

INTRODUCTION

This easy-to-use kit provides a platform for the evaluation of linear power amplifiers circuits using the MP230/MP240 pin out. With ample bread boarding 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 wiring of wires. Additionally, banana jacks and a BNC connector can be inserted into the holes at the edge of the board and wired to the numbered terminal pads.

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

Ref.	Apex Part #	Description/Vendor	Qty
N/C	HS28	Heat Sink	1
N/C	HS26	Heat Sink	1
N/C	MS08	PC mount cage jack	3 bags/15ea.
N/C	EVAL45	PC Board	1
N/C	60SPG00004	Spacer Grommets	4
C1-4	OX7R105KWN	1uF Cap/	4
		Novacap 1825B105K201N	
TS1	TS02	Terminal Strip	1
C5,6*	EC05	2200uF 100V/	2
		United Chemi-Con	
		82DA222M100KC2D	
C5,6*	EC03	680uF 200V/	2
		United Chemi-Con	
		KMH200VN681M25MX40T2	
RLIM*	CSR17	0.025 Ohm Resistor/	1
		Isotek PBV-R025-1	
RLIM*	CSR18	0.050 Ohm Resistor/	1
		Isotek PBV-R050-1	
RLIM*	CSR19	0.100 Ohm Resistor/	1
		Isotek PBV-R100-1	

* Selected per instructions.

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

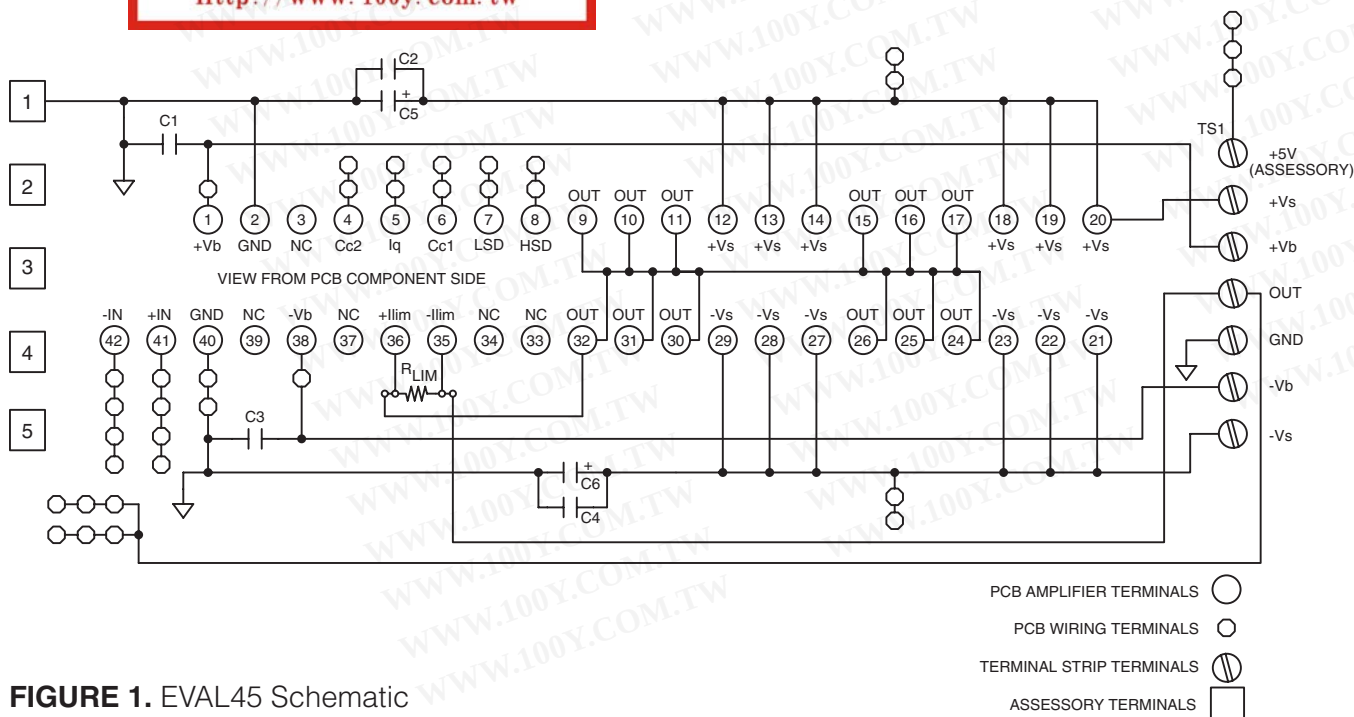


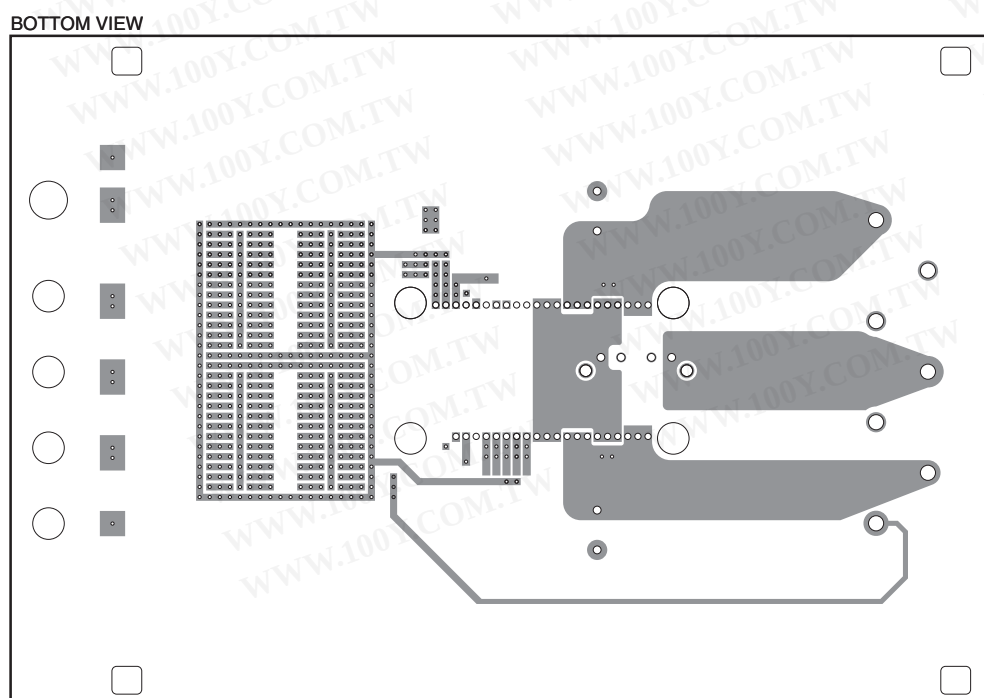
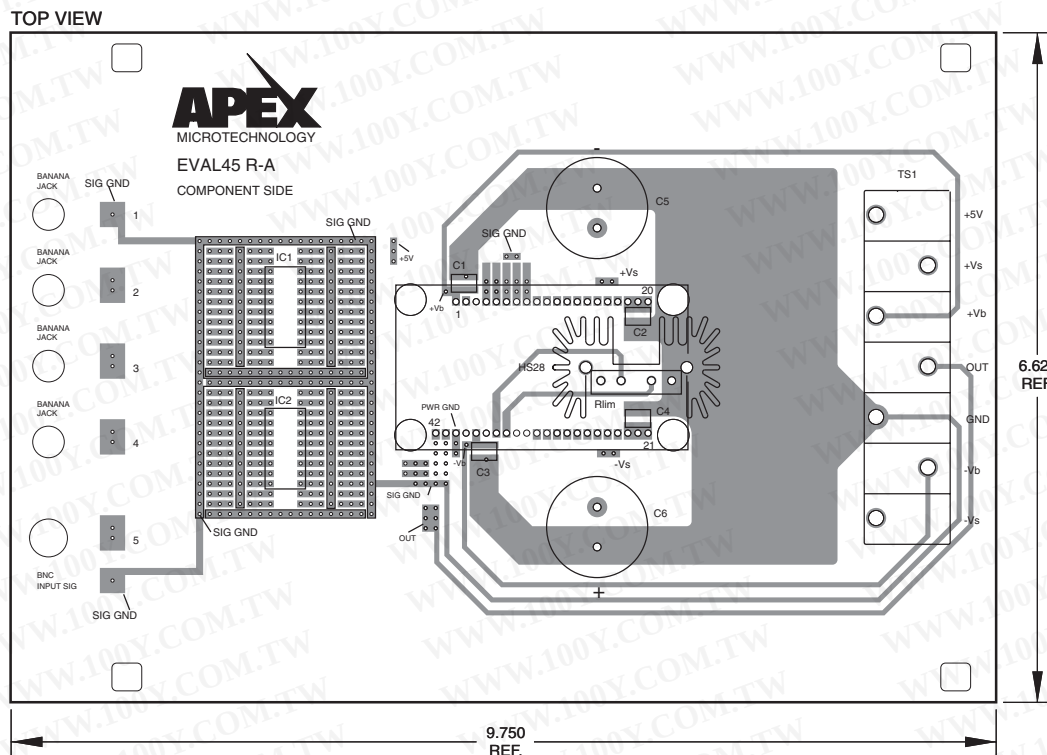
FIGURE 1. EVAL45 Schematic

ASSEMBLY

During assembly refer to Figure 2 and the data sheet for the product you are using, either the MP230 or MP240.

1. Note that each side of the circuit board is identified as either the "component side" or "DUT side".
2. From the "DUT side" of the board insert and solder the MS08 cage jacks at pin locations 1-42 except for pin locations 3, 33, 34, 37, and 39 as these locations have no solder pads. Be sure that the cage jacks are fully seated before soldering. Be careful that solder does not flow into the cage jack.
3. Solder the surface mount capacitors at C1, C2, C3, and C4 on the "component side" of the board.
4. Mount the electrolytic capacitors at C5 and C6 from the "component side" of the PCB. Match the polarity markings on the capacitor with the polarity markings on the PCB. Use the correct voltage capacitors for the product you are using: 100V capacitors for the MP230 and 200V capacitors for the MP240. Be sure the capacitors have snapped into the PCB and solder from the "DUT side" of the PCB. Be sure to fill the holes with solder.
5. Several low ohm value resistors are provided with this evaluation kit: 0.025 ohm, 0.050 ohm and 0.100 ohm. These are used to implement current limiting in the output circuit. Select the value most appropriate for your application. Refer to the product data sheet to determine which resistor value you should use.
6. Mount the HS28 heat sink to the PCB and solder the mounting tabs of the heat sink.
7. Apply a thin layer of thermal grease on the back of the chosen current limiting sense resistor, insert the resistor into the PCB and mount the resistor to the HS28 heat sink using #4 screw and nut hardware (not supplied). Trim resistor leads as short as possible to avoid interference when mounting the DUT.
8. Mount the terminal strip to the "component side" of the PCB. Make sure the terminal strip is fully seated and solder the pins from the "DUT side" of the PCB. Be sure to fill the mounting holes with solder.
9. Mount and wire the banana jacks and BNC connector (neither supplied) to the PCB pads at locations 1-5 as needed or desired.
10. Mount other components to complete your application circuit using the pads and holes provided.
11. From the "DUT side" of the PCB snap the spacer-grommets into the holes at the four corners of the PCB. Notice that the holes are slightly rectangular and match the spacer-grommet's long and short sides to the holes in the PCB.
12. Partially insert the MP230 or MP240 into the cage jack from the "DUT side" of the PCB. Apply a thin layer of thermal grease the amplifier.
13. Place the PCB assembly over the HS26 heat sink so that the four spacer-grommets line-up with the mounting holes in the heat sink and also that the four mounting holes of the amplifier line up with the mounting holes in the heat sink. Use the access holes in the PCB to see the mounting holes in the heat sink.
14. Mount the amplifier to the heat sink with #4 X 1/4" screws. It will be helpful to use either a magnetic tipped screwdriver or a screwdriver that has screw-holding feature. Alternately a #4 X 1/2" male-female hex spacer may be inserted into the mounting holes and tightened with a hex nut driver. Make the screws or hex spacers snug but do not over tighten, as this provides no benefit and may break the screws.
15. Using No. 8 x 1.0" Type AB sheet metal screws (not supplied) mount the PCB to the heat sink at the four spacer-grommets.
16. Hook up power and signals as necessary. The amplifier is now ready for testing.

FIGURE 2.



EK52

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EVALUATION KIT FOR
MP230/MP240 PIN OUT

FIGURE 3.

