

NTE1651 Integrated Circuit Dual Preamp for Tape Recorder

Description:

The NTE1651 is a dual preamplifier with ALC and muting in a 16-Lead DIP type package designed for use in the record/playback amplifier of a tape recorder. This device is suitable for stereo set and radio-cassette recorder applications.

Features:

- Built-In ALC Detector Circuit
- Built-In Muting Circuit
- Operating Supply Voltage Range: $V_{CC} = 6V$ to $15V$

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

Supply Voltage, V_{CC}	16V
Power Dissipation, P_D	750mW
Derate Above $25^\circ C$	6mW/ $^\circ C$
Operating Temperature Range, T_{opr}	-25° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Typical DC Voltage (Each Terminal): ($T_A = +25^\circ C$, $V_{CC} = 9V$, Note 1 unless otherwise specified)

Pin1 (Rec. GND), V_1	0V
Pin2 (V_S), V_2	8.2V
Pin3 (Mute Out), V_3	0V
Pin4 (Rec. Out Ch1), V_4	3.3V
Pin5 (Pre. Out & Rec In), V_5	1.3V
Pin6 (Pre. In NF), V_6	1.3V
Pin7 (Pre. In), V_7	0V
Pin8 (ALC), V_8	0.9V
Pin9 (Pre. GND), V_9	0V
Pin10 (Pre. In), V_{10}	0V
Pin11 (Pre. In NF), V_{11}	1.3V
Pin12 (Pre. Out & Rec. In), V_{12}	1.3V
Pin13 (Rec. Out), V_{13}	3.3V
Pin14 (Mute Out), V_{14}	0V
Pin15 (Mute In), V_{15}	2.4V
Pin16 (V_{CC}), V_{16}	9.0V

Note 1. Terminal voltage at no signal.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	I_{CCQ}	$V_{IN} = 0$	–	7	9	mA
Preamplifier						
Open Loop Voltage Gain	G_{VO}	$V_{IN} = -80\text{dBm}$	65	78	–	dB
Max. Output Voltage	V_{OM}	THD = 1%	0.5	0.8	–	V_{rms}
Total Harmonic Distortion	THD	$V_O = 0.2V_{rms}$	–	0.15	0.5	%
Output Noise Voltage	V_{NO}	$R_g = 2.2\text{k}\Omega$, 30Hz to 20kHz	–	0.26	0.6	mV_{rms}
Crosstalk	CT	$R_g = 2.2\text{k}\Omega$	47	60	–	dB
Rec. Amplifier						
Closed Loop Voltage Gain	G_V	$R_L = 10\text{k}\Omega$	12.7	14.7	16.7	dB
Max. Output Voltage	V_{OM}	THD = 1%	2.0	2.5	–	V_{rms}
Total Harmonic Distortion	THD	$V_O = 1.5V_{rms}$	–	0.2	–	%
ALC Range	R_{ALC}	$V_{IN} = -60\text{dB}$, $R_{IN} = 2.2\text{k}\Omega$, Note 2	–	45	–	dB
Total Harmonic Distortion (ALC)	THD (ALC)	$V_{IN} = -20\text{dBm}$, $R_{IN} = 2.2\text{k}\Omega$, $R_L = 10\text{k}\Omega$	–	0.3	1.0	%
ALC Voltage	$V_{O(ALC)}$		0.9	1.1	1.42	V_{rms}
Muting Attenuation	ATT		45	55	–	dB
ALC balance	B_{ALC}	$V_{IN} = -20\text{dBm}$	–	0	2	dB

Note 2. Input voltage range from $V_{IN} = -60\text{dB}$ to output voltage V_{OUT} 3dB up.

Pin Connection Diagram



