

TA8227P

Low Frequency Power Amplifier

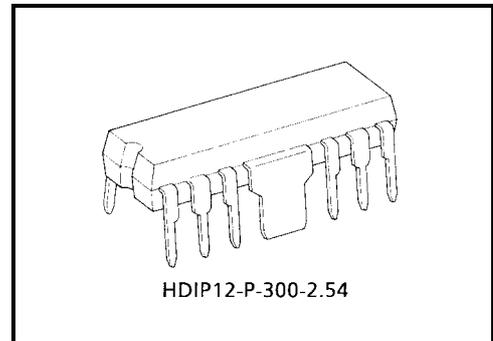
TA8227P is an audio power IC with built-in two channels developed for portable radio cassette tape recorder with power ON/OFF switch.

Because of the parts reduction and DIP (Dual Inline Package), space merit is remarkable.

Thermal shut down protection circuit is built in.

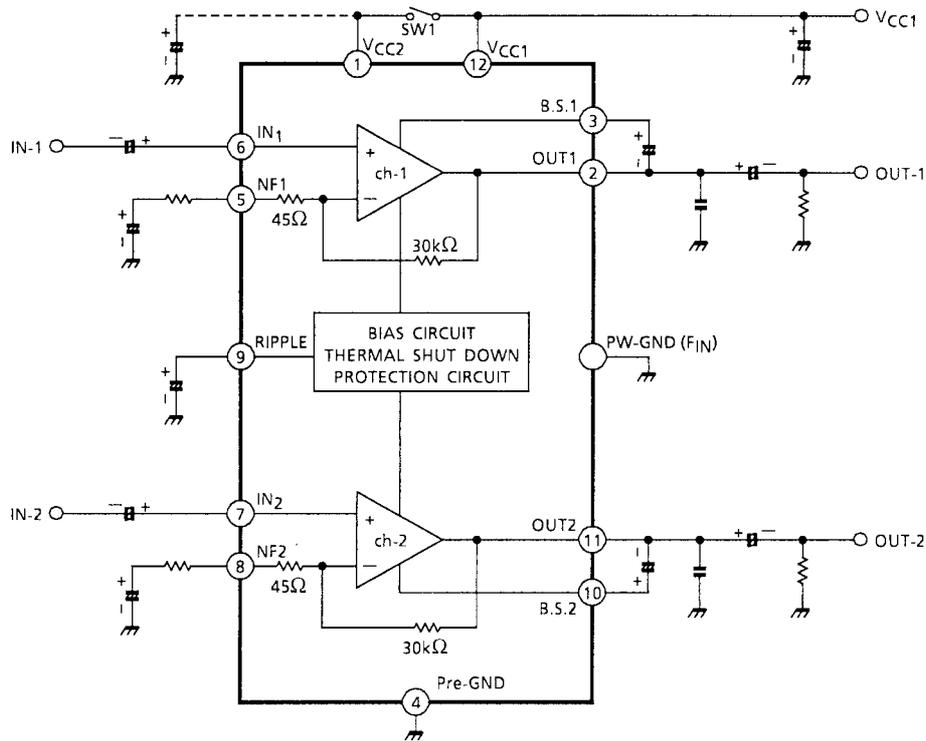
Features

- High power
 - : $P_{out} = 2.5 \text{ W/CH (typ.)}$
($V_{CC} = 9 \text{ V}$, $R_L = 4 \Omega$, $f = 1 \text{ kHz}$, $\text{THD} = 10\%$)
 - : $P_{out} = 3.0 \text{ W/CH (typ.)}$
($V_{CC} = 9 \text{ V}$, $R_L = 3 \Omega$, $f = 1 \text{ kHz}$, $\text{THD} = 10\%$)
- Voltage gain
 - : $G_v = 45.0\text{dB (typ.)}$ ($R_f = 120 \Omega$, $f = 1 \text{ kHz}$)
 - : $G_v = 56.5\text{dB (typ.)}$ ($R_f = 0 \Omega$, $f = 1 \text{ kHz}$)
- Small quiescent current
 - : $I_{CCQ} = 21 \text{ mA (typ.)}$ ($V_{CC} = 9 \text{ V}$, $V_{in} = 0$)
- Ripple rejection ratio
 - : $\text{R.R.} = -52\text{dB (typ.)}$ ($V_{CC} = 9 \text{ V}$, $f_{ripple} = 100 \text{ Hz}$, $R_g = 600 \Omega$)
- Cross Talk
 - : $\text{C.T.} = -50\text{dB (typ.)}$ ($V_{CC} = 9 \text{ V}$, $f = 1 \text{ kHz}$, $R_g = 600 \Omega$)
- Output noise voltage
 - : $V_{no} = 0.3 \text{ mVrms (typ.)}$ ($V_{CC} = 9 \text{ V}$, $R_g = 10 \text{ k}\Omega$, $\text{BW} = 20 \text{ Hz} \sim 20 \text{ kHz}$)
- Stand-by switch
- Soft clip
- Built-in thermal shut down protection circuit
- Operation supply voltage range: $V_{CC(\text{opr})} = 5 \sim 12 \text{ V}$ ($T_a = 25^\circ\text{C}$)
- Low popping noise at power ON
- Best for supply voltage 9 V



Weight: 1.4 g (typ.)

Block Diagram



Application Information and Application Method

1. Adjustment of voltage gain

The voltage gain G_V is obtained as follows by R_1 , R_2 and R_f in Figure 1.

$$G_V = 20 \log \frac{R_f + R_1 + R_2}{R_f + R_1}$$

When $R_f = 0 \Omega$ $G_V = 56.5\text{dB}$ (typ.)

When $R_f = 120 \Omega$ $G_V = 45\text{dB}$ (typ.)

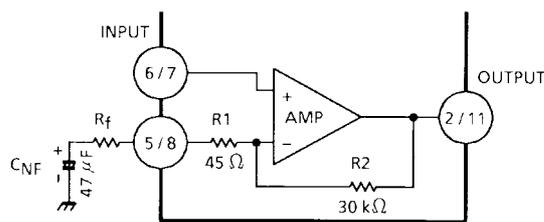


Figure 1

By increasing R_f , reduction of G_V is possible. However, since the feedback increase is liable to produce oscillation, it is recommended to use this at 40dB or over.

2. Thermal shut-down circuit

The thermal shut-down circuit is built in for the purpose of preventing the destruction of IC due to the abnormal temperature rise when the heat radiation is insufficient.

The operation temperature is set at radiation F_{in} temperature 175°C (typ.).

At this temperature or over the bias is interrupted to prevent the destruction of IC.