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NTE1110 Integrated Circuit Audio Power Amp, 2W

Description:

The NTE1110 is a 2 Watt Audio Power Amp packaged in a 16-Lead DIP plastic package with a heat sink fin.

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

Supply Voltage, V_{CC}	12V
Supply Current, I_{CC}	1.5A
Power Dissipation ($T_A = +45^\circ\text{C}$), P_d	1.1W
Derate Above $+45^\circ\text{C}$	14.1mW/ $^\circ\text{C}$
Power Dissipation ($T_A = +45^\circ\text{C}$, 50 x 50 x 1mm Al), P_d	1.7W
Derate Above $+45^\circ\text{C}$	21.4mW/ $^\circ\text{C}$
Operating Temperature Range, T_{opg}	-10 to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-20 to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 9V$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero-Signal Supply Current	I_{CC}		20	30	60	mA
Pre-Amplifier						
Closed-Loop Voltage Gain Play Mode	$G_{VC} 1$	$f = 1k$	-	35	-	dB
			Recorded Mode		-	20
Open-Loop Voltage Gain	$G_{VO} 1$	$f = 1k$	55	60	-	dB
			$V_{CC} = 4V$	42	50	-
Input Resistance (Play Mode)	$R_i 1$	$f = 1k$	-	60	-	k Ω
Linearity (Record Mode)	$V_O 1$	$f = 1k$	0.3	0.5	-	V_{rms}
			$V_{CC} = 4V$	0.3	-	-
Input Referred Noise Voltage	$N_i 1$	DIN. EQ., $R_g = 1k\Omega$	-	0.8	2.0	μV
AGC Figure of Merit	AGC		-	40	-	dB

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_{CC} = 9\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Tone-Amplifier							
Closed-Loop Voltage Gain Play Mode	$G_{VC\ 2}$	$f = 1\text{k}$	-	40	-	dB	
			Recorded Mode	-	20	-	dB
Open-Loop Voltage Gain	$G_{VO\ 2}$	$f = 1\text{k}$		50	60	-	dB
			$V_{CC} = 4\text{V}$	45	55	-	dB
Input Resistance (Play Mode)	$R_i\ 2$	$f = 1\text{k}$	-	80	-	$\text{k}\Omega$	
Linearity (Play Mode)	$V_O\ 2$	$f = 1\text{k}$, $R_i = 330\Omega$		0.3	0.5	-	V_{rms}
			$V_{CC} = 4\text{V}$	0.3	-	-	$V_{\text{P-P}}$
Input Referred Noise Voltage (Play Mode)	$N_i\ 1$	Tone: Flat, $R_g = 0\Omega$	-	-	3.16	μV	
Power-Amplifier							
Closed-Loop Voltage Gain	$G_{VC\ 3}$	$f = 1\text{k}$	-	25	-	dB	
Open-Loop Voltage Gain	$G_{VO\ 3}$	$f = 1\text{k}$		34	40	-	dB
			$V_{CC} = 4\text{V}$	30	33	-	dB
Power Output (Closed-Loop)	P_O	$f = 1\text{K}$, $\text{THD} \leq 1\%$	1.5	-	-	W	

Pin Connection Diagram



