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NTE1517 Integrated Circuit Dual Audio Preamp w/ ALC

Description:

The NTE1517 is an integrated circuit consisting of a dual preamplifier with ALC. It is designed for use in stereo equipment or radio-cassette recorders. The device consists of two independent high-gain, low-distortion amplifiers and ALC on a single chip. By using an external switch, the NTE1517 can be used as a stereo preamplifier with good channel balance.

Features:

- Low Noise: $V_{NI} = 1\mu V_{rms}$ ($R_g = 620\Omega$, $BW = 20Hz$ to $20kHz$)
- High Gain: $G_{VO} = 80dB$ typ.
- Low Distortion: $THD = 0.1\%$ typ. ($G_{VC} = 46dB$, $V_O = 0.3V_{rms}$)
- Low Supply Current: $6mA$ typ.
- Built-in Circuit to Reduce Shock-Noise at Switch-On
- Does not require an Input Coupling Capacitor

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

Supply Voltage, V_{CC}	18V
Circuit Current, I_{CC}	27mA
Power Dissipation, P_D	650mW
Thermal Derating ($T_A \geq 25^\circ C$), K_θ	6.5mW/ $^\circ C$
Operating Temperature Range, T_{opr}	-20° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-40° to $+125^\circ C$

Electrical Characteristics: ($T_A = +25^\circ C$, $f = 1kHz$, $R_g = 620\Omega$, $V_{CC} = 9V$, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Circuit Current	I_{CCO}	Quiescent		3	6	10	mA
Open Loop Voltage Gain	G_{VO}	$V_O = 0.3V_{rms}$	$V_{CO} = 5V$	67	77	–	dB
			$V_{CO} = 9V$	67	80	–	dB
			$V_{CO} = 12V$	67	81	–	dB
Total Harmonic Distortion	THD	$V_O = 0.3V_{rms}$		–	0.1	0.5	%
Closed Loop Voltage Gain	G_{VC}			44	46	48	dB
Input Resistance	R_i			17	27	38	k Ω
Max. Output Voltage	V_{OM}	THD = 3%		1.3	2.0	–	V $_{rms}$
Output Noise Voltage	N_O	BW = 20Hz to 20kHz		–	210	650	μV_{rms}
ALC Distortion	THD _{ALC}	$V_i = -40dBv$		–	0.2	1.2	%
ALC Balance	ΔV_{ALC}	$V_i = -40dBv, -10dBv$		–	0	2.5	dB
ALC Range	ALC	THD = 10%		40	55	–	dB

Pin Connection Diagram

