



## STK4042 II

### AF Power Amplifier (Split Power Supply) (80 W min, THD = 0.4%)

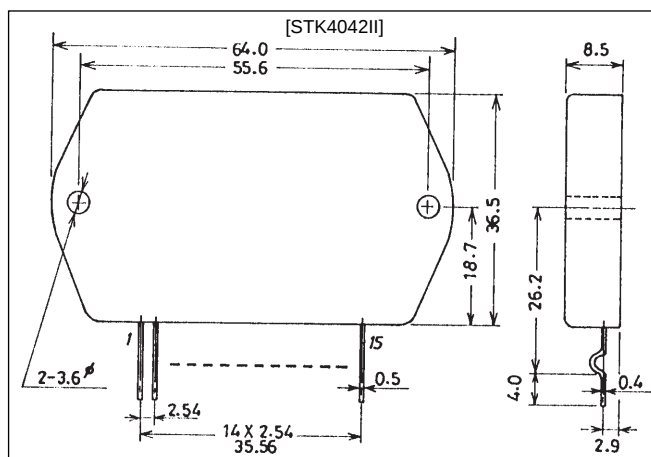
#### Features

- Miniature package allows audio sets to be made slimmer.
- Pin-compatible amplifiers with outputs of 20 to 200 W are available.
- Facilitates thermal design of slim stereo sets by distributing the heat dissipating ICs in the set.
- The adoption of constant current circuits reduces pop noise when the power supply is turned on or off.
- Supports the design of supplementary electronic circuits (thermal shutdown, load short protection, and pop noise muting at power on and off).

#### Package Dimensions

unit: mm

4075



#### Specifications

##### Maximum Ratings at Ta = 25°C

| Parameter                       | Symbol         | Condition                                                         | Rating      | Unit |
|---------------------------------|----------------|-------------------------------------------------------------------|-------------|------|
| Maximum supply voltage          | $V_{CC}$ max   |                                                                   | $\pm 65$    | V    |
| Thermal resistance              | $\theta_{j-c}$ |                                                                   | 1.2         | °C/W |
| Junction temperature            | $T_j$          |                                                                   | 150         | °C   |
| Operating case temperature      | $T_c$          |                                                                   | 125         | °C   |
| Storage temperature             | $T_{stg}$      |                                                                   | -30 to +125 | °C   |
| Available time for load shorted | $t_S^*$        | $V_{CC} = \pm 45$ V, $R_L = 8 \Omega$ , $f = 50$ Hz, $P_O = 80$ W | 2           | s    |

Note: Use a constant voltage power supply as the test power supply unless otherwise specified.

\* Use the transformer power supply shown on the next page when measuring the available time for load shorted and the output noise voltage.

##### Recommended Operating Conditions at Ta = 25°C

| Parameter                  | Symbol   | Condition | Rating   | Unit     |
|----------------------------|----------|-----------|----------|----------|
| Recommended supply voltage | $V_{CC}$ |           | $\pm 45$ | V        |
| Load resistance            | $R_L$    |           | 8        | $\Omega$ |

##### Operating Characteristics at Ta = 25°C, $V_{CC} = \pm 45$ V, $R_L = 8 \Omega$ (noninductive load), $R_g = 600 \Omega$ , $V_G = 40$ dB

| Parameter                 | Symbol        | Condition                                  | Rating |            |     | Unit       |
|---------------------------|---------------|--------------------------------------------|--------|------------|-----|------------|
|                           |               |                                            | min    | typ        | max |            |
| Quiescent current         | $I_{CCO}$     | $V_{CC} = \pm 54$ V                        | 15     |            | 120 | mA         |
| Output power              | $P_O$         | THD = 0.4%, $f = 20$ Hz to 20 kHz          | 80     |            |     | W          |
| Total harmonic distortion | THD           | $P_O = 1.0$ W, $f = 1$ kHz                 |        |            | 0.3 | %          |
| Frequency response        | $f_L, f_H$    | $P_O = 1.0$ W, $+0_{-3}$ dB                |        | 20 to 50 k |     | Hz         |
| Input resistance          | $r_i$         | $P_O = 1.0$ W, $f = 1$ kHz                 |        | 55         |     | k $\Omega$ |
| Output noise voltage      | $V_{NO}^{**}$ | $V_{CC} = \pm 54$ V, $R_g = 10$ k $\Omega$ |        |            | 1.2 | mVrms      |
| Neutral voltage           | $V_N$         | $V_{CC} = \pm 54$ V                        | -70    | 0          | +70 | mV         |

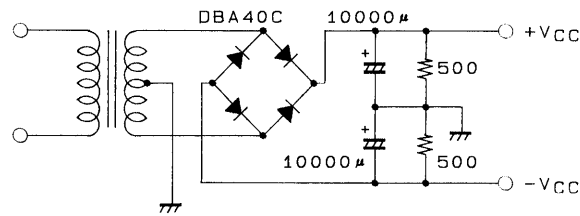
Note: Use a constant voltage power supply as the test power supply unless otherwise specified.

\*\* The output noise voltage is the peak value measured with an averaging rms scale volt meter. The noise voltage waveform should not include pulse noise.

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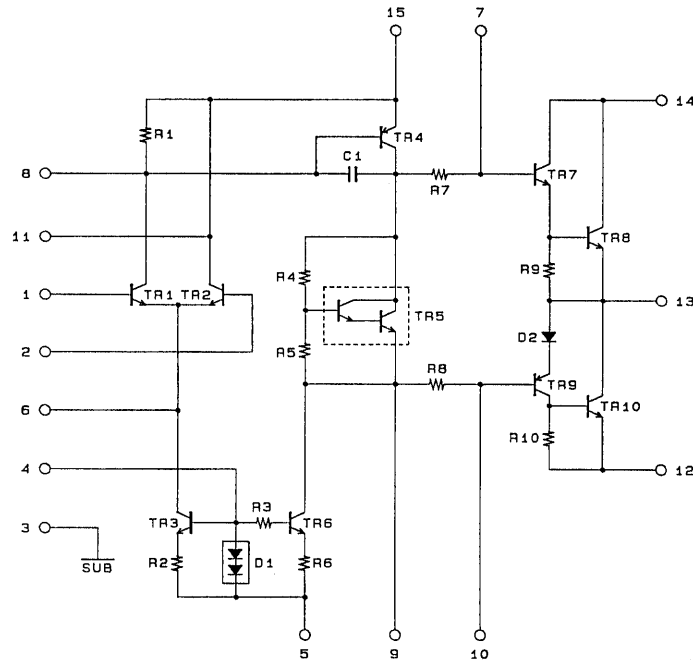
N3096HA (OT)/82793YO 5-2300 No. 4479-1/3



Unit (resistance: Ω, capacitance: F)

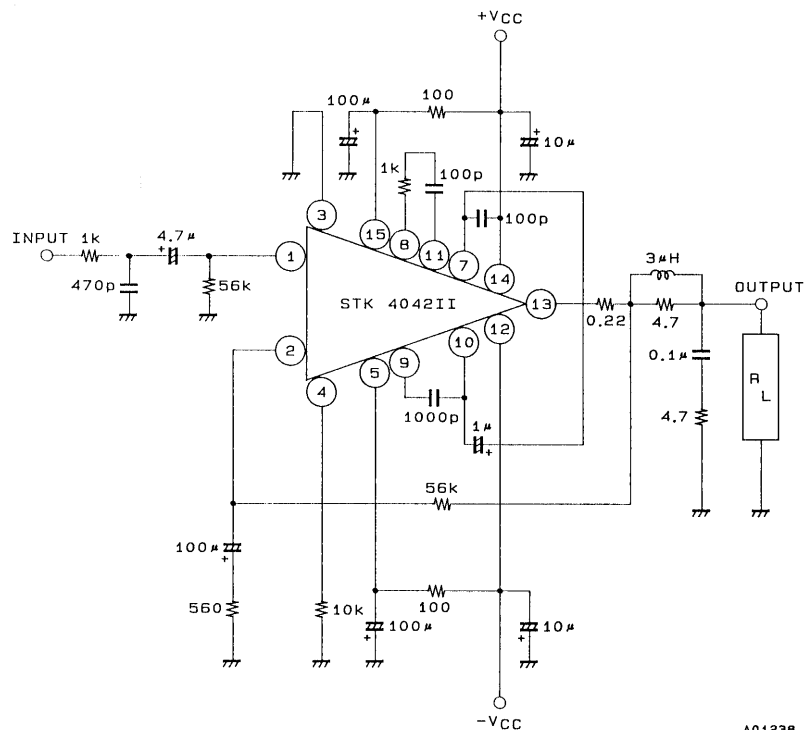
**Specified Transformer Power Supply  
(MG-200 equivalent)**

## Equivalent Circuit



A0123B

## Sample Application Circuit: 80 W (minimum) AF Power Amplifier



A0123B

Unit (resistance: Ω, capacitance: F)

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