

## 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. ( $V_{CC} = \pm 46V$ ,  $f = 1kHz$ ,  $A_v = 30dB$ ,  $P_O = 50W$ ,  $R_L = 8\Omega$  <sup>w/Power Transistor</sup>)  
 0.006% Typ. ( $V_{CC} = \pm 46V$ ,  $f = 20kHz$ ,  $A_v = 30dB$ ,  $P_O = 50W$ ,  $R_L = 8\Omega$  <sup>w/Power Transistor</sup>)
- 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, $T_{opr}$ .....	$-20^\circ$ to $+75^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+150^\circ C$

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

**Recommended Operating Conditions:**

Supply Voltage (Operational), $V_{CC}$ .....	$\pm 20$ to $\pm 46V$
Input Bias Resistance, $R_{IN}$ .....	1 to 50 to 100k $\Omega$
Power Transistor $h_{FE}$ ( $P_O = 80W$ , $R_L = 8\Omega$ , $T_J < +125^\circ C$ ), $h_{FE}$ .....	$\leq 50$
Closed Loop Voltage Gain, $A_v$ .....	26 to 30dB
Junction Temperature Range, $T_J$ .....	$-20^\circ$ 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	$V_{offset}$	$V_{IN} = 0$	–	$\pm 5$	$\pm 50$	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)

