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NTE7221

Integrated Circuit

Dual 5W Audio Power Amp

w/Stand-By & Volume Function

Description:

The NTE7221 is an integrated circuit in a 12-Lead SIP type package. This BTL 5W/Ch Power Amplifier has both stand-by and volume functions which make it an excellent choice for low frequency amplifier applications.

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

Supply Voltage (At No Signal), V_{CC} 14.4V
Supply Current, I_{CC} 2.0A
Power Dissipation ($T_A = +70^\circ\text{C}$), P_D 1.92W
Operating Ambient Temperature Range, T_{opr} -25° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg} -55° to $+150^\circ\text{C}$

Electrical Characteristics: ($V_{CC} = 8\text{V}$, $f = 1\text{kHz}$, $R_L = 8\Omega$, $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CQ}	$V_{in} = 0\text{V}$, $V_{O1} = 0\text{V}$	–	45	100	mA
Stand-By Current	I_{STB}	$V_{in} = 0\text{V}$, $V_{O1} = 0\text{V}$	–	1	10	μA
Output Noise Voltage	V_{NO}	$R_g = 10\text{k}\Omega$, $V_{O1} = 0\text{V}$, Note 1	–	0.1	0.4	mV_{rms}
Voltage Gain	G_V	$P_O = 0.5\text{W}$, $V_{O1} = 1.25\text{V}$	31	33	35	dB
Total Harmonic Distortion	THD	$P_O = 0.5\text{W}$, $V_{O1} = 1.25\text{V}$	–	0.1	0.5	%
Maximum Power Output	P_O	THD = 10%, $V_{O1} = 1.25\text{V}$	2.4	3.0	–	W
		$V_{CC} = 11\text{V}$, THD = 10%, $V_{O1} = 1.25\text{V}$	4.0	5.0	–	W
Ripple Rejection Ratio	RR	$R_g = 10\text{k}\Omega$, $V_{O1} = 0\text{V}$, $V_r = 0.5\text{V}_{rms}$, $f = 120\text{Hz}$, Note 1	30	50	–	dB
Output Offset Voltage	V_{off}	$R_g = 10\text{k}\Omega$, $V_{O1} = 0\text{V}$	–250	0	250	mV
Volume Attenuation Ratio	Att	$P_O = 0.5\text{W}$, $V_{O1} = 0\text{V}$, Note 1	70	85	–	dB
Channel Balance	CB	$P_O = 0.5\text{W}$, $V_{O1} = 1.25\text{V}$	–1	0	1	dB
		$P_O = 0.5\text{W}$, $V_{O1} = 0.6\text{V}$	–2	0	2	dB
Middle Voltage Gain	G_{Vm}	$P_O = 0.5\text{W}$, $V_{O1} = 0.6\text{V}$	20.5	23.5	26.5	dB
Channel Crosstalk	CT	$P_O = 0.5\text{W}$, $V_{O1} = 1.25\text{V}$	40	55	–	dB
Stand-By Pin Current	I_{STB2}	$V_{in} = 0\text{V}$, $V_{STB} = 3\text{V}$	–	–	25	μA
Volume Pin Current	I_{VOL}	$V_{in} = 0\text{V}$, $V_{O1} = 0\text{V}$	–12	–	–	μA
Input Impedance	Z_i	$V_{in} = \pm 0.3\text{V}_{DC}$	24	30	36	$\text{k}\Omega$

Note 1. For this measurement, use the BPF = 15Hz to 30kHz (12dB/OCT)

Pin Connection Diagram
(Front View)

12	Ch 2 Output (+)
11	GND (Ch 2 Output)
10	Ch 2 Output (-)
9	Volume
8	Ch 1 Input
7	GND (Input)
6	Ch 1 Input
5	Stand-By
4	Ch 1 Output (-)
3	GND (Ch 1 Output)
2	Ch 1 Output (+)
1	V _{CC}

