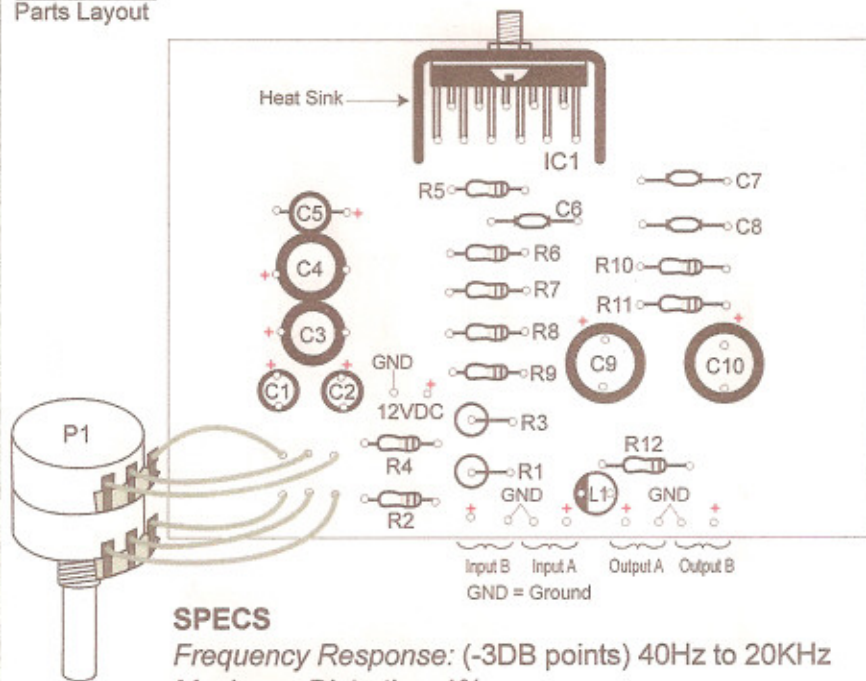


# Kit Assembly Instructions

## C6443 10W + 10W STEREO AMPLIFIER KIT

Figure 1  
Parts Layout

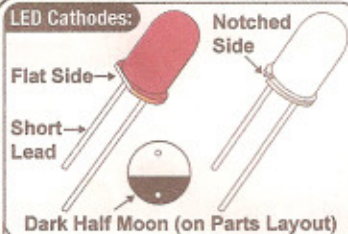


### SPECS

- Frequency Response: (-3DB points) 40Hz to 20KHz
- Maximum Distortion: 1%
- Efficiency: 60% (typical)
- Thermal Shut Down Temperature: 145°C
- Maximum Output: (3.2Ω Load) 11 watt RMS/Channel
- Voltage Range: 8 to 18VDC

### PARTS LIST

- C1, C2 \_\_\_\_\_ 4.7 μF Electrolytic Capacitor
- C3, C4 \_\_\_\_\_ 100 μF Electrolytic Capacitor
- C5 \_\_\_\_\_ 10 μF Electrolytic Capacitor
- C6, C7, C8 \_\_\_\_\_ .22μF Mono Capacitor (224)
- C9, C10 \_\_\_\_\_ 470 μF Electrolytic Capacitor
- IC1 \_\_\_\_\_ TDA2005
- L1 \_\_\_\_\_ Red LED
- P1 \_\_\_\_\_ 10KΩ Dual Potentiometer
- R1, R3 \_\_\_\_\_ 750Ω 1 watt Resistor
- R2, R4 \_\_\_\_\_ 2.7KΩ 1/4 watt Resistor
- R5 \_\_\_\_\_ 120KΩ 1/4 watt Resistor
- R6, R7, R12 \_\_\_\_\_ 680Ω Resistor
- R8, R9 \_\_\_\_\_ 2.7Ω 1/4 watt Resistor
- R10, R11 \_\_\_\_\_ 1Ω 1/4 watt Resistor
- Misc. \_\_\_\_\_ Heat Sink, Screw/Nut, Hex Nut  
Wire and PC Board



There are three main ways to determine the cathode side of the LED. The Parts Layout will indicate the cathode side of the LED by a dark half moon shape. On the physical part, usually, the cathode can be identified by one of three ways:

- 1) The lens of the LED has a flat side when viewed from the top (sometimes difficult to see).
  - 2) The shorter lead of the LED.
  - 3) If there is no flat side on the LED, there will be a notch in the lens of the LED.
- Please Note: Some LEDs may have both a flat side and a notched side. With these LEDs, always use the flat side to locate the cathode of the LED.

Figure 2  
LED (cathode) information

### RESISTOR COLOR CODE

SEE (\*) BELOW

BAND COLOR	1st DIGIT	2nd DIGIT	MULTIPLIER
BLACK	0	0	1
BROWN	1	1	10
RED	2	2	100
ORANGE	3	3	1,000 (K)
YELLOW	4	4	10,000
GREEN	5	5	100,000
BLUE	6	6	1,000,000 (M)
VIOLET	7	7	10,000,000
GREY	8	8	100,000,000
WHITE	9	9	1,000,000,000

\*TOLERANCE: NO COLOR 20%; SILVER 10%; GOLD 5%

Figure 3  
Resistor Color Code

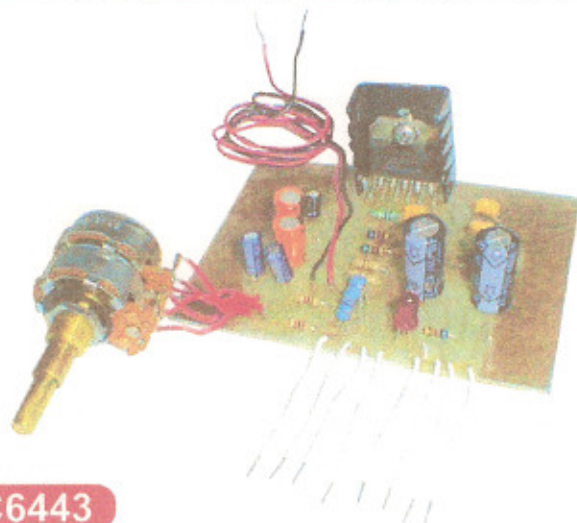
**CHANAY electronics**

10W + 10W STEREO AMPLIFIER KIT



Electronic Project KIT

SKILL LEVEL **2**



**C6443**

USE THIS AMPLIFIER KIT TO BOOST YOUR MUSIC EQUIPMENT!

Made in the U.S.A.

Rev 02/13/07AD

# Assembly Instructions

C6443 10W + 10W STEREO AMPLIFIER KIT

Page 2 of 3

## Tools Needed for Assembly:

- Small Pencil type soldering iron (40 watts rating or less)
- Pair of wire cutters, a screwdriver & needle nose pliers
- Pair of safety goggles or safety eyeglasses
- Damp sponge
- Fresh Rosin or Resin Core Tin/Lead solder

## ASSEMBLY INSTRUCTIONS

1. Assemble per Parts List, Parts Layout (Figure 1) and Schematic (Figure 4) using rosin or rosin core solder only. (Acid core solder and fluxes will ruin the kit.) Make sure to wear your safety eyeglasses or goggles before you start assembly.
2. First install C1 and C2 observing polarity as shown in Parts Layout. Next install C3 and C4 observing polarity shown and spreading the leads slightly to allow easy installation into PC board. Install C5 with polarity as shown.  
**NOTE:** C5 mounts opposite polarity as C3 and C4.
3. Install C9 and C10 observing polarity as shown and spreading the leads slightly to allow easy insertion into PC board. Now install remaining capacitors C6, C7, and C8; No polarity needed.
4. Install all resistors per Resistor Color Code (Figure 3). **NOTE:** Power resistors R1 and R3 mount upright.
5. Install P1 as shown.
6. Now install IC1 on heat sink using the screw and nut provided. The flat part of the heat sink should be flush against the tab of IC1.
7. Now install IC1/heat sink assembly that you just assembled on PC board as shown in Parts Layout. Now install LED L1 with cathode side going towards potentiometer P1. Refer to Figure 2 for help locating cathode side of LED.
8. Now cut wire supplied into 3" lengths and install on PC board. Use these short lengths to jumper (connect) to your speaker wires, battery, etc.
9. To test out, connect any 10 watt or greater 4 ohm to 8 ohm speaker to each output. Now connect output of your portable radio/tape player, tuner, CD player, etc. to input A and B making sure that the center lead of each cable goes to + and the outer shield leads go to points marked GND ground.
10. Turn tape player on. Adjust volume control on tape player to 1/4 turn. Connect 12VDC to booster amp, observing polarity as shown, and turn up level control P1 until output is at desired level with no distortion.

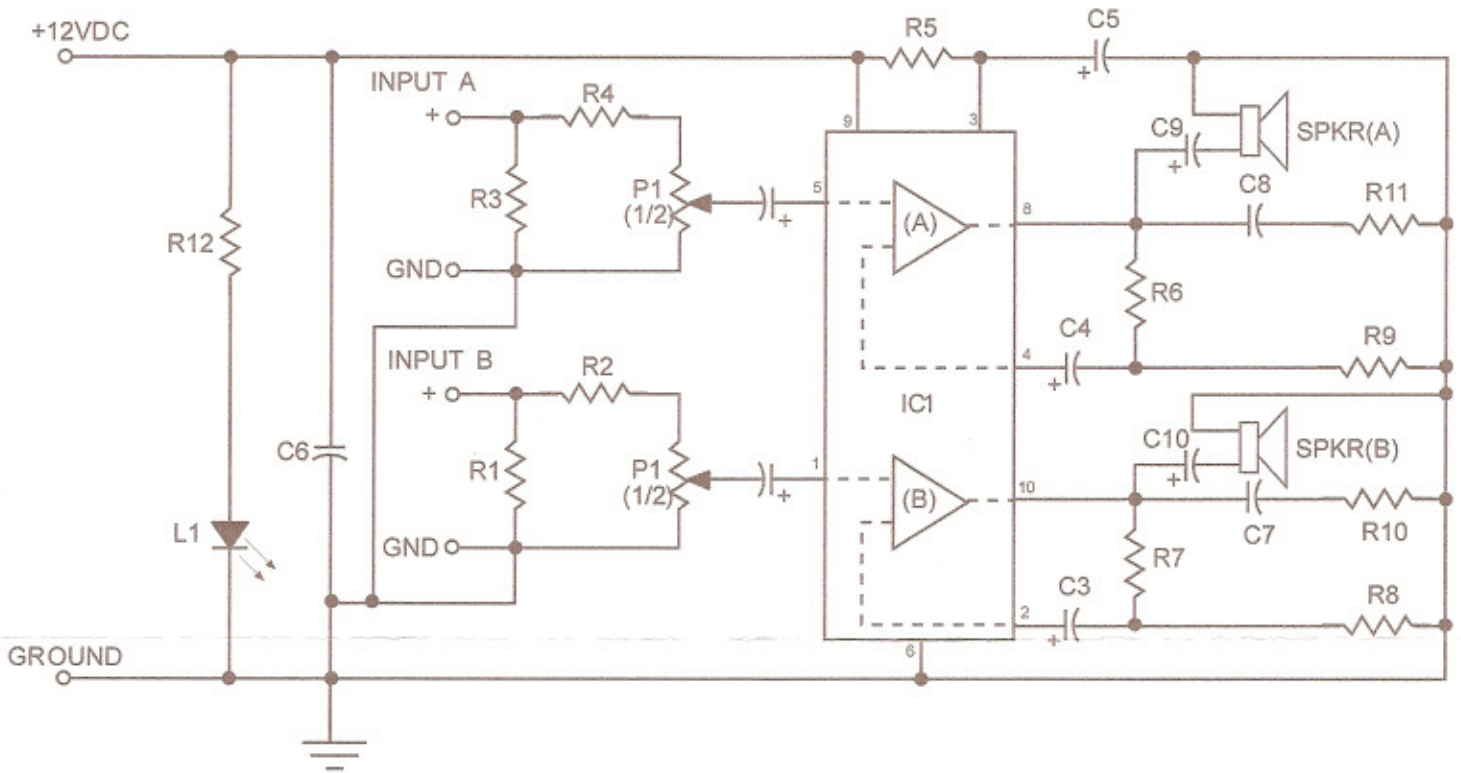
## THEORY OF OPERATION

The C6443 10W + 10W Stereo Amp consists of two 10 watt IC amplifiers in one plastic package. Each amplifier works the exact same way, so we will look at the operation of channel A only. If you look at the Schematic you will notice that the input signal source is brought into the amplifier through the voltage divider network made up of R1, R2 and P1. Resistor R1 provides a load impedance between the signal source and ground. Resistor R2 couples this signal, reduces it, and brings it to potentiometer P1. As the shaft of P1 is rotated clockwise, less resistance is placed between the input capacitor C1 and R2. As the resistance of P1 is reduced, the level of the signal becomes greater. Capacitor C1 couples the signal to the + input (pin 5) of the internal amplifier IC where the signal is greatly amplified. The input (pin 4) of the internal amp is coupled through a capacitor to ground and serves to decouple the DC input improving frequency response. The output of the internal IC amp is taken from pin 8 and coupled by capacitor C9 to the speaker. Resistors R6 and R9 set the gain of the amplifiers. LED L1 lights up by way of a series resistor connected from the anode to the +12VDC. **NOTE:** LEDs have a polarity and will not light up if installed backwards. A heat sink is provided to cool IC1. Power for both internal amplifiers is brought in on pin 9 (+) and pin 6 (GND). The amplifier is capable of producing 10 watts RMS output out of each channel.

## TROUBLE SHOOTING HINTS

1. **IMPORTANT:** Make sure that the solder used to build the kit was rosin core. If acid core solder was used, the kit will be conducting high voltage to various points where it should not and the kit will be **DESTROYED**.  
**PLEASE NOTE:** We cannot repair any kit that was assembled using acid core solder.
2. If you do not hear an amplified output out of your speakers, check:
  - A. 12VDC is being applied with polarity as shown.
  - B. Input signal is being applied at correct points and signal source is turned on.
  - C. Speakers with sufficient power capabilities are connected to correct points.
  - D. Double-check all soldering and parts placement.
3. If you hear distortion, check:
  - A. Input level from signal source is too high.
  - B. Level control P1/P2 is adjusted too high.
  - C. Less than 12VDC power is being applied
  - D. Output of signal source is distorted.
  - E. Your speakers cannot handle that much power.

Figure 4  
Schematic



FOIL PATTERN OF PC BOARD

