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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°C unless otherwise specified)

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

Typical DC Voltage (Each Terminal): (T_A = +25°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

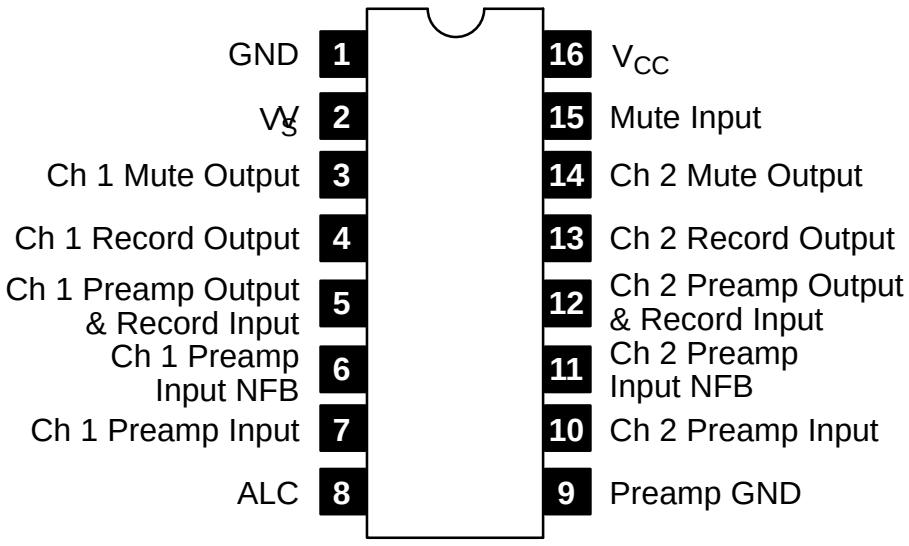
Note 1. Terminal voltage at no signal.

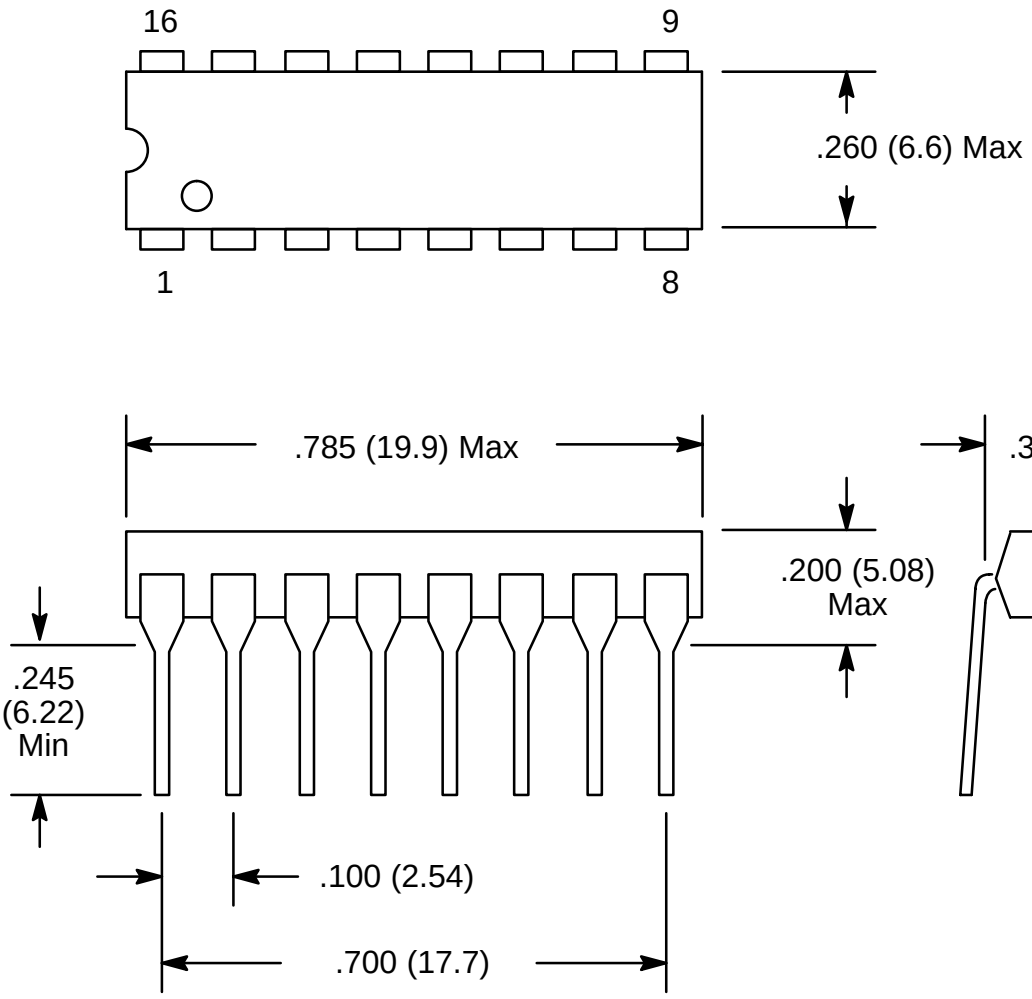
Electrical Characteristics: (T_A = +25°C, V_{CC} = 9V, f = 1kHz unless otherwise specified)

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} = –80dBm	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 = 2.2kΩ, 30Hz to 20kHz	–	0.26	0.6	mV_{rms}
Crosstalk	CT	R_g = 2.2kΩ	47	60	–	dB
Rec. Amplifier						
Closed Loop Voltage Gain	G_V	R_L = 10kΩ	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} = –60dB, R_{IN} = 2.2kΩ, Note 2	–	45	–	dB
Total Harmonic Distortion (ALC)	THD (ALC)	V_{IN} = –20dBm, R_{IN} = 2.2hΩ, R_L = 10kΩ	–	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} = –20dBm	–	0	2	dB

Note 2. Input voltage range from V_{IN} = –60dB to output voltage V_{OUT} 3dB up.

Pin Connection Diagram




16
9
.260 (6.6) Max
1
8
.785 (19.9) Max
.300 (7.62)
.200 (5.08)
Max
.245
(6.22)
Min
.100 (2.54)
.700 (17.7)