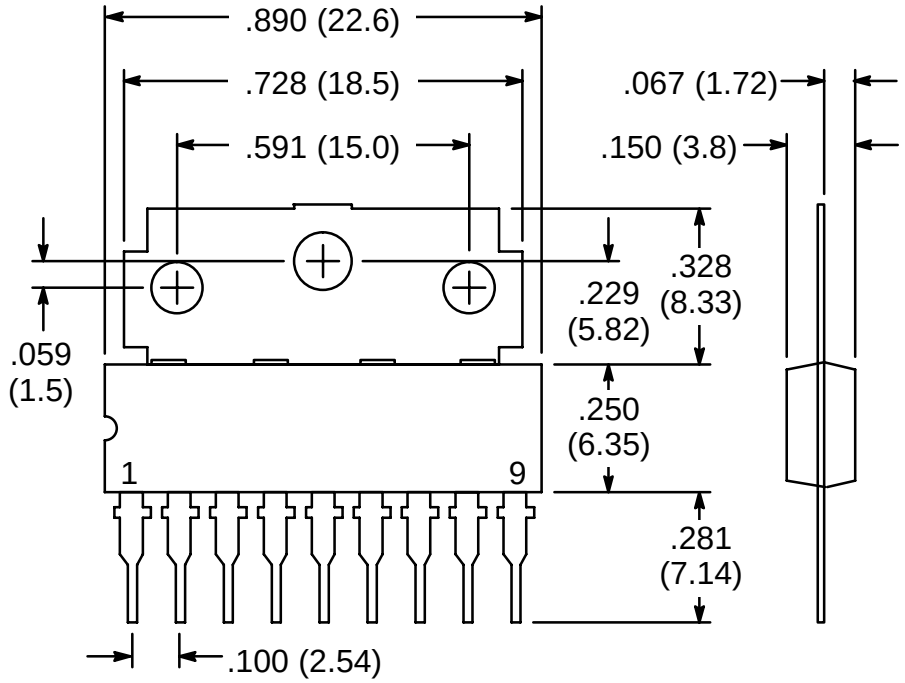
Note 3. The noise output voltage (RMS value) is measured with R_S = 5kΩ unweighted (20Hs to 20kHz).

Note 4. The noise output voltage (RMS value) at f = 500kHz is measured with R_S = 0Ω and BW = 5kHz. With a practical load (R_L = 16Ω, L_L = 200μH) the noise output current is only 50nA.

Note 5. The ripple rejection is measured with R_S = 0Ω and f = 100Hz to 10kHz. The ripple voltage (200mV) is applied to the positive supply rail.

Pin Connection Diagram
(Front View)

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