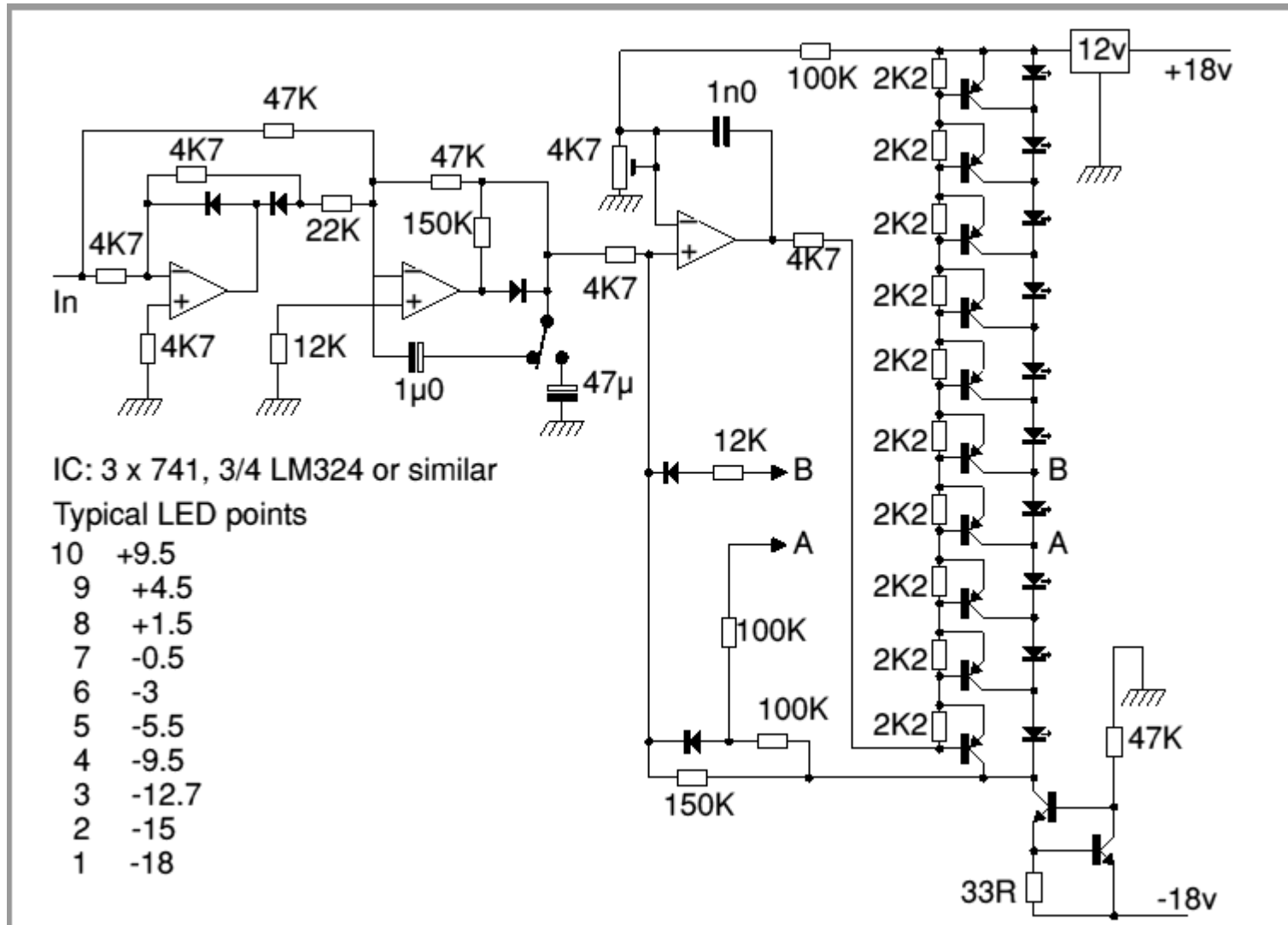


Audio LED VU meter

Audio level meter circuits are fairly often requested. Here is one.



The circuit was designed to work with an audio power amplifier which operated off +18v-0v-18v power rails. The actual voltage used is not too critical except that the feedback is referred to the LED chain which itself is anchored to a +12v rail, hence the separate stabilizer for this. It has one large advantage over most of the LED chips available - all the LEDs are in series so it only draws 20mA irrespective of the number of LEDs illuminated.

The two input op-amps form a rectifier circuit to rectify the audio input level. The changeover switch converts the circuit from average reading to peak reading.

The third opamp stage gives a logarithmic scale: it does this by means of a 5 stage feedback circuit. The various stages of feedback are switched in by the LED operating voltages and the diodes and resistors feeding back to the +ve input of the op-amp.

Clearly the calibration is going to be affected by the LED operating voltages: green LEDs are higher voltage than reds and high brightness LEDs drop more voltage than low. However my experience is that any particular make/type of LED are very consistent in voltage.

This circuit was evolved quite some while ago for an audio mixing desk and it was put into production. We were at that time trying to find an IC which would do the job. Once again the circuit using mostly discrete transistors worked out easier. This was however about 15 years ago and there are newer ICs which will do the job. However when I designed this circuit these were new and quite expensive.

This is a circuit which 4QD could manufacture and sell if there were sufficient demand so if you do have a quantity application please contact us. Let me know if you have any queries or how you get on with it!