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NTE7157 Integrated Circuit Low Frequency Power Amplifier

Description:

The NTE7157 is an audio power integrated circuit in a 16-Lead DIP type package with built-in two channels designed for use in a portable radio cassette tape recorder with power ON/OFF switch.

Features:

- High Power:
 - $P_{OUT} = 2.5W/Ch$ Typ ($V_{CC} = 9V, R_L = 4\Omega, f = 1kHz, THD = 10\%$)
 - $P_{OUT} = 3.0W/Ch$ Typ ($V_{CC} = 9V, R_L = 3\Omega, f = 1kHz, THD = 10\%$)
- Voltage Gain:
 - $G_V = 45.0dB$ Typ ($R_f = 120\Omega, f = 1kHz$)
 - $G_V = 56.5dB$ Typ ($R_f = 0\Omega, f = 1kHz$)
- Small Quiescent Current: $I_{CCQ} = 21mA$ Typ ($V_{CC} = 9V, V_{IN} = 0$)
- Ripple Rejection Ratio: $RR = -52dB$ Typ ($V_{CC} = 9V, f_{ripple} = 100Hz, R_g = 600\Omega$)
- Crosstalk: $CT = -50dB$ Typ ($V_{CC} = 9V, f = 1kHz, R_g = 600\Omega$)
- Output Noise Voltage: $V_{no} = 0.3mV_{rms}$ Typ ($V_{CC} = 9V, R_g = 10k\Omega, BW = 20Hz$ to $20kHz$)
- Stand-By Switch
- Soft Clip
- Built-In Thermal Shut Down Protection Circuit
- Operating Supply Voltage Range: $V_{CC(opr)} = 5V$ to $12V$ ($T_A = +25^\circ C$)
- Low Popping Noise at Power ON

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

DC Supply Voltage, V_{CC}	20V
Output Current (Peak/Ch), $I_{O(peak)}$	2.5A
Power Dissipation (Note 1), P_D	4.0W
Operating Temperature Range, T_{opr}	-25° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Note 1. Value for mounting on PC board.

Electrical Characteristics: ($V_{CC} = 9V$, $R_L = 4\Omega$, $R_g = 600\Omega$, $f = 1kHz$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	I_{CCQ}	$V_{in} = 0$	–	21	45	mA
Output Power	P_{out}	THD = 10%	2.0	2.5	–	W
		THD = 10%, $R_L = 3\Omega$	–	3.0	–	W
Total Harmonic Distortion	THD	$P_{out} = 0.4W/Ch$	–	0.2	1.0	%
Voltage Gain	G_V	$R_f = 120\Omega$, $V_{out} = 0.775V_{rms}$ (0dBm)	43	45	47	dB
		$R_f = 0\Omega$, $V_{out} = 0.775V_{rms}$ (0dBm)	–	56.5	–	dB
Input Resistance	R_{IN}		–	30	–	k Ω
Output Noise Voltage	V_{no}	$R_g = 10k\Omega$, BW = 20Hz to 20kHz	–	0.3	1.0	mV $_{rms}$
Ripple Rejection Ratio	RR	$R_g = 600\Omega$, $f_{ripple} = 100Hz$	–	–52	–	dB
Crosstalk	CT	$R_g = 600\Omega$, $V_{out} = 0.775V_{rms}$ (0dBm)	–	–50	–	dB
Input Offset Voltage	V_6, V_7		–	30	60	mV
Stand-By Current	I_{stb}	SW1 → OFF	–	1	–	μA

Pin Connection Diagram

