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NTE15014 Integrated Circuit Dual dbxII Noise Reduction System

Description:

The NTE15014 is an integrated circuit in a 22-Lead DIP type package designed for use in dbxII noise reduction circuits for stereo applications. This device can be used for U.S. sound multiplex TV applications and low voltage operation (1.8V) allows the NTE15014 to be used in battery-operated Hi-Fi equipment.

Features:

- Wide Dynamic Range: 110dB
- Low Operating Voltage: $V_{CCmin} = 1.8V$
- Minimum Number of External Components
- Adjustment: Only One
- Low Power Consumption
- Wide Operating Voltage Range: $V_{CC} = 1.8V$ to 14V

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

Supply Voltage, V_{CC} 14.4V
 Supply Current, I_{CC} 5mA
 Power Dissipation ($T_A = +75^\circ C$), P_D 100mW
 Operating Ambient Temperature range, T_{opr} -20° to $+75^\circ C$
 Storage Temperature Range, T_{stg} -55° to $+150^\circ C$

Electrical Characteristics: ($T_A = +25^\circ C$, $V_{CC} = 3V$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input/Output Characteristics ENCODE Mode	V_{OE-1}	$V_{IN} = +20dB, f = 1kHz$	+7.5	+10.0	+12.5	dB
	V_{OE-2}	$V_{IN} = 0dB, f = 1kHz$	-2.0	0	+2.0	dB
	V_{OE-3}	$V_{IN} = -40dB, f = 1kHz$	-23	-20	-17	dB
DECODE Mode	V_{OD-1}	$V_{IN} = +10dB, f = 1kHz$	+17	+20	+23	dB
	V_{OD-2}	$V_{IN} = 0dB, f = 1kHz$	-2.0	0	+2.0	dB
	V_{OD-3}	$V_{IN} = -20dB, f = 1kHz$	-44	-40	-36	dB

Note 1. 0dB = 20mV = -34dBV



Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_{CC} = 3\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Output Voltage ENCODE Mode	V_{OME}	THD = 1%, $f = 1\text{kHz}$	80	150	–	mV
DECODE Mode	V_{OMD}		200	450	–	mV
Total Harmonic Distortion (DECODE Mode)	THD_D	$V_O = +14\text{dB}$, $f = 1\text{kHz}$	–	0.15	0.3	%
Noise Output Voltage ENCODE Mode	V_{NOE}	Input Short, A-weight	–	100	200	μV
DECODE Mode	V_{NOD}		–	3	6	μV
Difference Between Channels ENCODE Mode	CD_E	$V_{IN} = 0\text{dB}$, $f = 1\text{kHz}$	–	0	1.2	dB
DECODE Mode	CD_D		–	0	1.2	
Crosstalk (ENCODE Mode)	CT	Measuring Channel: Short Another Channel: Output 200mV, $f = 1\text{kHz}$	50	60	–	dB
Ripple Rejection Ratio (DECODE Mode)	SVRR	$f = 60\text{Hz}$, $V = 100\text{mV}$, Input Short	40	55	–	dB
Quiescent Current	I_{CC}	$V_{CC} = 3\text{V}$, Input Short	–	1.8	3.2	mA
Input/Output Characteristics dbx OFF Mode	V_{OFF}	$V_{IN} = +20\text{dB}$, $f = 1\text{kHz}$	17	20	23	dB
Total Harmonic Distortion dbx OFF Mode	THD_{OFF}	$V_{IN} = +20\text{dB}$, $f = 1\text{kHz}$	–	0.3	1.0	%
Output Noise Voltage (dbx OFF Mode)	V_{nOFF}	Input Short, A-weight	–	10	20	μV

Note 1. $0\text{dB} = 20\text{mV} = -34\text{dBV}$

Pin Connection Diagram



