

About this circuit:

This is the schematic for the Audio Builders Workshop (ABW) metronome breadboard project

This circuit is based on the 555 timer IC (U1). Detailed explanation of how this part operates can be found on the web. It is being operated in astable mode here, i.e. as an oscillator. The variable resistor (R6) is used to set the frequency of the oscillator from about 1 pulse every 3 seconds to 10 pulses per second.

You can find versions of this circuit online, though this one is slightly different. One change is the use of diode D2 to provide a duty cycle less than 50%.

Resistor R3 limits the fastest rate to something reasonable.

The TLC555 version is a newer one and uses considerably less power than the original 555 device. However pretty much any version of the 555 will work in this circuit.

Capacitor C3 on the control pin is considered a good idea to ensure stable operation.

Capacitor C1 is a power supply decoupling cap and isn't critical in this application.

The Line out provides about a 0.7V P-P signal that can be used with an external amplifier/speaker. The output level is determined by the ratio of R2 to R5 and is intended to drive high impedance (> 10 K ohm) loads.

C2 serves to AC couple the output, but will cause a thump when the circuit is powered up.

One the tip connection on the headphone jack is made so that a mono plug can be used.


<http://bostonaes.org/BostonChapterAES>



Audio Builders Workshop



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