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NTE1378 Integrated Circuit Audio Power Amplifier, 10W

Description:

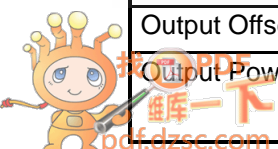
The NTE1378 is a monolithic integrated circuit in a 5-Lead TO220 type package intended for use as an audio class AB amplifier. Typically, it provides 12W output power (THD = 10%) at $V_S = \pm 12V/4\Omega$. This device provides high output current and has very low harmonic and cross-over distortion. Further, the NTE1378 incorporates a short circuit protection system comprising an arrangement for automatically limiting the dissipated power so as to keep the working point of the output transistors within their safe operating area. A thermal shut-down system is also included.

Absolute Maximum Ratings:

Supply Voltage, V_S	$\pm 15V$
Input Voltage, V_I	V_S
Differential Input Voltage, V_{I1}	$\pm 12V$
Output Peak Current (Internally Limited), I_O	3A
Power Dissipation ($T_C = +90^\circ C$), P_{tot}	20W
Operating Junction Temperature Range, T_J	-40° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ C$
Thermal Resistance, Junction-to-Case, R_{thJC}	$3^\circ C/W$
Min. Thermal Shut-Down Junction Temperature ($V_S = \pm 12V$, $P_{tot} = 9W$, $T_A = +25^\circ C$), T_{sd} ..	$+110^\circ C$

Electrical Characteristics: ($V_S = \pm 12V$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_S		± 6	-	± 15	V
Quiescent Drain Current	I_d	$V_S = \pm 15V$	-	40	80	mA
Input Bias Current	I_b	$V_S = \pm 15V$	-	0.2	3.0	μA
Input Offset Voltage	V_{OS}	$V_S = \pm 15V$	-	± 8	-	mV
Input Offset Current	I_{OS}	$V_S = \pm 15V$	-	± 80	-	nA
Output Offset Voltage	V_{OS}	$V_S = \pm 15V$	-	± 10	± 100	mV
Output Power	P_O	THD = 10%, $f = 1kHz$, $R_L = 4\Omega$	-	12	-	W
		THD = 10%, $f = 1kHz$, $R_L = 8\Omega$	6	8	-	W



Electrical Characteristics (Cont'd): ($V_S = \pm 12V$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Frequency Response (-3dB)	B	$P_O = 8W$, $R_L = 4\Omega$	10 to 140,000			Hz
Input Sensitivity	V_i	$f = 1kHz$, $P_O = 10W$, $R_L = 4\Omega$	-	200	-	mV
		$f = 1kHz$, $P_O = 6W$, $R_L = 8\Omega$	-	220	-	mV
Voltage Gain	G_V	$f = 1kHz$, Open Loop	-	75	-	dB
		$f = 1kHz$, Closed Loop	29.5	30.0	30.5	dB
Total Harmonic Distortion	THD	$P_O = 0.1$ to $8W$, $R_L = 4\Omega$, $f = 1kHz$	-	0.2	-	%
		$P_O = 0.1$ to $4W$, $R_L = 8\Omega$, $f = 1kHz$	-	0.1	1.0	%
Input Noise Voltage	e_N	$B = 22Hz$ to $22kHz$, $R_L = 4\Omega$	-	3	10	μV
Input Noise Current	I_N	$B = 22Hz$ to $22kHz$, $R_L = 4\Omega$	-	80	200	pA
Input Resistance (Pin1)	R_I	$f = 1kHz$	0.5	5.0	-	M Ω
Supply Voltage Rejection	SVR	$R_L = 4\Omega$, $R_g = 22k\Omega$, $f_{ripple} = 100Hz$	40	50	-	dB
Drain Current	I_d	$P_O = 12W$, $R_L = 4\Omega$	-	850	-	mA
		$P_O = 8W$, $R_L = 8\Omega$	-	500	-	mA

Pin Connection Diagram
(Front View)

