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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°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°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	kΩ
	Pin2	4.3	5.6	6.9	kΩ
Output Resistance	Pin6	1.8	2.4	3.0	kΩ
	Pin3	–	80	120	kΩ
	Pin7	–	80	120	kΩ

Pin Connection Diagram