

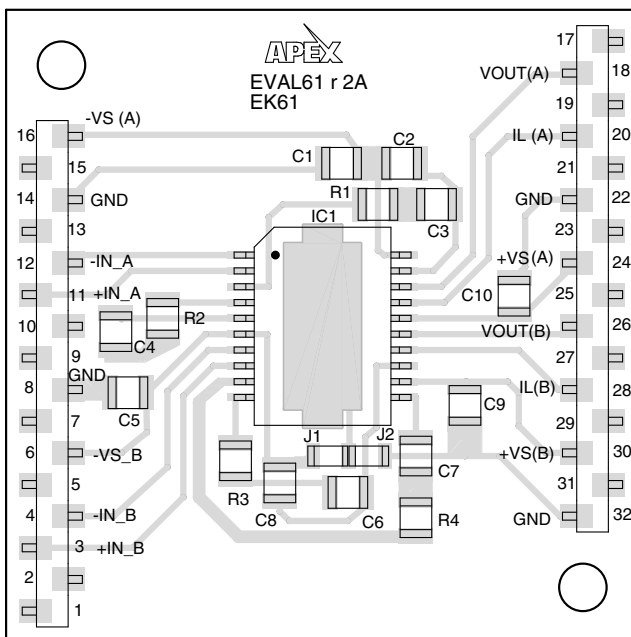
## INTRODUCTION

Fast and easy breadboarding of circuits using the PA78DK or PA79DK is possible with the EK61 evaluation kit. The EK61 includes both the universal EVAL36 board and the EVAL61 substrate. The use of EVAL36 and EVAL61 allows for a large area of breadboarding space to work with while allowing a surface mount substrate for the PA78DK or PA79DK. The PA78DK or PA79DK amplifier may be surface mounted directly to the EVAL61, a thermally conductive but electrically isolated substrate. The PA78DK or PA79DK is soldered to a DUT foil footprint area the size of the heatslug as shown in Figure 1. The metal substrate is cost effective and can allow the PA78DK or PA79DK to dissipate power up to the datasheet rating.

Part#	Designator/Reference	Quantity
ECJ-3FB2J103K	C1,C5,C9,C10	4
SQCB7MAR7CAJME	C3,C4,C6,C7	4
12067A330JAT2A	C2,C8	2
ERJ-8GEY0R00V	J2 (GND)	1
ERJ-8GEYJ302V	R1,R2,R3,R4	4
EVAL61	Evaluation substrate	1
EVAL36	Universal PC Board	1
TSM-116-01-T-SV	Terminal Strip, 16 PIN	2
SSW-116-01-T-S	Socket Strip, 16 PIN	2
PA79DK	DUT	1
*031606	5V, 10mA, 3.4°C/W heatsink with fan, AAVID	1

\* Parts are not supplied. Parts are application dependant. Suggested part numbers are provided.

Figure 1 - PCB



## BEFORE YOU GET STARTED

- All Apex amplifiers should be handled using ESD precaution.
- Review the Apex product datasheet and operating conditions.
- Always provide the appropriate heat sinking. Power dissipation must be considered to ensure maximum junction temperature ( $T_J$ ) is not exceeded.
- Always use adequate power supply bypass capacitors, Apex recommends at least 10 $\mu$ F per amp of output current.
- Do not change connections while the circuit is powered
- In case -Vs is disconnected before +Vs, a diode between -Vs and ground is recommended to avoid damage.
- Initially set all power supplies to the minimum operating levels allowed in the product datasheet.
- Check for oscillations up to and above the unity gain bandwidth of the amplifier.

## ASSEMBLY

The PA78DK & PA79DK are surface mount device and should be assembled to the EVAL61 substrate using surface mount processes. Solder paste may be dispensed or screen-printed on the DUT pads. The heat slug on the back of the PA78DK & PA79DK provides maximum heat dissipation capabilities when soldered to the foil footprint area. The PA78DK & PA79DK should be reflowed to the substrate using a solder reflow furnace. If this is not available, a heat plate capable of solder reflow temperatures may be used.

In accordance with the PA78 and PA79 datasheets, the package tab must be connected to a stable voltage reference in order to achieve high slew rates. Jumpers J1 and J2 allow convenient connection of the tab to -Vs or GND, respectively. Connect only one jumper to avoid a short circuit of the power supply.

Once the amplifier is mounted on the top of the substrate, the heat sink fan or selected heat sink can then be mounted to the back of the substrate. A heat sink is not supplied with the kit, but several options are available through AAVID Thermal Product, Inc. High thermal conductive thermal grease should be used when mounting the heat sink fan or heat sink to the evaluation board.

Review Figure 3 on next page for other possible assembly methods to construct this evaluation kit.

NOTE: All grounds must be tied together on the EVAL36 board.

Figure 2 - Schematic

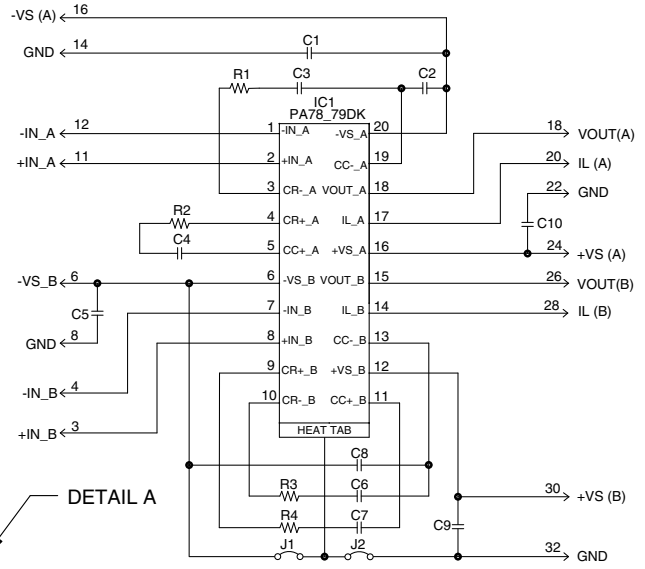


Figure 3 - Assembly

