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## Evaluation Kit

### APPLICABLE PARTS

- PA78DK
- PA79DK (included in kit)

**Note:** EK61 comes fully assembled with PA79DK and all surface mount components attached. For evaluation of PA78DK, use only one channel of the kit.

### 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 PA79DK. A PA79DK amplifier is surface mounted directly to the EVAL61, a thermally conductive but electrically isolated substrate. The PA79DK is soldered to a DUT foil footprint area the size of the heatslug as shown in Figure 2. The metal substrate is cost effective and can allow the PA79DK to dissipate power up to the datasheet rating.

Figure 1: Schematic

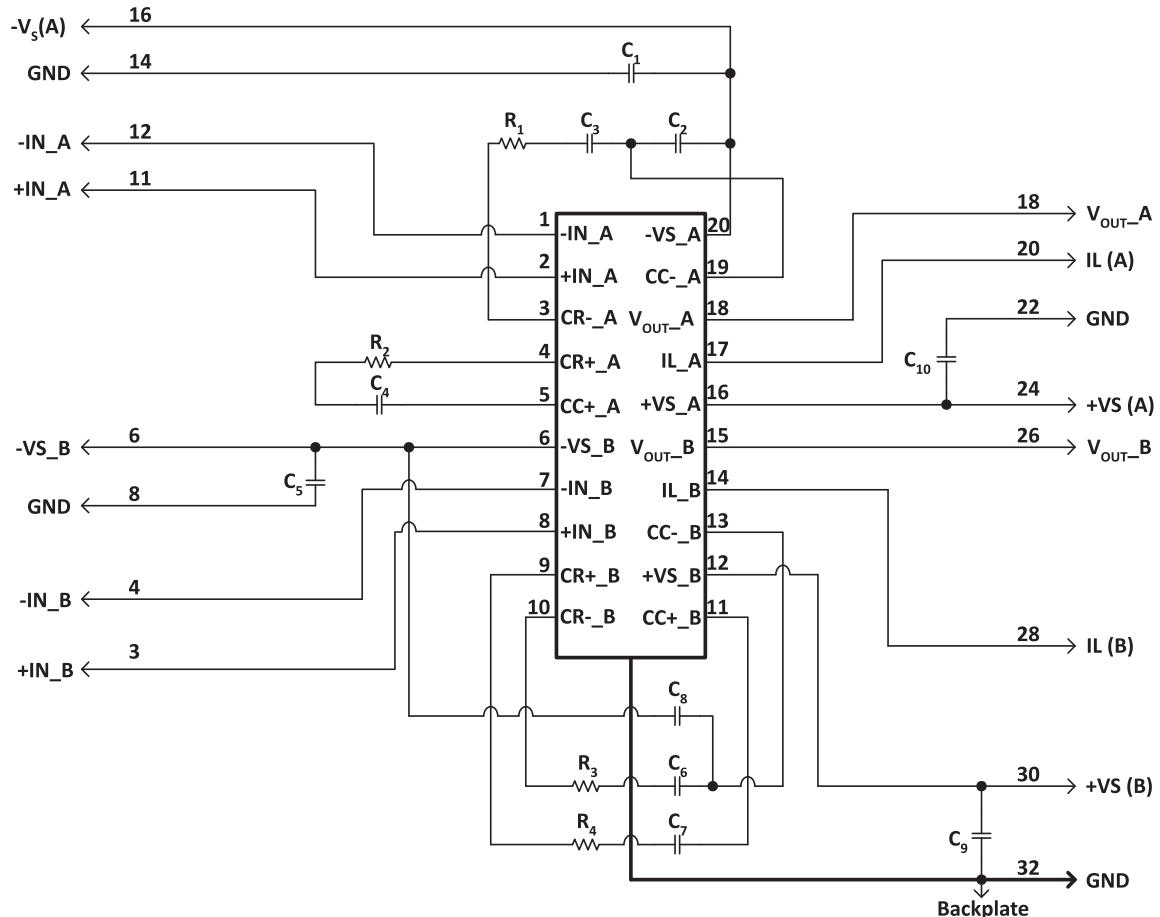
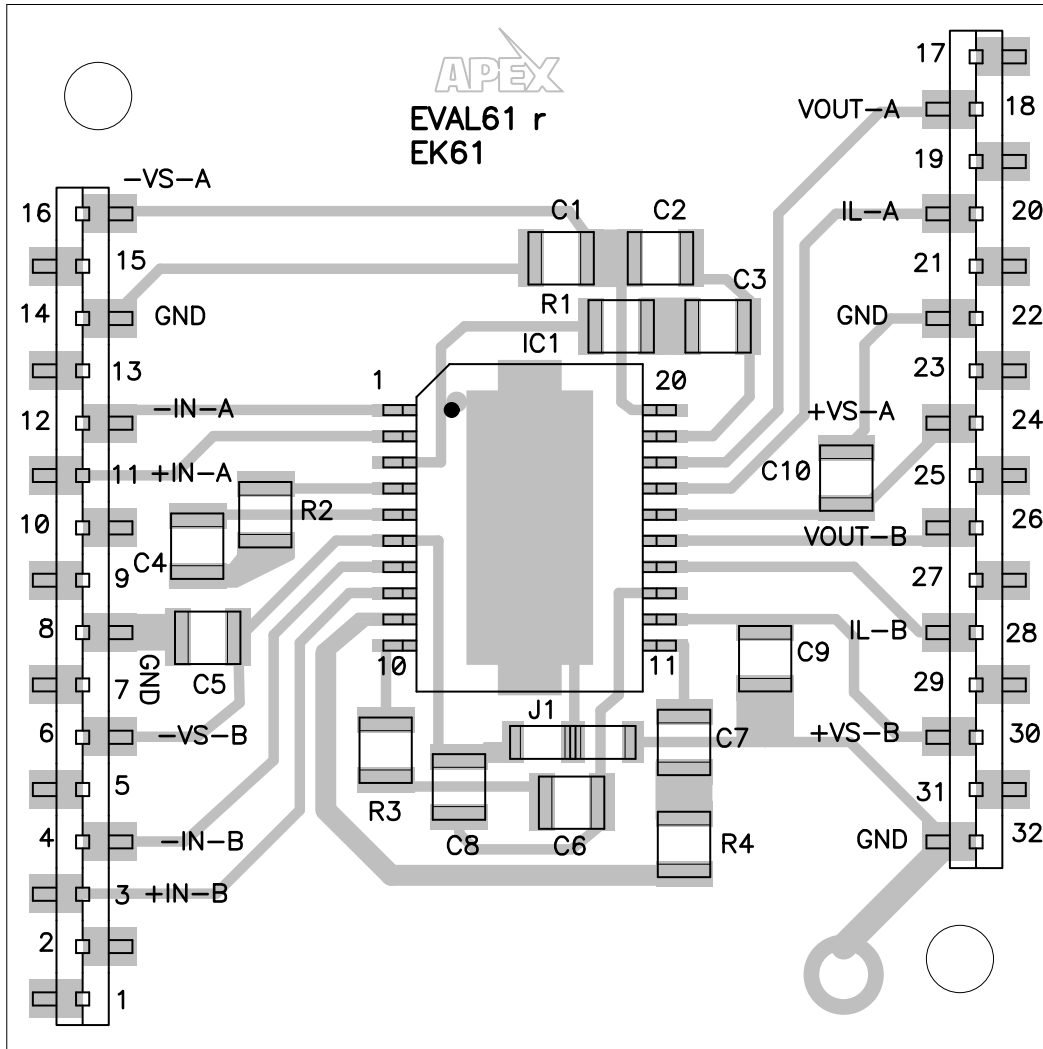


Figure 2: PCB



## PARTS LIST

Reference	Manufacturer Part #	Description	QTY
C1, C5, C9, C10	C1206X103K631RT	CAP, 0.01 $\mu$ F, 630V	4
C3, C4, C6, C7	C1111N4R7C501N	CAP, 4.7 pF, 500V, 0.25pF	4
C2, C8	C1206N330J501RT	CAP, 33pF, 500V, 5%	2
J1	R1206000ZRT	Res, Jumper - Pkg	1
R1, R2, R3, R4	R1206302JRT	Res, 3.0 k $\Omega$ , 1/4W, 5%	4
	EVAL61	Evaluation Substrate	1
	EVAL36	Universal PC Board	1
	PA79DK	IC 350V, 200mA, Dual Amp	1
	SSW-116-01-T-S	Socket Strip, 16 Pin	2
	TSM-116-01-T-SV	Terminal 16 Pin	2

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

11-5602-47G	5V, 10mA, 3.4°C/W heatsink with fan, AAVID	1
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## BEFORE YOU GET STARTED

- All Apex Microtechnology amplifiers should be handled using ESD precaution.
- Review the Apex Microtechnology 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 Microtechnology 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

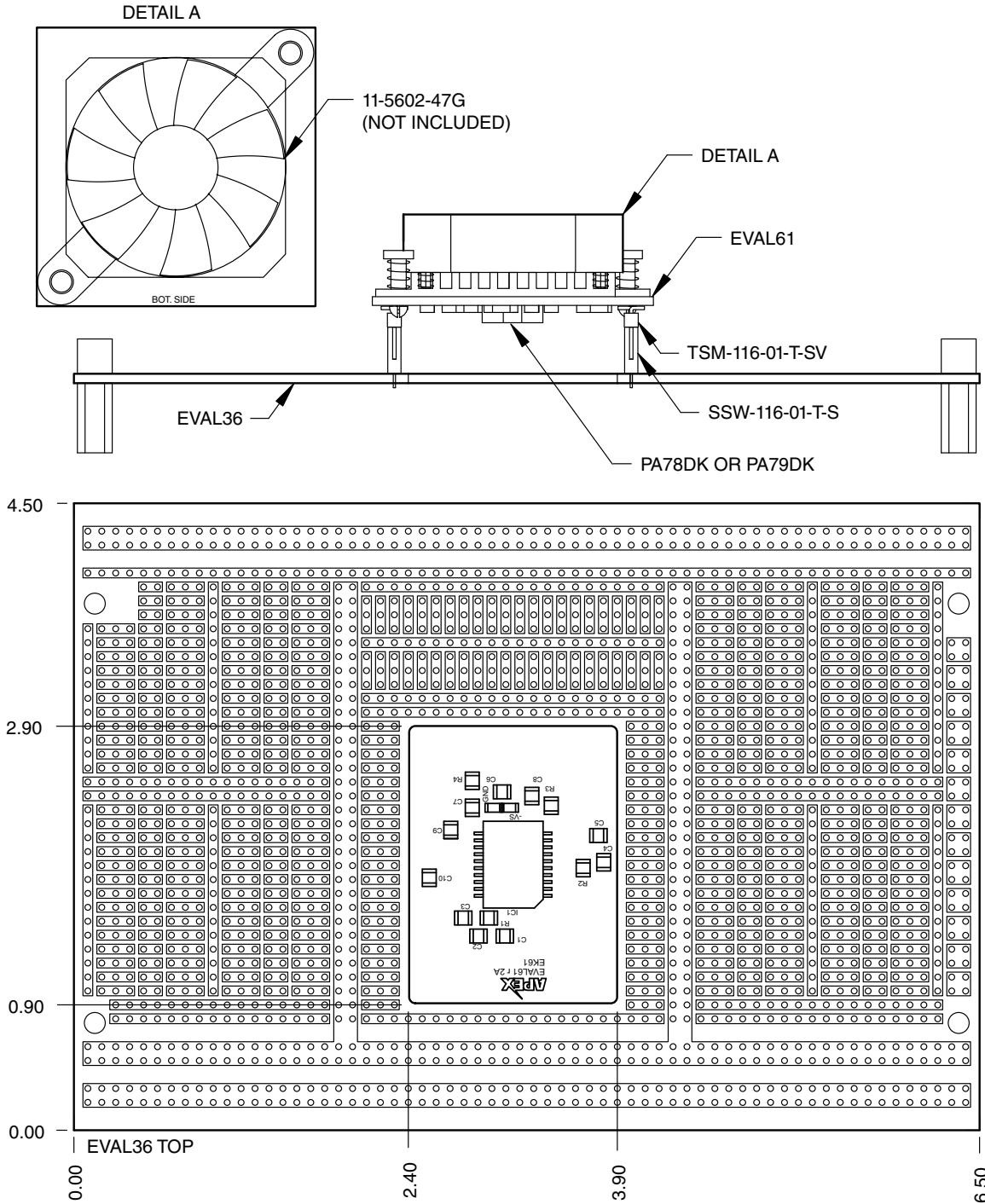
In accordance with the PA78DK and PA79DK datasheets, the package tab must be connected to a stable voltage reference in order to achieve high slew rates. Jumpers J1 and J2 allow convenient connection of the tab to -Vs or GND, respectively. Connect only one jumper to avoid a short circuit of the power 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 3: Assembly**



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## **NEED TECHNICAL HELP? CONTACT APEX SUPPORT!**

For all Apex Microtechnology product questions and inquiries, call toll free 800-546-2739 in North America. For inquiries via email, please contact [apex.support@apexanalog.com](mailto:apex.support@apexanalog.com). International customers can also request support by contacting their local Apex Microtechnology Sales Representative. To find the one nearest to you, go to [www.apexanalog.com](http://www.apexanalog.com)

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