





# Evaluation Kit for PA50, PA52 Power Op Amps

#### 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 Precision Power 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**

Description	Quantity
Heatsink	1
PC mount Cage Jacks	1 Bag/12 each
PC Board	1
Spacer Grommets	4
1μF Cap 1825B105K201N,	6
Novacap	
Terminal Strip	1
Beau Interconnect 66507	
Thermal Washer	1 Box/12 each
2200 μf Cap 100V	2
United Chemi-Con	
82DA222M100KC2D	
680µF 200V	2
United Chemi-Con	
KMH200VN681M25X40T2	
	Heatsink PC mount Cage Jacks PC Board Spacer Grommets 1µF Cap 1825B105K201N, Novacap Terminal Strip Beau Interconnect 66507 Thermal Washer 2200 µf Cap 100V United Chemi-Con 82DA222M100KC2D 680µF 200V United Chemi-Con

#### **ASSEMBLY**

During assembly refer to Figure 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.
- Solder the surface mount ceramic capacitors to the component of the circuit board at C3-C7.
- 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.
- 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.
- Use #14 sleeving to insulate and align at least 2 opposite pins of the amplifier.
- 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.
- Push the four nylon spacers into the circuit board from the circuit side of the circuit board at the four corner locations
- Apply TW05 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.
- 9. 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.
- 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.
- 11. Tighten the screws that mount the amplifier to the heat sink via the access holes in the circuit board.







FIGURE 1.

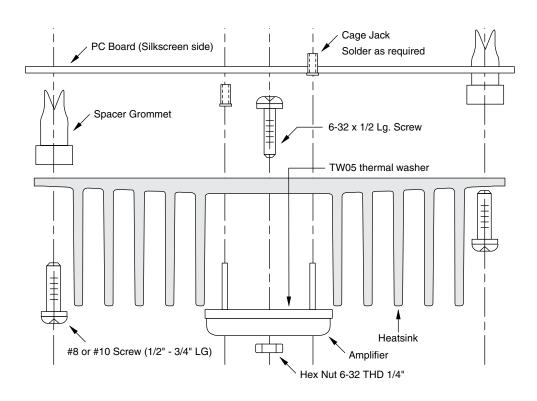


FIGURE 2. PCB SCHEMATIC.

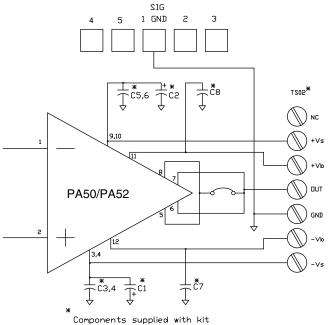
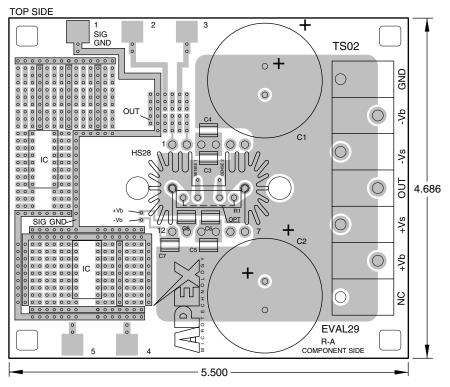


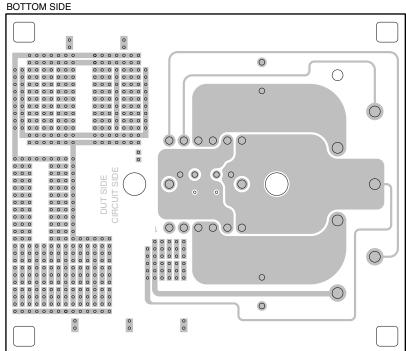
Figure 2 shows the schematic of the pre-wired connections of the EK27. Components which are supplied with the kit are marked \*

2 EK27U



#### FIGURE 3. PCB





EK27U 3





## CONTACTING CIRRUS LOGIC SUPPORT

For all Apex Precision Power product questions and inquiries, call toll free 800-546-2739 in North America. For inquiries via email, please contact apex.support@cirrus.com.

International customers can also request support by contacting their local Cirrus Logic Sales Representative. To find the one nearest to you, go to www.cirrus.com

#### IMPORTANT NOTICE

Cirrus Logic, Inc. and its subsidiaries ("Cirrus") believe that the information contained in this document is accurate and reliable. However, the information is subject to change without notice and is provided "AS IS" without warranty of any kind (express or implied). Customers are advised to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, indemnification, and limitation of liability. No responsibility is assumed by Cirrus for the use of this information, including use of this information as the basis for manufacture or sale of any items, or for infringement of patents or other rights of third parties. This document is the property of Cirrus and by furnishing this information, Cirrus grants no license, express or implied under any patents, mask work rights, copyrights, trademarks, trade secrets or other intellectual property rights. Cirrus owns the copyrights associated with the information contained herein and gives consent for copies to be made of the information only for use within your organization with respect to Cirrus integrated circuits or other products of Cirrus. This consent does not extend to other copying such as copying for general distribution, advertising or promotional purposes, or for creating any work for resale.

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). CIRRUS PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN PRODUCTS SURGICALLY IMPLANTED INTO THE BODY, AUTOMOTIVE SAFETY OR SECURITY DEVICES, LIFE SUPPORT PRODUCTS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF CIRRUS PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK AND CIRRUS DISCLAIMS AND MAKES NO WARRANTY, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, WITH REGARD TO ANY CIRRUS PRODUCT THAT IS USED IN SUCH A MANNER. IF THE CUSTOMER OR CUSTOMER'S CUSTOMER USES OR PERMITS THE USE OF CIRRUS PRODUCTS IN CRITICAL APPLICATIONS, CUSTOMER AGREES, BY SUCH USE, TO FULLY INDEMNIFY CIRRUS, ITS OFFICERS, DIRECTORS, EMPLOYEES, DISTRIBUTORS AND OTHER AGENTS FROM ANY AND ALL LIABILITY, INCLUDING ATTORNEYS' FEES AND COSTS, THAT MAY RESULT FROM OR ARISE IN CONNECTION WITH THESE USES.

Cirrus Logic, Cirrus, and the Cirrus Logic logo designs, Apex Precision Power, Apex and the Apex Precision Power logo designs are trademarks of Cirrus Logic, Inc. All other brand and product names in this document may be trademarks or service marks of their respective owners.

4 EK27U