

EK033 – MiniAmp with Speaker

Kit description:

EK033 is a small kit with surface-mounted components that, when assembled, makes for a handy little amplified speaker for breadboards. The kit is based around the popular class-D amplifier PAM8302 and is capable of driving small speakers with very few supporting components. The kit only has eight SMD components to mount, which makes it suitable for beginners and more experienced solderers alike. The amplifier is powered with voltages between 2V and 5.5V and the input will handle most typical audio signals, AC or DC. A small potentiometer on the back of the board can be used to preset the amplification. To adjust the signal level more conveniently when the amplifier is in use, a fixed resistor or a potentiometer can be inserted before the input pin. Multiple audio signals can also be mixed this way. The last pin, ~SD~ (shutdown), will disable the amplifier when shorted to GND



- * Supply voltage: 2 – 5.5VDC
- * Output power: 2.5W max
- * Speaker specifications: \varnothing 23mm 0.1W 8ohm
- * PCB dimensions: 23.5 x 29mm

Assembly guide:

Before you begin mounting components, make sure the board is free from damage and scratches. Make sure all the components are included and are of correct value. Compare with the component list!

To mount the SMD components, first tin one solder pad on the PCB for each component. The simple way to mount the components then is to simply hold the component with a pair of tweezers, melt the solder on the tinned pad and slide the component into the melted solder. When it's properly placed and has one pad soldered, just solder the other pad(s) and move on to the next component. Start with the large IC in the center, then move on to the smaller passive components, moving outwards and finish the assembly by mounting the through-hole parts (speaker and pin header). If the solder joints look pointy or irregular, simply re-melt the solder and if necessary, add additional flux.

Component list:

RefDes	Value	Qty.	Part.no.	Marking
C1, C2	1uF 0603	2	41022111	
C3	10uF 0805	1	41016661	
R1	10kohm 0805	1	40819410	"1002"
R2, R3	100ohm 0603	2	40817210	"01A"
R4	10kohm TC33X	1	41023506	
SPK	ø23mm 8ohm 0.1W	4	41017231	
U1	PAM8302A	1	41024428	

Assembled board:

