

# UTC2822D/E

# LINEAR INTEGRATED CIRCUIT

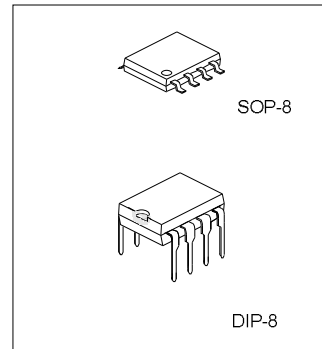
## DUAL LOW VOLTAGE POWER AMPLIFIER

### DESCRIPTION

The UTC2822D/E is a monolithic integrated audio amplifier in a 8-pin DIP and SOP package. It is designed for portable cassette players and radios.

### FEATURES

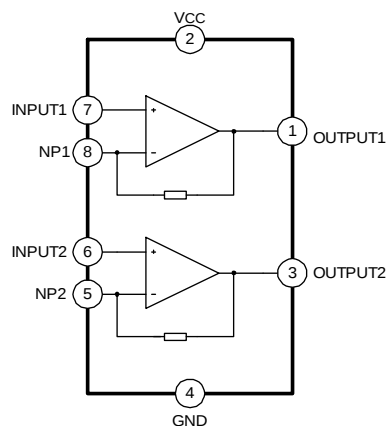
- \*Wide operating supply voltage:  $V_{CC}=1.8V-12V$
- \*Low crossover distortion
- \*Low quiescent circuit current
- \*bridge/stereo configuration



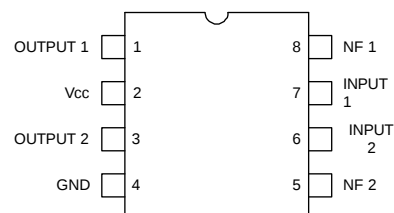
### ORDERING INFORMATION

| Device   | Package        |
|----------|----------------|
| UTC2822D | DIP-8-300-2.54 |
| UTC2822E | SOP-8-225-1.27 |

### BLOCK DIAGRAM



### PIN CONFIGURATION



### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ )

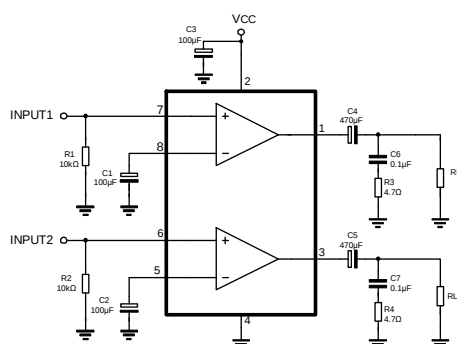
| Characteristic        | Symbol        | Value                                                         | Unit        |
|-----------------------|---------------|---------------------------------------------------------------|-------------|
| Supply Voltage        | $V_{CC}$      | 15                                                            | V           |
| Output Peak Current   | $I_{O(peak)}$ | 1                                                             | A           |
| Power Dissipation     | $P_D$         | at $T_{amb}=50^{\circ}C$ 1.0<br>at $T_{case}=50^{\circ}C$ 1.4 | W           |
| Operating Temperature | $T_{opr}$     | $-20 \sim +70$                                                | $^{\circ}C$ |
| Storage Temperature   | $T_{stg}$     | $-40 \sim +150$                                               | $^{\circ}C$ |

## ELECTRICAL CHARACTERISTICS

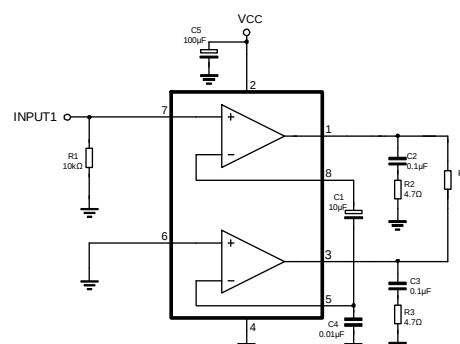
(Ta=25°C, Vcc=6V, f=1kHz, unless otherwise specified)

| Characteristic            | Symbol          | Test Conditions                | Min | Typ  | Max | Units |
|---------------------------|-----------------|--------------------------------|-----|------|-----|-------|
| Operating Supply Voltage  | Vcc             |                                | 1.8 |      | 12  | V     |
| Quiescent Circuit Current | Icc             | Vi=0                           |     | 6    | 9   | mA    |
| Quiescent Output Voltage  | Vo              | Stereo                         |     | 2.7  |     | V     |
| Input Bias Current        | I <sub>BA</sub> | Stereo                         |     | 100  |     | nA    |
| Closed Loop Voltage Gain  | Av              | Stereo                         |     | 40   |     | dB    |
| Closed Loop Voltage Gain  | Av              | Bridge                         |     | 40   |     | dB    |
| Channel Balance           | CB              | Stereo                         | -1  | 0    | 1   | dB    |
| Output Power              | Po              | Stereo, Vcc=6V, RL=4Ω, THD=10% | 0.4 | 0.65 |     | W     |
|                           |                 | Stereo, Vcc=9V, RL=4Ω, THD=10% |     | 1.48 |     |       |
| Output Power              | Po              | Stereo, Vcc=3V, RL=4Ω, THD=10% |     | 0.11 |     | W     |
| Output Power              | Po              | Bridge, Vcc=6V, RL=8Ω, THD=10% | 0.9 | 1.25 |     | W     |
| Output Power              | Po              | Bridge, Vcc=3V, RL=4Ω, THD=10% |     | 0.35 |     | W     |
| Output Power              | Po              | Bridge, Vcc=9V, RL=8Ω, THD=10% |     | 3    |     | W     |
| Total Harmonic Distortion | THD             | Stereo, RL=8Ω, Po=0.2W         |     | 0.3  |     | %     |
| Total Harmonic Distortion | THD             | Bridge, RL=8Ω, Po=0.5W         |     | 0.3  |     | %     |
| Ripple Rejection          | RR              | Stereo, f=100Hz, C3=100μF      | 24  | 30   |     | dB    |
| Output Noise Voltage      | V <sub>NO</sub> | Stereo, BW(-3dB)=20Hz~20kHz    |     | 0.5  | 2.0 | mV    |
| Cross Talk                | CT              | Stereo, f=1kHz                 |     | 50   |     | dB    |
| Input Resistance          | Ri              |                                | 100 |      |     | kΩ    |

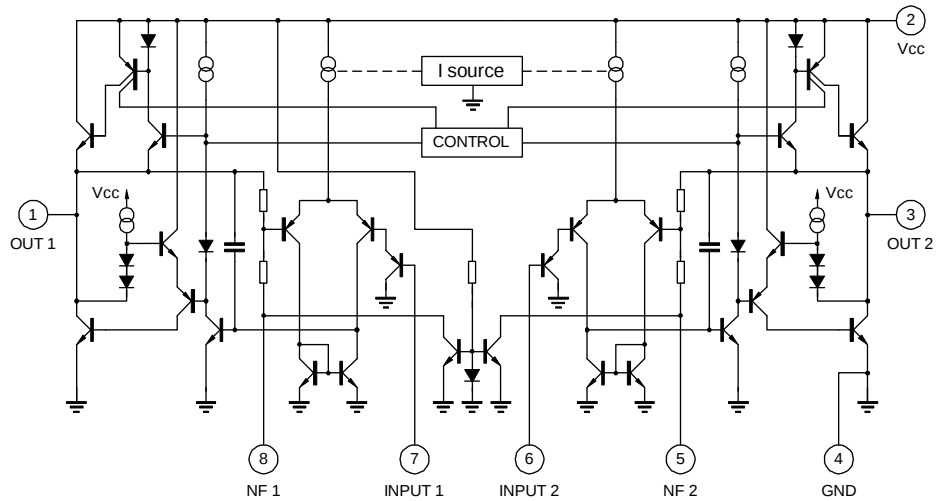
TEST CIRCUIT 1: STEREO



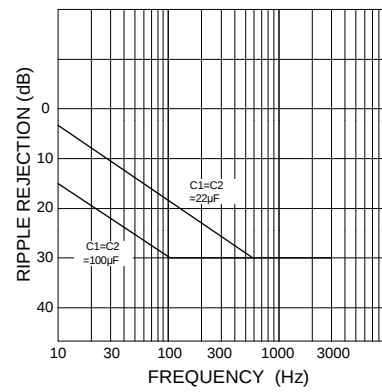
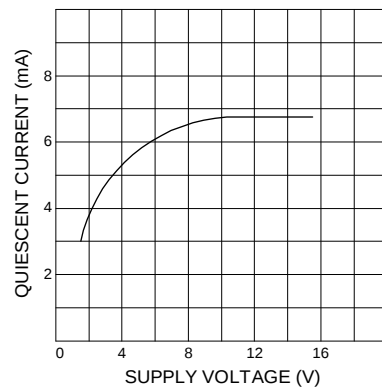
TEST CIRCUIT 2: BRIDGE



## SCHEMATIC DIAGRAM



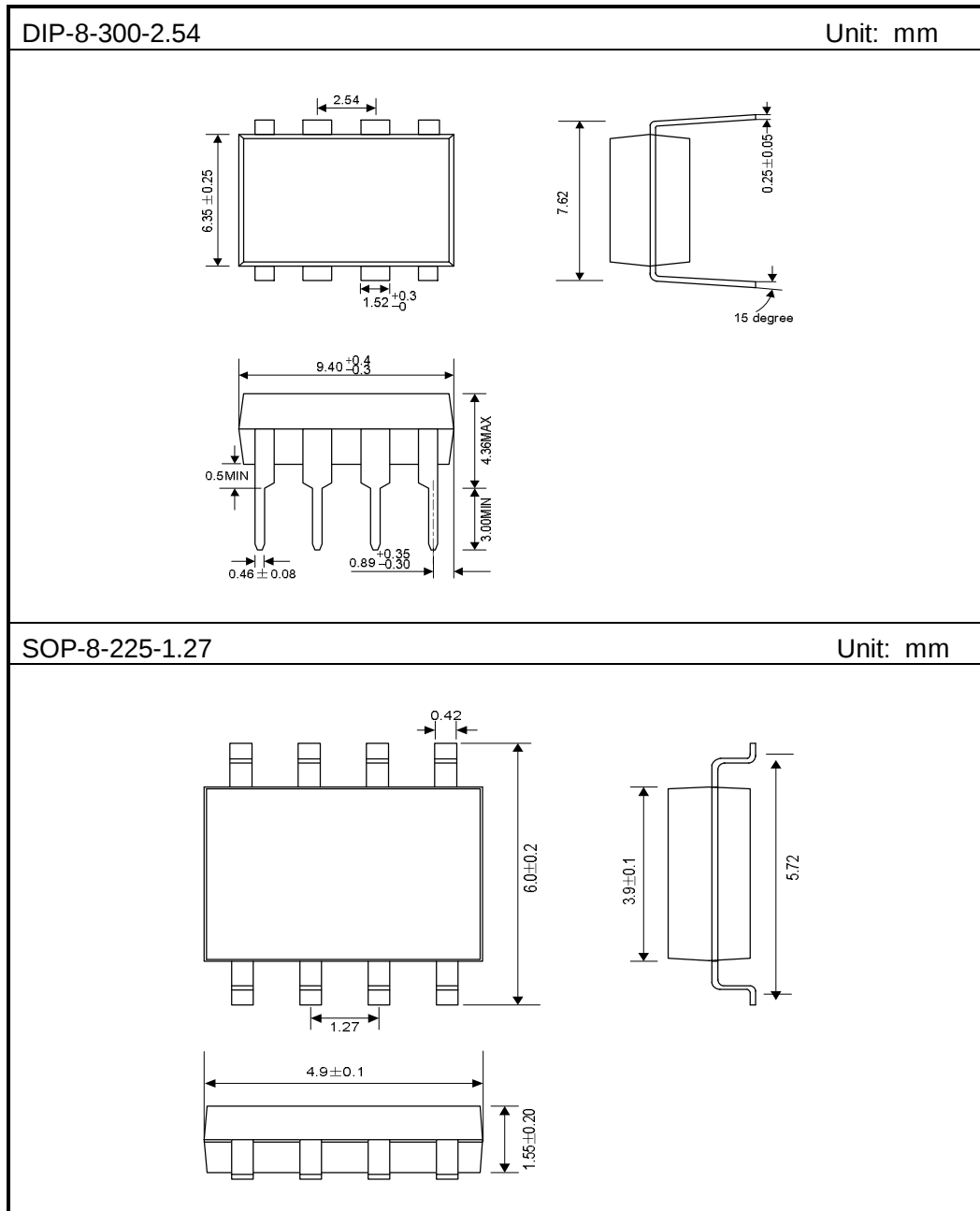
## TYPICAL PERFORMANCE CHARACTERISTICS



## PACKAGE DIMENSIONS

UTC2822D/E

LINEAR INTEGRATED CIRCUIT



Attach

Revision History

| Data       | REV | Description                                            | Page |
|------------|-----|--------------------------------------------------------|------|
|            | 1.0 | Original                                               |      |
| 2004.09.10 | 1.1 | Change"Operating Supply Voltage" from 9V to 12V        | 2    |
|            |     | Add "Output Power Vcc=9V"                              | 2    |
| 2004.09.13 | 1.2 | Add" Ordering information"                             | 1    |
|            |     | Add"DIP-8-300-2.54、SOP-14-225-1.27"Package out line    | 4    |
| 2005.3.18  | 1.3 | Revise"DIP-8-300-2.54、SOP-14-225-1.27"Package out line | 5    |
| 2006.09.29 | 1.4 | Revise" Ordering information"                          | 1    |
| 2012.1.11  | 1.5 | Revise" ELECTRICAL CHARACTERISTICS"                    | 2    |