



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

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: $V_{NI} = 1\mu\text{Vrms}$ ($R_g = 620\Omega$, $\text{BW} = 20\text{Hz to } 20\text{kHz}$)
- High Gain: $G_{VO} = 80\text{dB typ.}$
- Low Distortion: $\text{THD} = 0.1\% \text{ typ.}$ ($G_{VC} = 46\text{dB}$, $V_O = 0.3\text{Vrms}$)
- 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: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

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

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $f = 1\text{kHz}$, $R_g = 620\Omega$, $V_{CC} = 9\text{V}$, 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} | $V_O = 0.3\text{Vrms}$ $V_{CO} = 5\text{V}$ | 67 | 77 | – | dB |
| | | $V_{CO} = 9\text{V}$ | 67 | 80 | – | dB |
| | | $V_{CO} = 12\text{V}$ | 67 | 81 | – | dB |
| Total Harmonic Distortion | THD | $V_O = 0.3\text{Vrms}$ | – | 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 | – | Vrms |
| Output Noise Voltage | N_O | BW = 20Hz to 20kHz | – | 210 | 650 | μVrms |
| ALC Distortion | THD_{ALC} | $V_i = -40\text{dBv}$ | – | 0.2 | 1.2 | % |
| ALC Balance | ΔV_{ALC} | $V_i = -40\text{dBv}$, -10dBv | – | 0 | 2.5 | dB |
| ALC Range | ALC | THD = 10% | 40 | 55 | – | dB |

Pin Connection Diagram

