

NTE2003 Integrated Circuit Dolby B-Type Noise Reduction Processor

Description:

The NTE2003 is a monolithic integrated circuit in a 16-Lead DIP type package specifically designed to realized the Dolby B-type noise reduction system.

Features:

- Reduced distortion at high frequencies and high signal levels
- Improved transient stability
- Wide Operating Voltage Range
- Low Supply Current

Absolute Maximum Ratings:

Supply Voltage, V_{CC} 24V
 Operating Temperature Range, T_{opr} 0° to +70°C
 Storage Temperature Range, T_{stg} -65° to +150°C
 Lead Temperature (During Soldering, 10sec Max), T_L +300°C

Electrical Characteristics: ($V_{CC} = 12V$, $T_A = +25^\circ C$, NB 0dB refers to 580mV_{rms} Dolby level at Pin3 unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Range		9	–	–	V
Supply Current		12	17	22	mA
Voltage Gain (Pin5–Pin3)	1kHz Pin6 & Pin2 Connected	24	26	28	dB
(Pin3–Pin7)	1kHz (Noise Reduction Out)	–1	0	1	dB
Distortion	1kHz, 0dB; 10kHz, 10dB	–	0.05	0.1	%
Signal Handling	1kHz 0.3% Distortion	10	14	–	dB
Signal-to-Noise Ratio Encode (CCIR Weighted)	Pin6 & Pin2 Connected, RS = 10kΩ	65	70	–	dB
Decode		+75	80	–	dB

Electrical Characteristics (Cont'd): ($V_{CC} = 12V$, $T_A = +25^{\circ}C$, NB 0dB refers to 580mV_{rms} Dolby level at Pin3 unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Encode Characteristics (Input to Pin5)	1.3kHz, -20dB	-17.2	-15.7	-14.2	dB
	2.5kHz, -20dB	-17.4	-15.9	-14.4	dB
	3.0kHz, -30dB	-22.7	-21.2	-19.7	dB
	5.0kHz, -30dB	-23.3	-21.8	-20.3	dB
	10kHz, 0dB	-1.0	0.5	2.0	dB
	10kHz, -40dB	-31.1	-29.6	-28.1	dB
	14kHz, -30dB	-25.4	-23.9	-22.4	dB
Back-to-Back Frequency Response	With Standard Dolby B-Type Processor	-1.5	0	1.5	dB
Input Resistance	Pin5	45	65	85	k Ω
	Pin2	4.3	5.6	6.9	k Ω
Output Resistance	Pin6	1.8	2.4	3.0	k Ω
	Pin3	—	80	120	k Ω
	Pin7	—	80	120	k Ω

Pin Connection Diagram

