

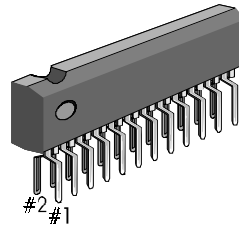
## INTRODUCTION

The KA22234 is a monolithic integrated circuit developed for the stereo 5 band graphic equalizer amplifier. It consists of an operational amplifier, and four resonant circuits with an active filter. It is suitable for radio cassette-tape recorders, car stereos or music centers.

## FEATURES

- Tone control with independent adjustment of each band through external capacitor
- Gain control through external variable resistor (Gain =  $\pm 11$ dB)
- Excellent cross talk characteristics (CT = 70dB Typ, at  $R_G = 0$ )
- Wide operating supply voltage range:  $V_{CC} = 3.5V \sim 14V$

24-SZIP-275



## ORDERING INFORMATION

| Device  | Package     | Operating Temperature                          |
|---------|-------------|------------------------------------------------|
| KA22234 | 24-SZIP-275 | $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$ |

## BLOCK DIAGRAM

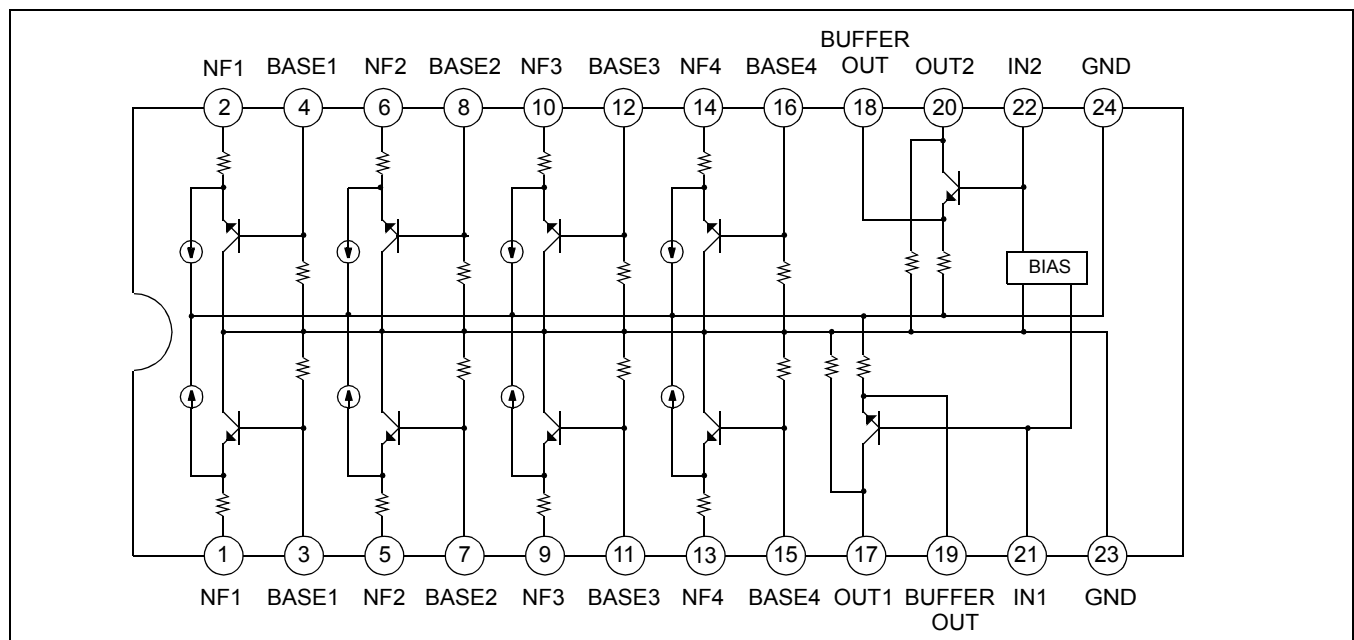


Figure 1.

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

| Characteristic        | Symbol           | Value       | Unit |
|-----------------------|------------------|-------------|------|
| Supply Voltage        | V <sub>CC</sub>  | 15          | V    |
| Power Dissipation     | P <sub>D</sub>   | 500         | mW   |
| Operating Temperature | T <sub>OPR</sub> | -20 ~ + 70  | °C   |
| Storage Temperature   | T <sub>STG</sub> | -40 ~ + 125 | °C   |

**ELECTRICAL CHARACTERISTICS**(Ta = 25°C, V<sub>CC</sub> = 8V, R<sub>L</sub> = 20K, Flat Mode, unless otherwise specified)

| Characteristic            |       | Symbol                 | Test Conditions                             |                        | Min.  | Typ.  | Max. | Unit |
|---------------------------|-------|------------------------|---------------------------------------------|------------------------|-------|-------|------|------|
|                           |       |                        | f(Hz)                                       | Conditions             |       |       |      |      |
| Quiescent Circuit Current |       | I <sub>CCQ</sub>       |                                             | V <sub>I</sub> = 0     | 4.0   | 7.0   | 10.0 | mA   |
| Output Voltage            |       | V <sub>O</sub>         | 1 K                                         | THD = 1%               | 500   | 600   | –    | mV   |
| Total Harmonic Distortion |       | THD                    | 1 K                                         | –                      | –     | 0.1   | 0.3  | %    |
| Channel Balance           |       | CB                     | 1 K                                         | –                      | -1.0  | 0     | 1.0  | dB   |
| Cross Talk                |       | CT                     | 1 K                                         | –                      | 50    | 70    | –    | dB   |
| Output Noise Voltage      |       | V <sub>NO</sub>        | Flat, RG = 2.2K<br>BW(-3 dB) = 10Hz ~ 30kHz |                        | –     | 10    | 20   | μV   |
| Voltage Gain              | Flat  | G <sub>V</sub> (Flat)  | 1 K                                         | V <sub>I</sub> = 100mV | -2.0  | -1.5  | 1.0  | dB   |
|                           | Boost | G <sub>V</sub> (Boost) | 100                                         | V <sub>I</sub> = 100mV | 9.0   | 11.0  | 14.0 | dB   |
|                           |       |                        | 300                                         |                        |       |       |      |      |
|                           |       |                        | 1 K                                         |                        |       |       |      |      |
|                           |       |                        | 3 K                                         |                        |       |       |      |      |
|                           |       |                        | 10 K                                        |                        |       |       |      |      |
|                           | Cut   | G <sub>V</sub> (Cut)   | 100                                         | V <sub>I</sub> = 100mV | -14.0 | -11.0 | -9.0 | dB   |
|                           |       |                        | 300                                         |                        |       |       |      |      |
|                           |       |                        | 1 K                                         |                        |       |       |      |      |
|                           |       |                        | 3 K                                         |                        |       |       |      |      |
|                           |       |                        | 10 K                                        |                        |       |       |      |      |

## TEST CIRCUIT

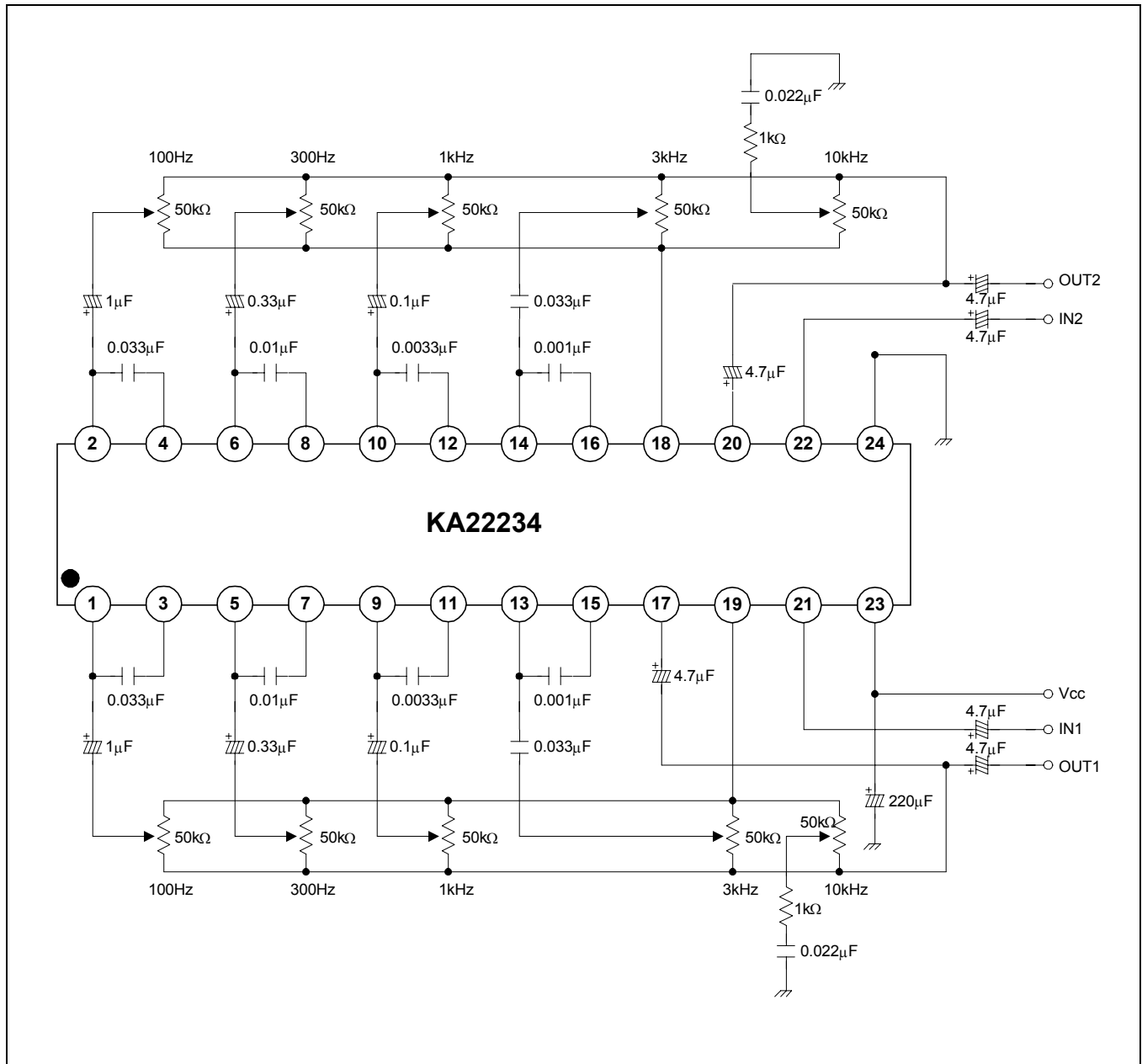
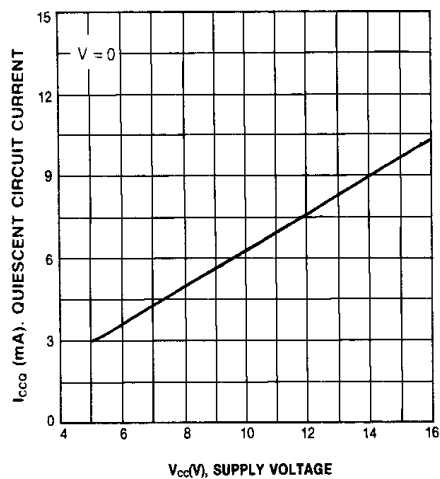
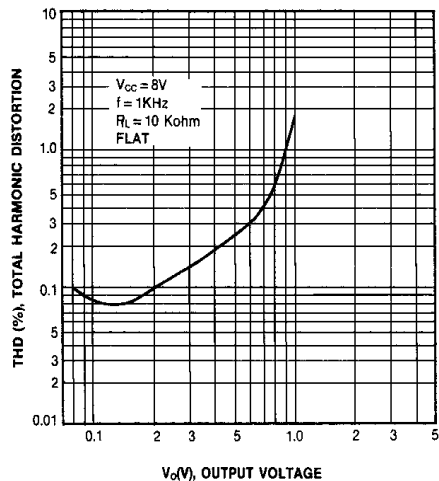


Figure 2.

QUIESCENT CIRCUIT CURRENT-SUPPLY VOLTAGE



TOTAL HARMONIC DISTORTION-OUTPUT VOLTAGE



FREQUENCY RESPONSE

