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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, $T_{opr}$ .....	$-25^\circ$ to $+75^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ 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 $\Omega$
Output Noise Voltage	$V_{no}$	$R_g = 10k\Omega$ , BW = 20Hz to 20kHz	–	0.3	1.0	mV <sub>rms</sub>
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	–	$\mu A$

**Pin Connection Diagram**

