

INTRODUCTION

This easy-to-use kit provides a platform for the evaluation of linear power amplifiers circuits using the PA50/PA52 pin out. With ample breadboarding areas it is flexible enough to analyze a multitude of standard or proprietary circuit configurations. Critical connections for power supply bypassing are pre-wired. Components not usually readily available in engineering labs are provided. External connection to the evaluation kit can be made via the terminal block and terminal pads at the edges of the circuit board. The terminal pads are suitable for soldering standard banana jacks or direct soldering of wires. The schematic is shown in Figure 2.

BEFORE YOU GET STARTED

- * All Apex amplifiers should be handled using proper ESD precautions.
- * Do not change connections while the circuit is powered.
- * Initially set all power supplies to the minimum operating voltage allowed in the device data sheet.

PARTS LIST

Apex Part #	Description	Quantity
HS28	Heatsink	1
HS18	Heatsink	1
MS04	PC mount Cage Jacks	1 Bag/12 each
EVAL29	PC Board	1
60SPG00001	Spacer Grommets	4
OX7R105KWN	1µF Cap 1825B105K201N, Novacap	6
TS02	Terminal Strip	1
	Beau Interconnect 66507	
TWO5	Thermal Washer	1 Box/12 each
EC05	2200 µF Cap 100V	2
	United Chemi-Con	
	82DA222M100KC2D	
EC03	680µF 200V	2
	United Chemi-Con	
	KMH200VN681M25X40T2	
CSR17	0.025 ohm resistor	1
	ISOTEK PBV-R025-1	
CSR18	0.050 ohm resistor	1
	ISOTEK PBV-R050-1	
CSR19	0.100 ohm resistor	1
	ISOTEK PBV-R100-1	

ASSEMBLY

During assembly refer to Figure 1

1. Note that each circuit board side is identified. From the circuit side of the circuit board (not the component side) insert and solder cage jack MS04 at pins 1-12. Be sure that the cage jack sits flush with the surface of the circuit board.
2. Solder the surface mount ceramic capacitors to the component of the circuit board at C3-C7.
3. Mount the electrolytic capacitors at C1 and C2 from the component side of the circuit board and solder from the circuit side of the circuit board. Note polarity and be sure to fill the holes with solder. Use correct voltage capacitor for your application.
4. Mount the terminal strip TS02 to the component side of the circuit board. Make sure the terminal strip sits flat against the circuit board and be sure to fill the holes with solder.
5. The PA50/PA52 does not have a current limit function. However, you might plan to construct such a circuit for yourself. The circuit board is designed to facilitate that step. If you do not plan to design a current sensing circuit use heavy wire to jump the resistor mounting holes at the location on the circuit board labeled "OPT" and skip to step 8.
6. Apply thermal grease to the back side of the resistor and mount the resistor to the HS28 heat sink provided with #4 screw and nut. Leave the screw somewhat loose until the resistor is soldered to the circuit board. Three current sense resistors are provided as well as a heat sink for those resistors. If you do plan to have a current sensing circuit note that the sensing resistor is positioned so that only one-half of the output current flows through it. The current in both output pins sets will be very close to the same value. Sensing only one-half of output current lowers the power dissipation in the current sense resistor.
7. Mount the HS28 heat sink and current sense resistor combination to the component side of the circuit board and solder from the circuit side of the circuit board. Be sure to fill the holes with solder. Tighten the screw that mounts the resistor to the HS28.
8. Use #14 sleeving to insulate and align at least 2 opposite pins of the amplifier.
9. Add other components to complete your circuit design. Note that the solder terminals labeled 2 and 3 are left for you to connect to the amplifier via the components that you will add for your particular design.
10. Push the four nylon spacers into the circuit board from the circuit side of the circuit board at the four corner locations.
11. Apply TWO5 thermal washer to the bottom of the PA50. Mount the amplifier to the HS18 heat sink provided and loosely attach with #6 screw and nut.
12. Place the assembled circuit board over the pins of the amplifier making sure that the pin 1 location on the circuit board matches up with pin 1 of the amplifier. Insert the pins of the amplifier into the circuit board mating cage jacks.
13. Mount the circuit board assembly to the heat sink with #6 self tapping or sheet metal screws at the four corners of the heat sink.
14. Tighten the screws that mount the amplifier to the heat sink via the access holes in the circuit board.

EK27

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EVALUATION KIT
 FOR PA50/PA52

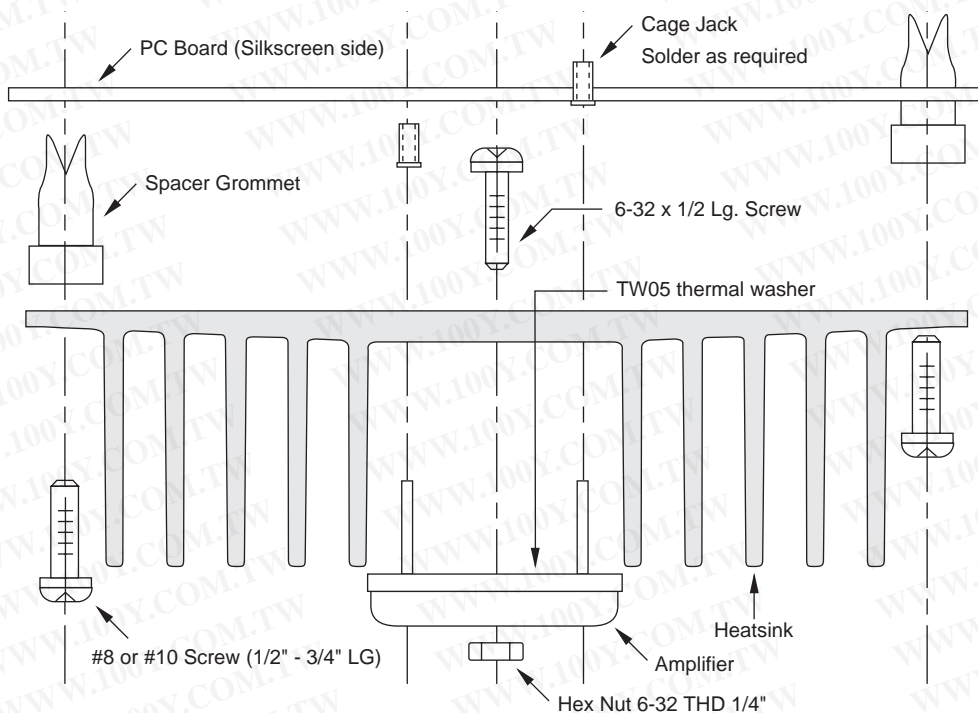


FIGURE 1.

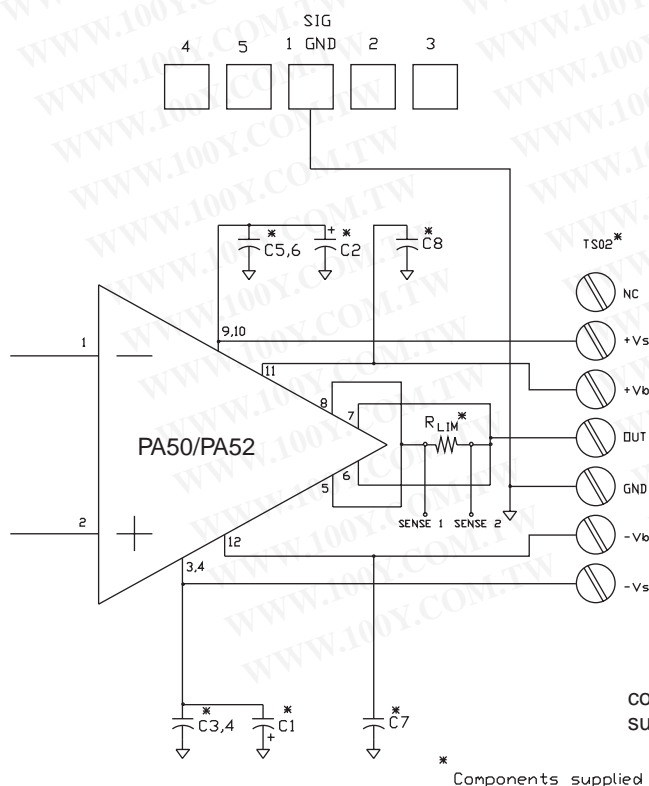


Figure 2 shows the schematic of the pre-wired connections of the EK27. Components which are supplied with the kit are marked *

* Components supplied with kit

FIGURE 2. PCB SCHEMATIC.