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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)

