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NTE1516
Integrated Circuit
Audio Power Amp, 1.8 Watt

Description:
The NTE1516 is a silicon monolithic integrated circuit in an 8–Lead DIP plastic package with a tab designed for audio power amplifiers used in portable radio receivers or portable cassette tape recorders using a 9V power supply.

Features:
- High Output Power: P_O = 2.4W (Typ) at V_{CC} = 9V, R_L = 4Ω, T.H.D. = 10%
- Wide Operating Voltage Range: V_{CC} = 4.5 to 9 to 11V
- High Ripple Rejection Ratio: R.R.R. = 55dB (Typ)
- Soft Cripping Waveform.
- Contains a Muting Circuit so that No Shock Noise is Heard at Power Supply Switch ON/OFF
- Contains a Terminal (Pin2) to Reject Interference Noise in a Strong Electric Field.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)
Supply Voltage (No Signal), V_{CC1} 16V
Supply Voltage (Operating), V_{CC2} 11V
Allowable Power Dissipation (Note 1), P_d 2.4W
Operating Temperature Range, T_{opt} . . . . . –20° to 70°C
Storage Temperature Range, T_{stg} . . . . . –40° to 150°C

Note 1. 50 x 50 x 0.035mm copper heat sink on P.C.B.

Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		4.5	9.0	11.0	V
Load Impedance	R_L		–	4	–	Ω

Electrical Characteristics: (T_A = +25°C, V_{CC} = 9V, R_L = 4Ω, f = 1kH_Z, Note 1 unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CC}	No Signal		8	15	25	mA
Open Loop Voltage Gain	A_{VO}	P_O = 0.25W		55	65	–	dB
Voltage Gain (Closed Loop)	A_V	R_f = 100Ω		41	45	48	dB
		R_f = 360Ω		–	34	–	dB
Output Power	P_O	THD = 10%, R_f = 100Ω	V_{CC} = 11V, R_L = 4Ω	–	3.6	–	W
			V_{CC} = 11V, R_L = 8Ω	–	2.2	–	W
			V_{CC} = 9V, R_L = 4Ω	1.8	2.4	–	W
			V_{CC} = 9V, R_L = 8Ω	–	1.3	–	W
			V_{CC} = 6V, R_L = 4Ω	–	1.0	–	W
			V_{CC} = 6V, R_L = 8Ω	–	0.54	–	W
Input Sensitivity	$V_{i(rms)}$	P_O = 2.4W, R_L = 4Ω	R_f = 100Ω (A_V = 45dB)	–	19.5	–	mV
			R_f = 360Ω (A_V = 34dB)	–	47.3	–	mV
Input Sensitivity	$V_{i(rms)}$	P_O = 50mW, R_L = 4Ω	R_f = 100Ω (A_V = 45dB)	–	2.5	–	mV
			R_f = 360Ω (A_V = 34dB)	–	8.9	–	mV
Total Harmonic Distortion	THD	P_O = 0.25W		–	0.4	1.5	%
Output Noise Voltage	NL	R_G = 0		–	0.2	0.8	mV_{rms}
Supply Voltage Rejection Ratio	SVR	R_G = 0, f_{ripple} = 100H_Z, V_{ripple} = 0.3V_{rms}		40	55	–	dB
Input Impedance	R_i			10	20	–	kΩ

Note 1. 50 x 50 x 0.035mm copper heat sink on P.C.B.

Note 2. In case that only a Typ. value is specified, this specification is for helping to design.

Pin Connection Diagram