



ELECTRONICS, INC.

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NTE7103 Integrated Circuit 50W to 80W Power Amplifier, Driver

Description:

The NTE7103 is an integrated monolithic circuit in a 14-Lead SIP type package designed for use in 50W to 80W class HiFi audio power amplifier applications. This device consists of an input differential amplifier, a predriver circuit, a driver circuit, and an over current protection circuit.

Features:

- Low Distortion
0.002% Typ. ($V_{CC} = \pm 46V$, $f = 1kHz$, $A_v = 30dB$, $P_O = 50W$, $R_L = 8\Omega$ w/Power Transistor)
0.006% Typ. ($V_{CC} = \pm 46V$, $f = 20kHz$, $A_v = 30dB$, $P_O = 50W$, $R_L = 8\Omega$ w/Power Transistor)
- Wide Frequency Band
- Wide Power Band

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

Supply Voltage (Quiescent), V_{CC1}	$\pm 65V$
Supply Voltage (Operational), V_{CC2}	$\pm 50V$
Circuit Current, $I_{CC}(\text{peak})$	250mA
Allowable Package Dissipation (Note 1), P_D	7.5W
Operating Temperature Range, T_{opr}	-20° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ C$

Note 1. 100 x 100 x 2mm Al heat sink.

Recommended Operating Conditions:

Supply Voltage (Operational), V_{CC}	± 20 to $\pm 46V$
Input Bias Resistance, R_{IN}	1 to 50 to 100k Ω
Power Transistor h_{FE} ($P_O = 80W$, $R_L = 8\Omega$, $T_J < +125^\circ C$), h_{FE}	≤ 50
Closed Loop Voltage Gain, A_v	26 to 30dB
Junction Temperature Range, T_J	-20° to $+125^\circ C$

Electrical Characteristics: ($V_{CC} = \pm 46V$, $A_v = 30dB$, $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Offset Voltage	V_{offset}	$V_{IN} = 0$	-	± 5	± 50	mV
Quiescent Circuit Current	I_{CC}	$V_{IN} = 0$	-	20	40	mA
Maximum Output Voltage	V_{OM}	THD = 0.05%, $f = 20Hz$ to $20kHz$	25	28	-	V
Open Loop Voltage Gain	A_{vo}	$V_O = 1.5V$, $f = 1kHz$	80	95	-	dB
Output Noise Voltage	V_n	$R_G = 10k\Omega$	-	0.07	0.14	mV
Rolloff Frequency	f_H	$V_O = 1.5V$, $-3dB$	-	900	-	kHz
Supply Voltage Rejection Ratio	SVR	$R_G = 2.2k\Omega$, $f_{ripple} = 100Hz$, $V_{ripple} = 1V_{rms}$	55	70	-	dB

Pin Connection Diagram
(Front View)

