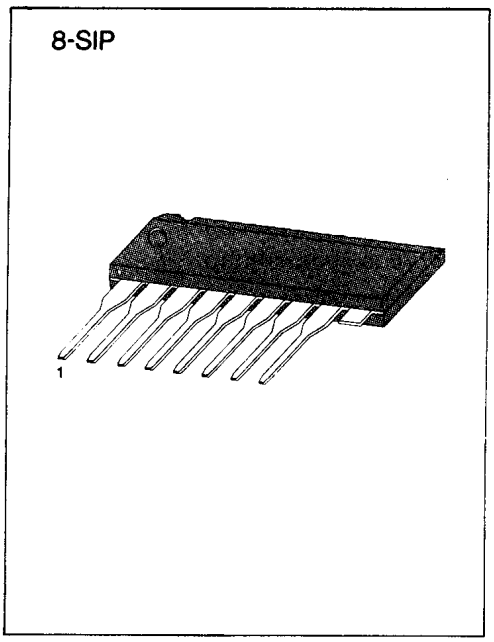
# DUAL LOW NOISE EQUALIZER AMPLIFIER

The KA1222 is a monolithic integrated circuit consisting of a 2-channel pre-amplifier in a 8-pin plastic single in line package. Minimum operating voltage is 2.5 volts, thus it is suitable for low voltage application.




## FEATURES

- **Wide operating supply voltage: $V_{CC}$ = 2.5V ~ 6V**
- **Low noise ($V_{NI}$ = 1.0μV: Typ).**
- **High channel separation.**
- **Good ripple rejection ratio.**
- **Minimum number of external parts required.**

## ORDERING INFORMATION

| Device | Package | Operating Temperature |
|---|---|---|
| KA1222 | 8-SIP | – 20 ~ + 70°C |

## BLOCK DIAGRAM

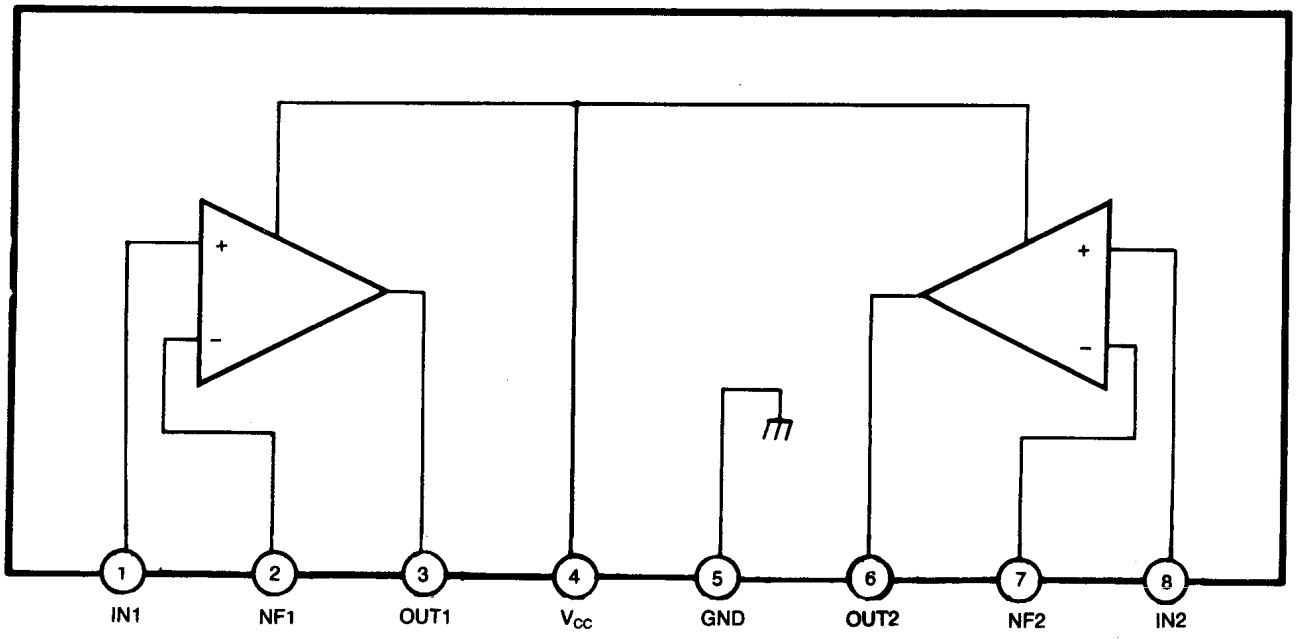



Fig. 1

## ABSOLUTE MAXIMUM RATINGS ($T_a$=25°C)

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 7.5 | V |
| Power Dissipation | $P_D$ | 200 | mW |
| Operating Temperature | $T_{OPR}$ | −20 ~ +70 | °C |
| Storage Temperature | $T_{STG}$ | −40 ~ +125 | °C |

## ELECTRICAL CHARACTERISTICS

(Ta = 25°C, $V_{CC}$ = 4V, $R_L$ = 10KΩ, $R_G$ = 600Ω, f = 1KHz, NAB, unless otherwise specified)

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Quiescent Circuit Current | $I_{CCQ}$ | $V_I$ = 0 | | 2.0 | 6.0 | mA |
| Open Loop Voltage Gain | $G_{VO}$ | | 65 | 80 | | dB |
| Closed Loop Voltage Gain | $G_{VC}$ | $V_O$ = 0.2V | 33 | 35 | 37 | dB |
| Output Voltage | $V_O$ | THD = 1% | 0.4 | 0.7 | | V |
| Total Harmonic Distortion | THD | $V_O$ = 0.2V | | 0.1 | 0.3 | % |
| Input Resistance | $R_I$ | | | 150 | | KΩ |
| Equivalent Input Noise Voltage | $V_{NI}$ | $R_G$ = 2.2KΩ<br>BW (−3dB) = 15Hz ~ 30KHz | | 1.0 | 2.0 | μV |
| Cross Talk | CT | $R_G$ = 2.2KΩ | 50 | 65 | | dB |

## TEST CIRCUIT

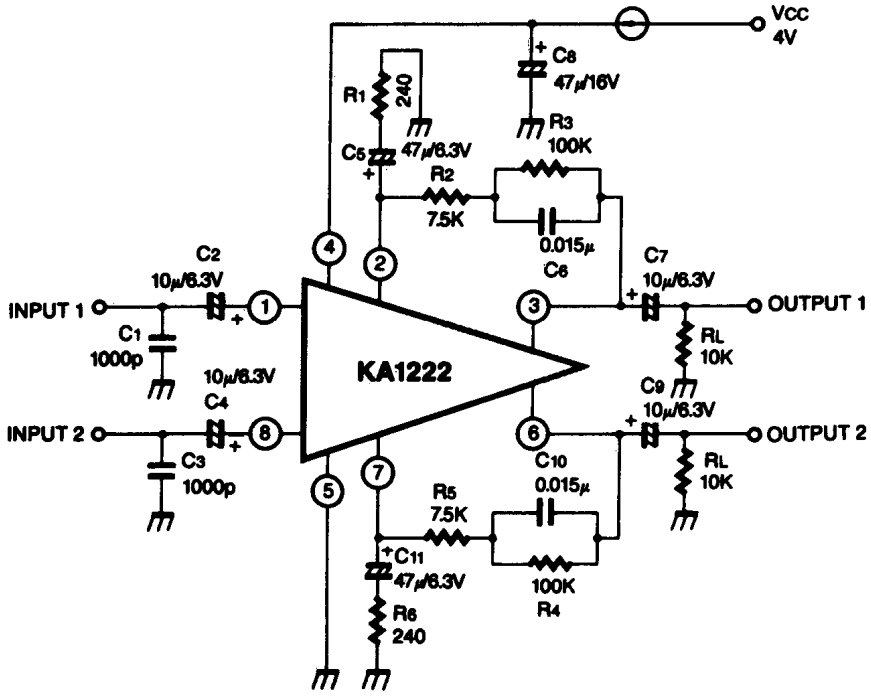
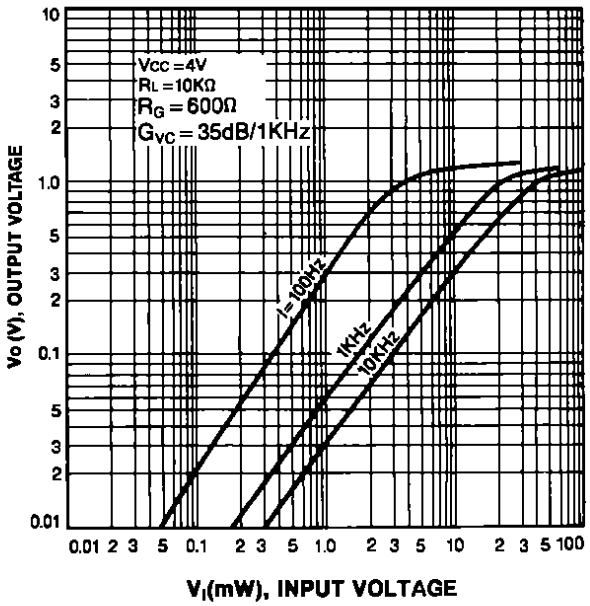
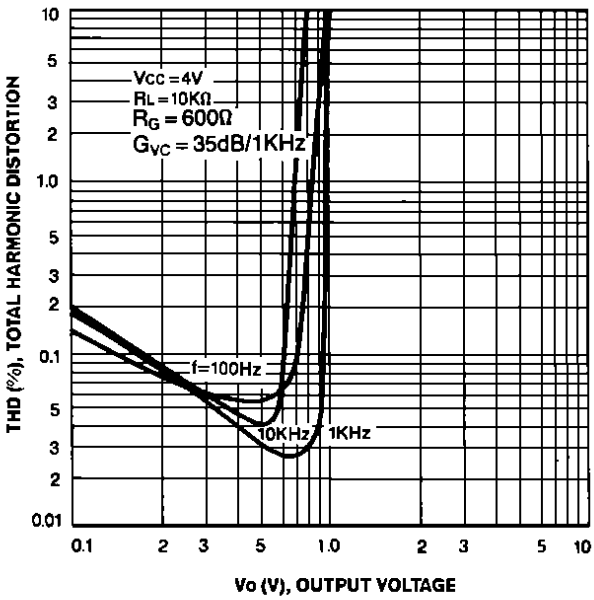



Fig. 2

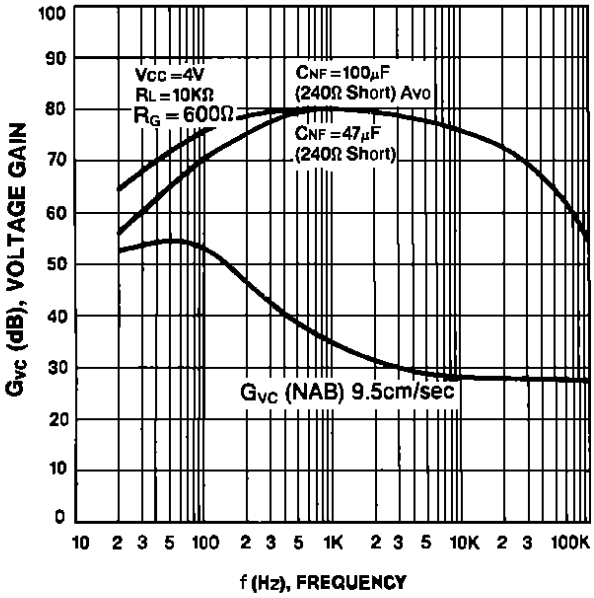
**OUTPUT VOLTAGE-INPUT VOLTAGE**



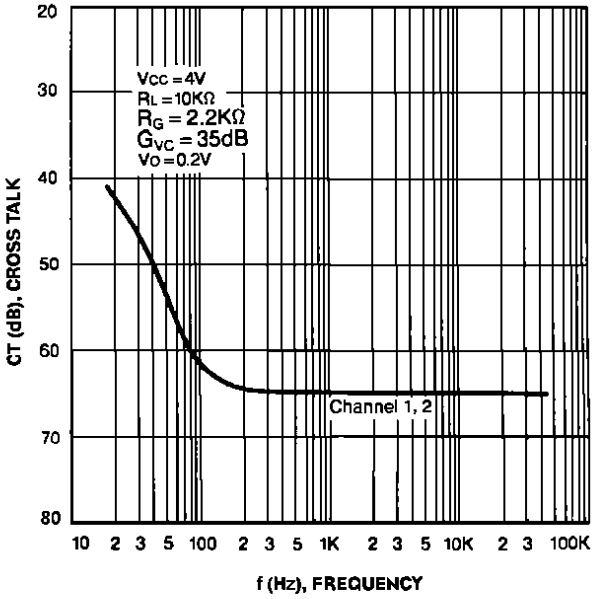

**TOTAL HARMONIC DISTORTION-OUTPUT VOLTAGE**



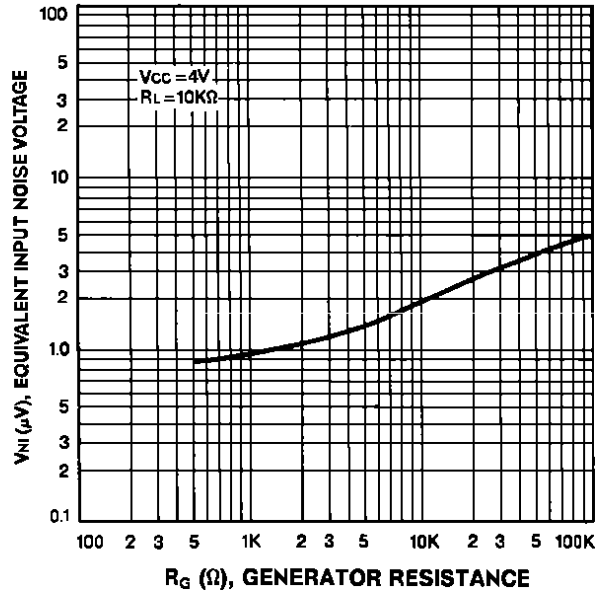

**VOLTAGE GAIN-FREQUENCY**



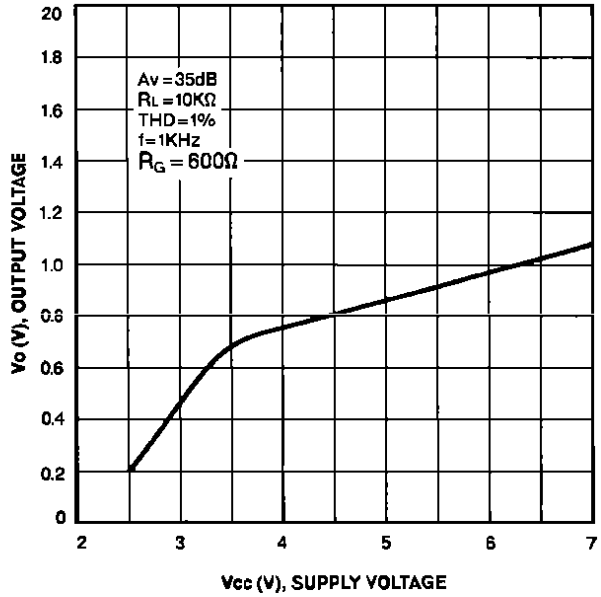

**CROSS TALK-FREQUENCY**

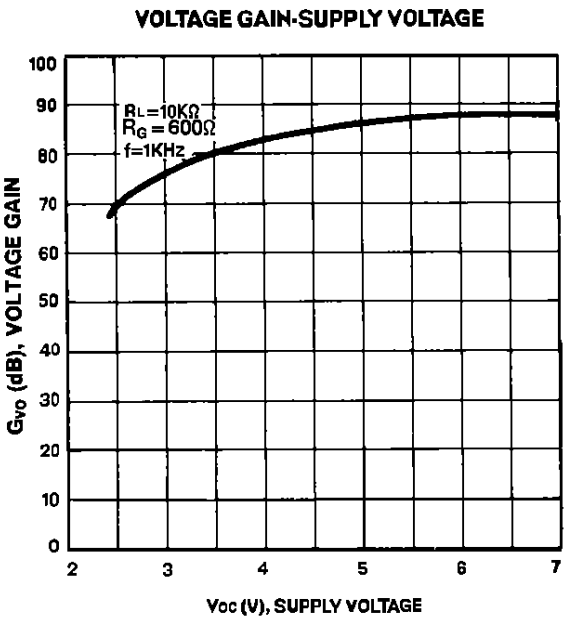


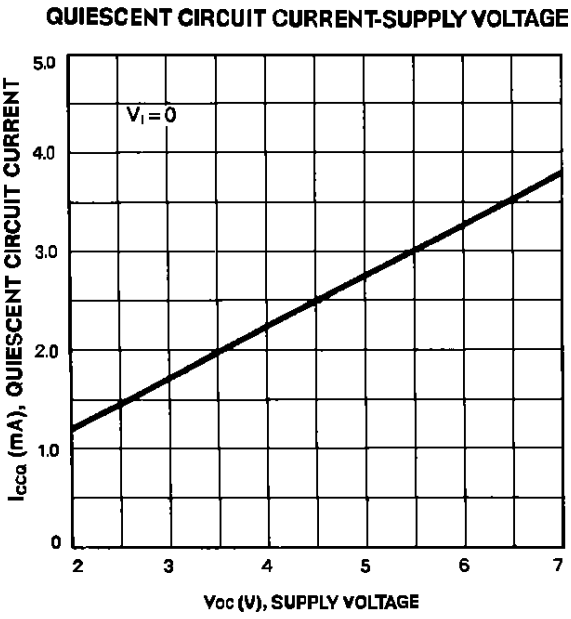

**EQUIVALENT INPUT NOISE VOLTAGE GENERATOR RESISTANCE**




**OUTPUT VOLTAGE-SUPPLY VOLTAGE**






# APPLICATION CIRCUIT

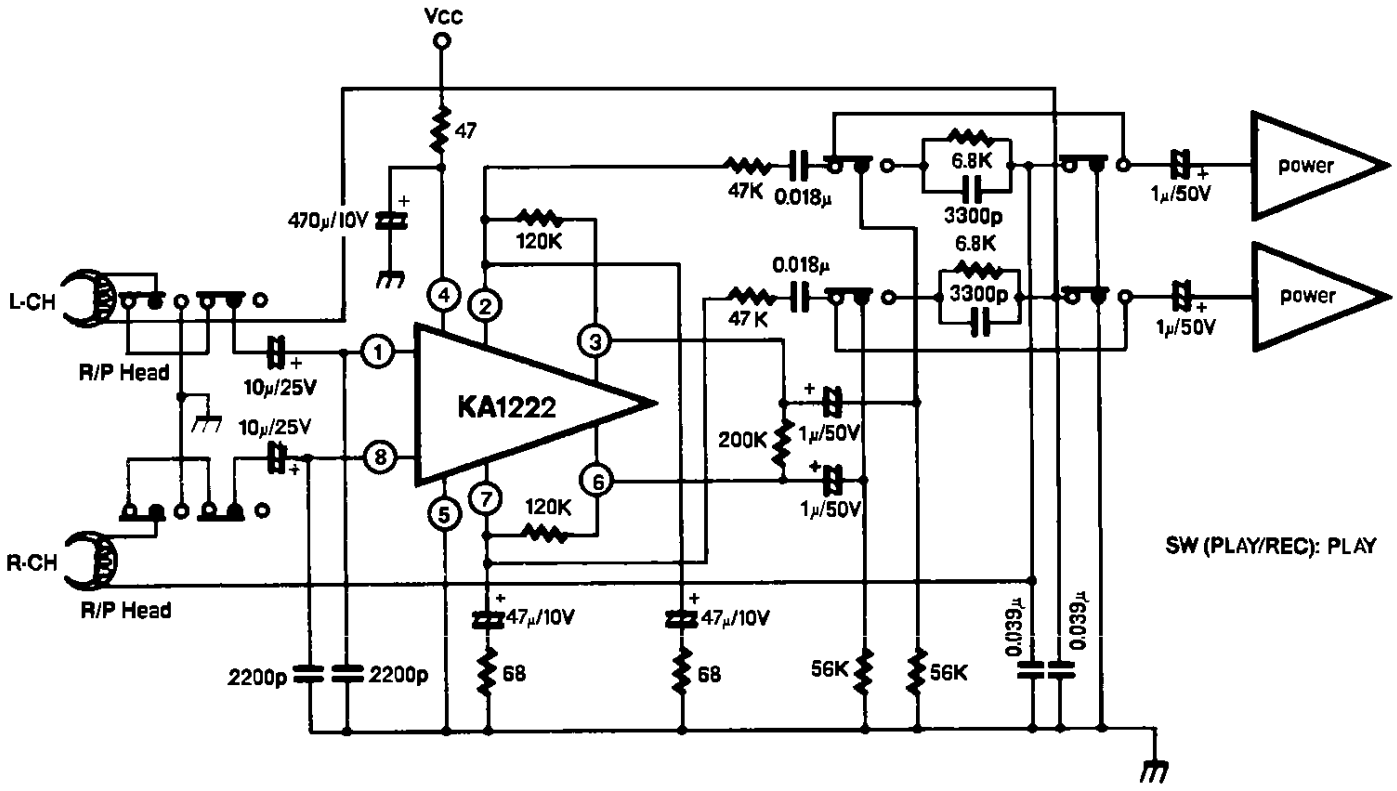



Fig. 3