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NTE1116
Integrated Circuit
Audio Power Amplifier, 5W

Description:

The NTE1116 is a monolithic integrated circuit designed for use as a low frequency class B amplifier. The external cooling tabs enable 2.5 watts of output power to be achieved without the use of an external heat sink and 5 watts of output power using a small area of the P.C. board copper as a heat sink.

Absolute Maximum Ratings:

Supply Voltage, V_S 30V
Output Peak Current (Non–Repetitive), I_O 2A
Output Current (Repetitive), I_O 1.5A
Power Dissipation, P_{tot}
T_A = +70°C 1W
T_{tab} = +100°C 5W
Operating Junction Temperature Range, T_J . . . . . –40° to +150°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Tab, $R_{thJ–TAB}$ . . . . . 12°C/W
Thermal Resistance, Junction–to–Ambient (Note 1), R_{thJA} . . . . . 70°C/W

Note 1. Obtained with tabs soldered to printed circuit with minimized copper area.

Elecrtrical Characteristics: (T_A = +25°C, V_S = 24V, R_L = 16Ω unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Output Voltage (Pin12)	V_O		11	12	13	V
Quiescent Drain Current	I_d		–	9	20	mA
Input Bias Current (Pin8)	I_b		–	1	5	μA
Output Power	P_O	THD = 10%, f = 1kHz	4.4	5.0	–	W
Input Saturation Voltage	$V_{i(rms)}$		220	–	–	mV
Input Sensitivity	V_i	P_O = 5W, f = 1kHz	–	80	–	mV
Input Resistance (Pin8)	R_i	f = 1kHz	–	5	–	MΩ
Frequency Response (–3dB)	B	C3 = 330pF	40 to 20,000			Hz
Total Harmonic Distortion	THD	P_O = 50mW to 2.5W, f = 1kHz	–	0.5	–	%
Voltage Gain (Open Loop)	G_V	f = 1kHz	–	80	–	dB
Voltage Gain (Closed Loop)	G_V	f = 1kHz	39	42	45	dB

Elecrtrical Characteristics (Cont'd): (T_A = +25°C, V_S = 24V, R_L = 16Ω unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Noise Voltage	e_N	B = 22Hz to 22kHz	–	5	–	µV
Input Noise Current	i_N		–	0.2	–	nA
Efficiency	η	P_O = 5W, f = 1kHz	–	75	–	%
Supply Voltage Rejection	SVR	f_{ripple} = 100Hz, C5 = 25µF	–	35	–	dB
		f_{ripple} = 100Hz, C5 = 100µF	–	38	–	dB
Drain Current	I_d	P_O = 5W	–	280	–	mA

Pin Connection Diagram