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NTE1801
Integrated Circuit
TV dbx Noise Reduction System

Description:

The NTE1801 Multiplexed Sound dbx Noise Reduction Decoder is a single–chip linear IC in a 28–Lead DIP type package suitable for US NTSC System use. The device incorporates two RMS–level sensors and VCA circuits, as well as five operational amplifiers and two buffer circuits.

A complete multiplexed sound system for US NTSC System television sets can be built by interfacing the NTE1801 with the NTE1800 Multiplexed Sound Decoder.

Features:

- Low Distortion Ratio, Low Interference
- Low Power Supply Current
- Single, 8V to 15V Power Supply
- 100mV_{rms} (300Hz, 0dB) Input Voltage (Pin4)
- Easily Interfaced to the NTE1800

Functions:

- On–Chip dbx Noise Reduction Decoder and VCA Circuits
- On–Chip RMS Level Sensor
- L + R Signal Buffer Amplifier

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage, V_{CC}max 15V
Power Dissipation (T_A = +75°C), P_D 580mW
Operating Temperature Range, T_{opr} . . . . . –20° to +75°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

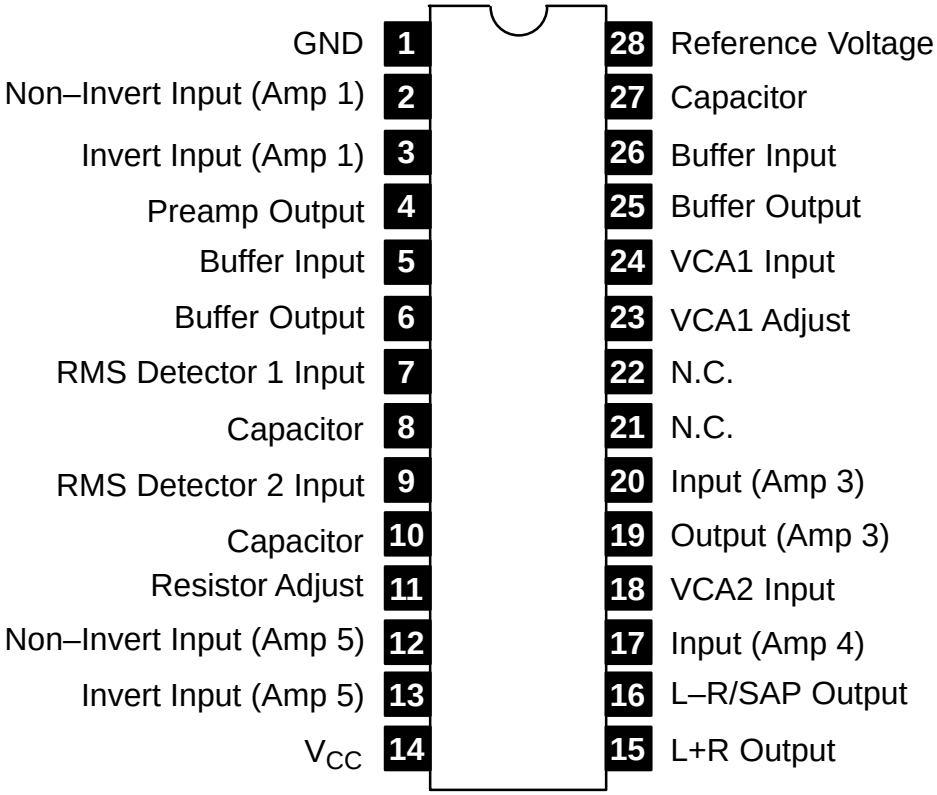
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Power Supply Voltage	V_{CC}		8.0	12.0	13.5	V
Input Signal Voltage	V_{IN}	f = 300Hz, Pin4	–	100	–	mV_{rms}
Amp 1 Gain	AV1		0	10.3	30.0	dB
Amp 2 Gain	AV2		0	–	20	dB

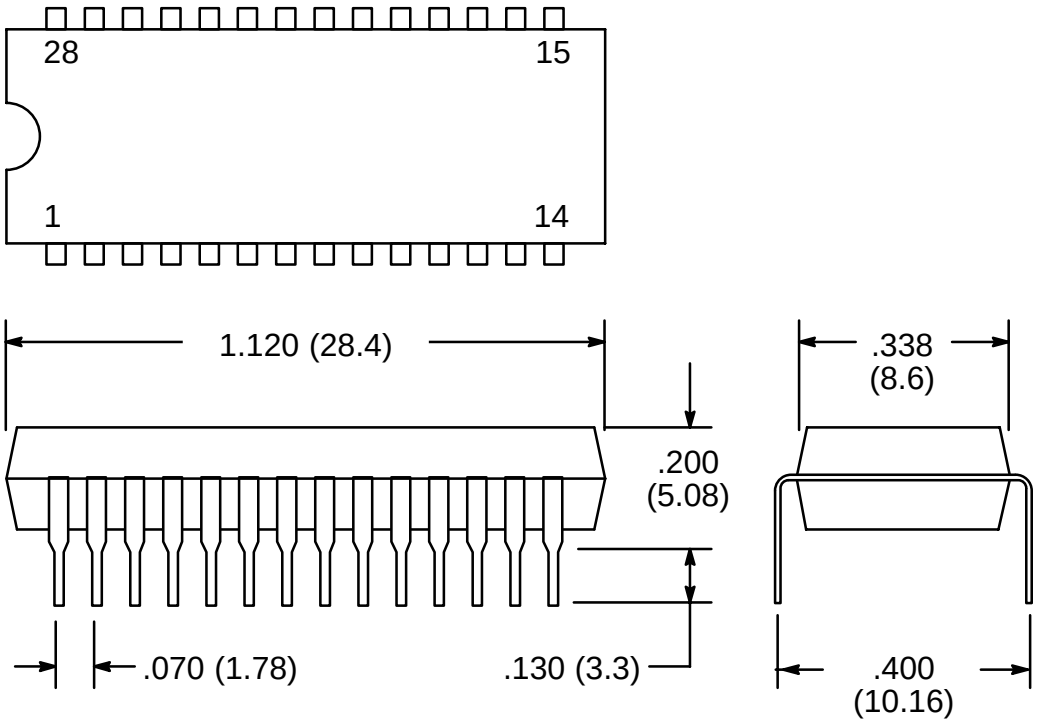
Operating Characteristics: (T_A = +25°C, V_{CC} = 12V, 0dB = 100mV_{rms} unless otherwise specified)

Parameter	Symbol	Test Conditions	Notes	Min	Typ	Max	Unit
Circuit Current	I_{CC}	No Signal	–	8.0	12.5	17.0	mA
Output Voltage	V_{O1}	f = 300Hz, V_{IN} = +10dB	(L–R)	+17	+20	+23	dB
	V_{O2}	f = 300Hz, V_{IN} = 0dB	(L–R)	–3	0	+3	dB
	V_{O3}	f = 300Hz, V_{IN} = –20dB	(L–R)	–43	–40	–37	dB
	V_{O4}	f = 8kHz, V_{IN} = +17dB	(L–R)	+12.1	+15.1	+18.1	dB
	V_{O5}	f = 8kHz, V_{IN} = +7dB	(L–R)	–14.6	–11.6	–8.6	dB
	V_{O6}	f = 8kHz, V_{IN} = –3dB	(L–R)	–43.6	–40.6	–37.6	dB
	V_{O7}	f = 1kHz, V_{IN} = 215mV	(L+R)	–0.5	0	+0.5	dB
Maximum Output Voltage	V_{OM}	f = 1kHz, THD = 1%, (400 to 300kHz using BPF)	(L–R)	4.0	8.6	–	$V_{P–P}$
Total Harmonic Distortion	THD1	V_O = 0dB, f = 1kHz, (400 to 300kHz using BPF)	(L–R)	–	0.1	0.5	%
	THD2	V_O = 215mV, f = 1kHz, (400 to 300kHz using BPF)	(L+R)	–	0.1	0.3	%
Output Noise Voltage	NL1	R_g = 0, 400 to 30kHz using BPF	(L–R)	–	–96	–90	dBV
	NL2		(L+R)	–	–90	–70	dBV
Reference Voltage	V_{ref}	V_{CC} = 12V	–	5.8	6.0	6.2	V

Caution: Static Electricity can impair the performance of this device.

Pin Connection Diagram




28
15
1
14
1.120 (28.4)
.200
(5.08)
.338
(8.6)
.070 (1.78)
.130 (3.3)
.400
(10.16)