

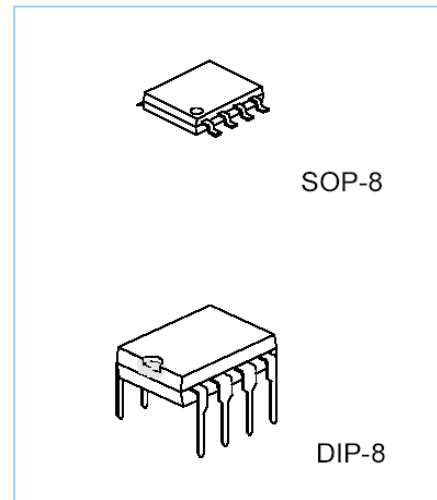
DUAL LOW VOLTAGE POWER AMPLIFIER

DESCRIPTION

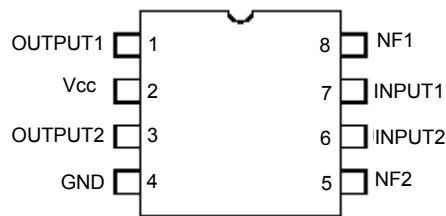
The AV2822 is a monolithic integrated circuit in (8-Pin) dip plastic dual in line package, intended for use as dual audio power amplifier in portable cassette players and radios.

FEATURES

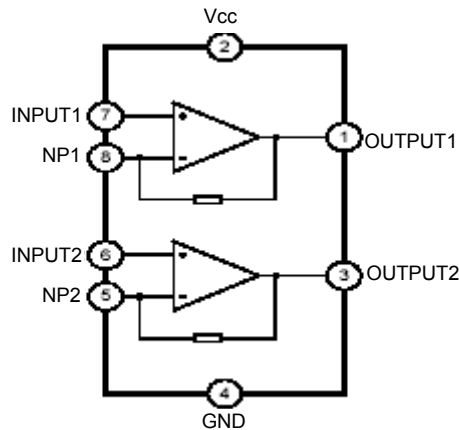
- Supply voltage down to 3V.
- Low crossover distortion.
- Low quiescent circuit current.
- Bridge or stereo configuration.



PIN CONFIGURATIONS



BLOCK DIAGRAM



ORDERING INFORMATION

| PIN | SYMBOL | PIN | SYMBOL |
|-----|--------|-----|--------|
| 1   | 1OUT   | 5   | 2IN-   |
| 2   | VCC    | 6   | 2IN+   |
| 3   | 2OUT   | 7   | 1IN+   |
| 4   | GND    | 8   | 1IN-   |

**ABSOLUTE MAXIMUM RATINGS**( $T_{amb}=25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER             | SYMBOL     | MIN | MAX | UNIT |   |
|-----------------------|------------|-----|-----|------|---|
| Supply                | VCC        | -   | 15  | V    |   |
| Output current        | Io         | -   | 1   | A    |   |
| Power Dissipation     | TA=50°C    | PD  | -   | 1    | W |
|                       | Tcase=50°C |     | -   | 1.4  |   |
| Operating Temperature | Tamb       | -20 | 70  | °C   |   |
| Storage Temperature   | Tstg       | -40 | 150 | °C   |   |

**ELECTRICAL CHARACTERISTICS (stereo configuration)**

(Vcc=6V, Tamb=25°C, unless otherwise specified).

| PARAMETER                 | SYMBOL | TEST CONDITIONS                 | MIN     | TYP      | MAX | UNIT |   |    |
|---------------------------|--------|---------------------------------|---------|----------|-----|------|---|----|
| Supply Voltage            | Vcc    |                                 | 1.8     | -        | 15  | V    |   |    |
| Quiescent Output Voltage  | Vo     |                                 | -       | 2.7      | -   | V    |   |    |
|                           |        | Vcc=3V                          | -       | 1.2      | -   |      |   |    |
| Quiescent Drain Current   | Icc    |                                 | -       | 6        | 9   | mA   |   |    |
| Input Bias Current        | Iba    |                                 | -       | 100      | -   | nA   |   |    |
| Output Power              | Po     | F=1kHz,<br>THD=10<br>%          | RL=32 Ω | Vcc=9V   | -   | 300  | - | mW |
|                           |        |                                 |         | Vcc=6V   | 90  | 120  | - |    |
|                           |        |                                 |         | Vcc=4.5V | -   | 60   | - |    |
|                           |        |                                 |         | Vcc=3V   | 15  | 20   | - |    |
|                           |        |                                 |         | Vcc=2V   | -   | 5    | - |    |
|                           |        |                                 | RL=16 Ω | Vcc=6V   | 170 | 220  | - |    |
|                           |        |                                 |         | Vcc=9V   | -   | 1000 | - |    |
|                           |        |                                 |         | Vcc=6V   | 300 | 380  | - |    |
|                           |        |                                 | RL=4 Ω  | Vcc=6V   | 450 | 650  | - |    |
|                           |        |                                 |         | Vcc=4.5V | -   | 320  | - |    |
| Vcc=3V                    | -      | 110                             | -       |          |     |      |   |    |
| Total Harmonic Distortion | THD    | Po=0.5W, f=1kHz, RL=8 Ω, Vcc=9V | -       | 0.3      | -   | %    |   |    |
| Closed Loop Voltage Gain  | Avf    | F=1kHz                          | -       | 40       | -   | dB   |   |    |
| Channel Balance           | ΔAv    |                                 | -       | -        | ±1  | dB   |   |    |
| Input Resistance          | Ri     | F=1kHz                          | 100     | -        | -   | K Ω  |   |    |
| Total Input Noise         | Vni    | Rs=10 K Ω                       | -       | 2        | -   | uV   |   |    |
|                           |        | Rs=10 K Ω, B=22Hz-22kHz         | -       | 3        | -   |      |   |    |
| Ripple Rejection          | Srip   | F=100Hz, C1=C2=100uF            | 24      | 30       | -   | dB   |   |    |
| Channel Separation        | CSR    | F=1kHz,                         | -       | 50       | -   | dB   |   |    |

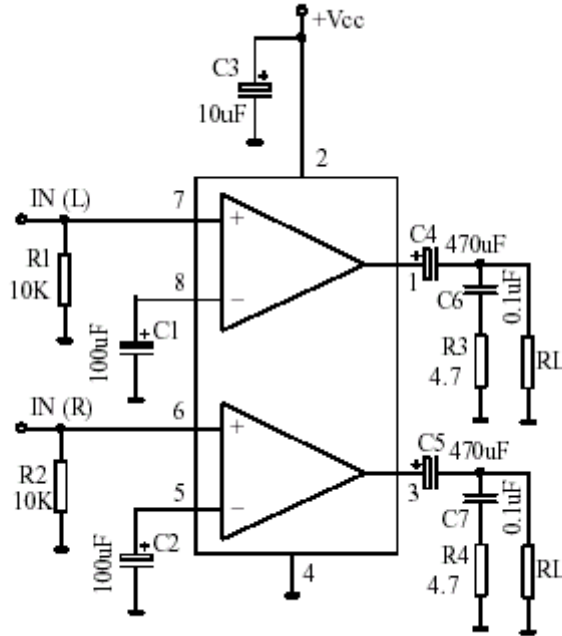
**ELECTRICAL CHARACTERISTICS (BTL configuration)**(V<sub>cc</sub>=6V, T<sub>amb</sub>=25°C, unless otherwise specified).

| PARAMETER               | SYMBOL          | TEST CONDITIONS        |                      | MIN                   | TYP | MAX  | UNIT |    |
|-------------------------|-----------------|------------------------|----------------------|-----------------------|-----|------|------|----|
| Supply Voltage          | V <sub>cc</sub> |                        |                      | 1.8                   | -   | 15   | V    |    |
| Quiescent Drain Current | I <sub>cc</sub> | R <sub>L</sub> =∞      |                      | -                     | 6   | 9    | mA   |    |
| Output Offset Voltage   | V <sub>os</sub> | R <sub>L</sub> =8 Ω    |                      | -50                   | -   | 50   | mV   |    |
| Input Bias Current      | I <sub>ba</sub> |                        |                      | -                     | 100 | -    | nA   |    |
| Output Power            | P <sub>o</sub>  | F=1kHz,<br>THD=10<br>% | R <sub>L</sub> =32 Ω | V <sub>cc</sub> =9V   | -   | 1000 | -    | mW |
|                         |                 |                        |                      | V <sub>cc</sub> =6V   | 320 | 400  | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =4.5V | -   | 200  | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =3V   | 50  | 65   | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =2V   | -   | 8    | -    |    |
|                         |                 |                        | R <sub>L</sub> =16 Ω | V <sub>cc</sub> =9V   | -   | 2000 | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =3V   | -   | 120  | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =6V   | 900 | 1350 | -    |    |
|                         |                 |                        | R <sub>L</sub> =8 Ω  | V <sub>cc</sub> =4.5V | -   | 700  | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =3V   | -   | 220  | -    |    |
|                         |                 |                        |                      | V <sub>cc</sub> =4.5V | -   | 1000 | -    |    |
|                         |                 |                        | R <sub>L</sub> =4 Ω  | V <sub>cc</sub> =3V   | 200 | 350  | -    |    |
| V <sub>cc</sub> =2V     | -               | 80                     |                      | -                     |     |      |      |    |

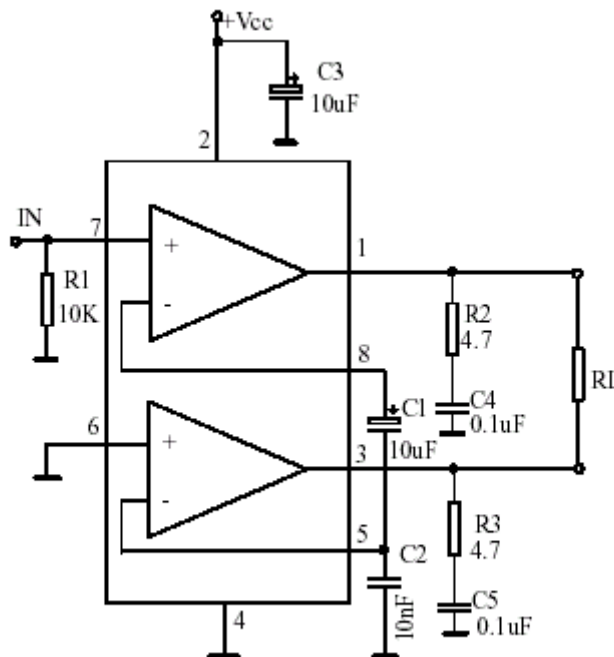
|                           |                  |   |  |     |     |   |     |
|---------------------------|------------------|---|--|-----|-----|---|-----|
| Total Harmonic Distortion | THD              | P <sub>o</sub> =0.5W, f=1kHz, R <sub>L</sub> =8 Ω |  | -   | 0.2 | - | %   |
| Closed Loop Voltage Gain  | A <sub>vf</sub>  | F=1kHz  |  | -   | 40  | - | dB  |
| Input Resistance          | R <sub>i</sub>   | F=1kHz  |  | 100 | -   | - | K Ω |
| Total Input Noise         | V <sub>ni</sub>  | R <sub>s</sub> =10 K Ω                            |  | -   | 2.5 | - | uV  |
|                           |                  | R <sub>s</sub> =10 K Ω, B=22Hz-22kHz              |  | -   | 3   | - |     |
| Ripple Rejection          | S <sub>rip</sub> | F=100Hz, C <sub>1</sub> =C <sub>2</sub> =100uF    |  | -   | 40  | - | dB  |
| Bandwidth                 | BW <sub>p</sub>  | P <sub>o</sub> =1W, R <sub>L</sub> =8 Ω           |  | -   | 120 | - | kHz |

## TEST CIRCUIT

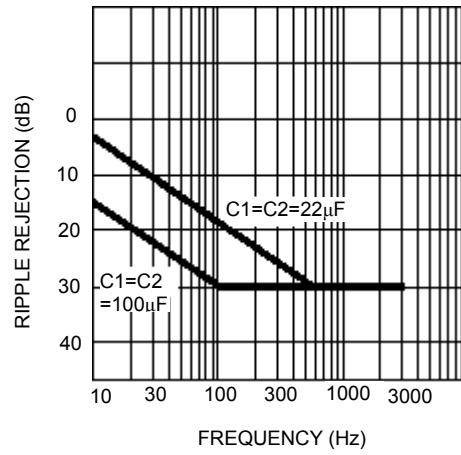
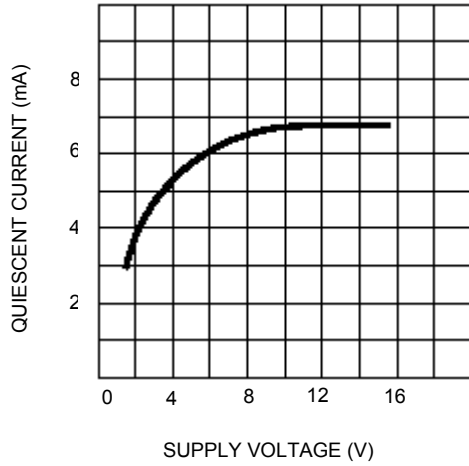
### 1. STEREO



### 2. BRIDGE



### TYPICAL PERFORMANCE CHARACTERISTICS



### SCHEMATIC DIAGRAM

