

## The SOLX 452 part 1

This project started when I found a NOS Ghilmetti 20 x 20 pin matrix quite cheap on a local auction site. It's a 321 type, and the pins that came with it are gold plated shorting pins. I didn't have the finances to buy any ones with a built in resistor from Ghilmetti as they would have be custom made and very expensive.

There are some disadvantages of shorting pins:

1. Outputs need an isolating resistor after the buffer to prevent shorting any outputs together.
2. Combining 2 or more outputs gives the average instead of the sum.
3. Routing one of the outputs to an input automatically sends all of the combined outputs.

Ideally the pins would have the isolating resistor of 10k built in and the inputs as summing nodes. but the above solution works well in practice.

### The Oscillators

All three oscillators are based on the 3340 IC chips as this offers excellent temperature stability and quite simple designs.

They have the same output waveforms as the EMS versions but with outputs of 5V p-p to 10V p-p

### The Filter

The filter is pretty much a clone of the EMS low pass filter.

### The Envelope Shaper

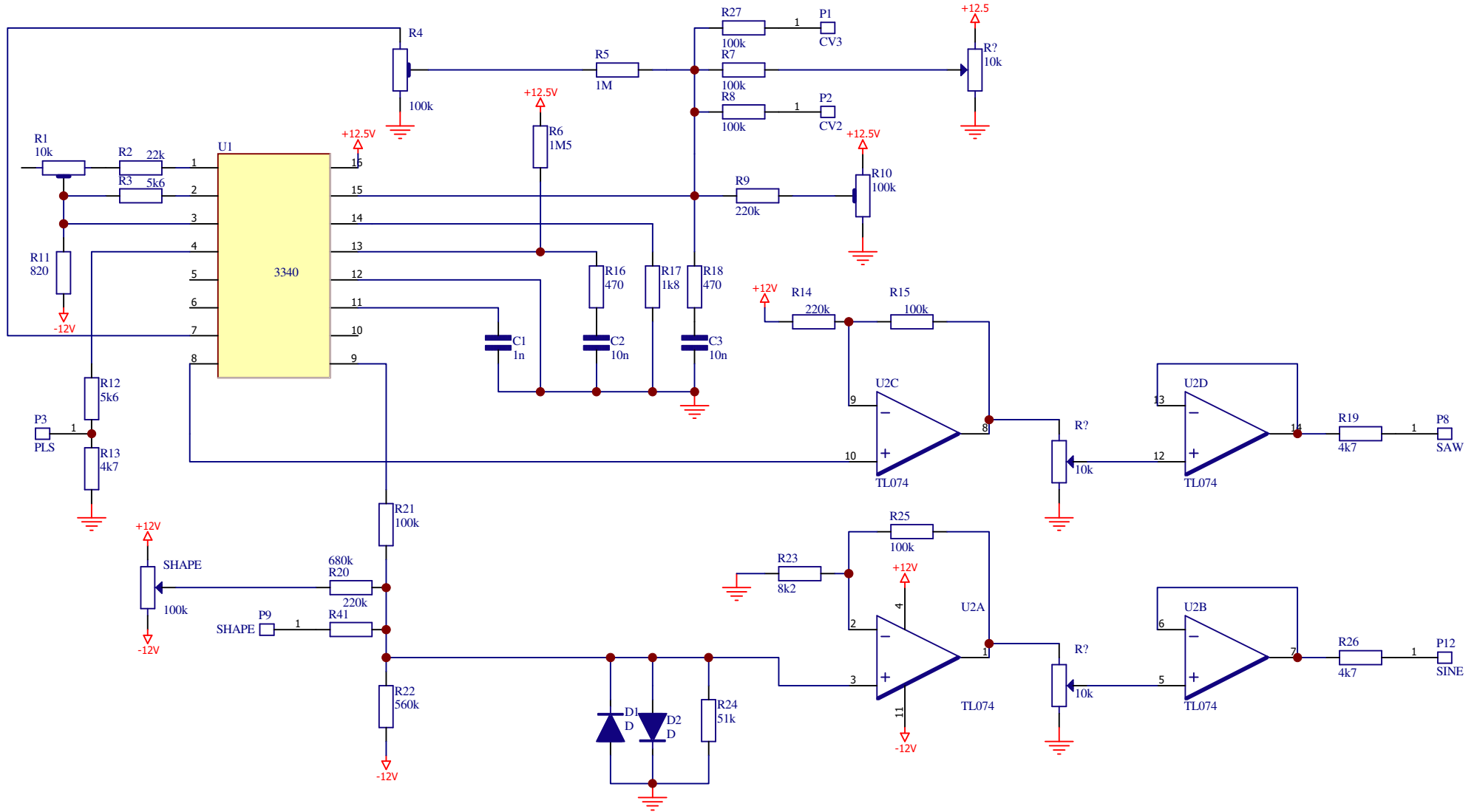
This is also more or less a clone of the EMS but with added output buffers and a modified gate input

### The Ring Modulator

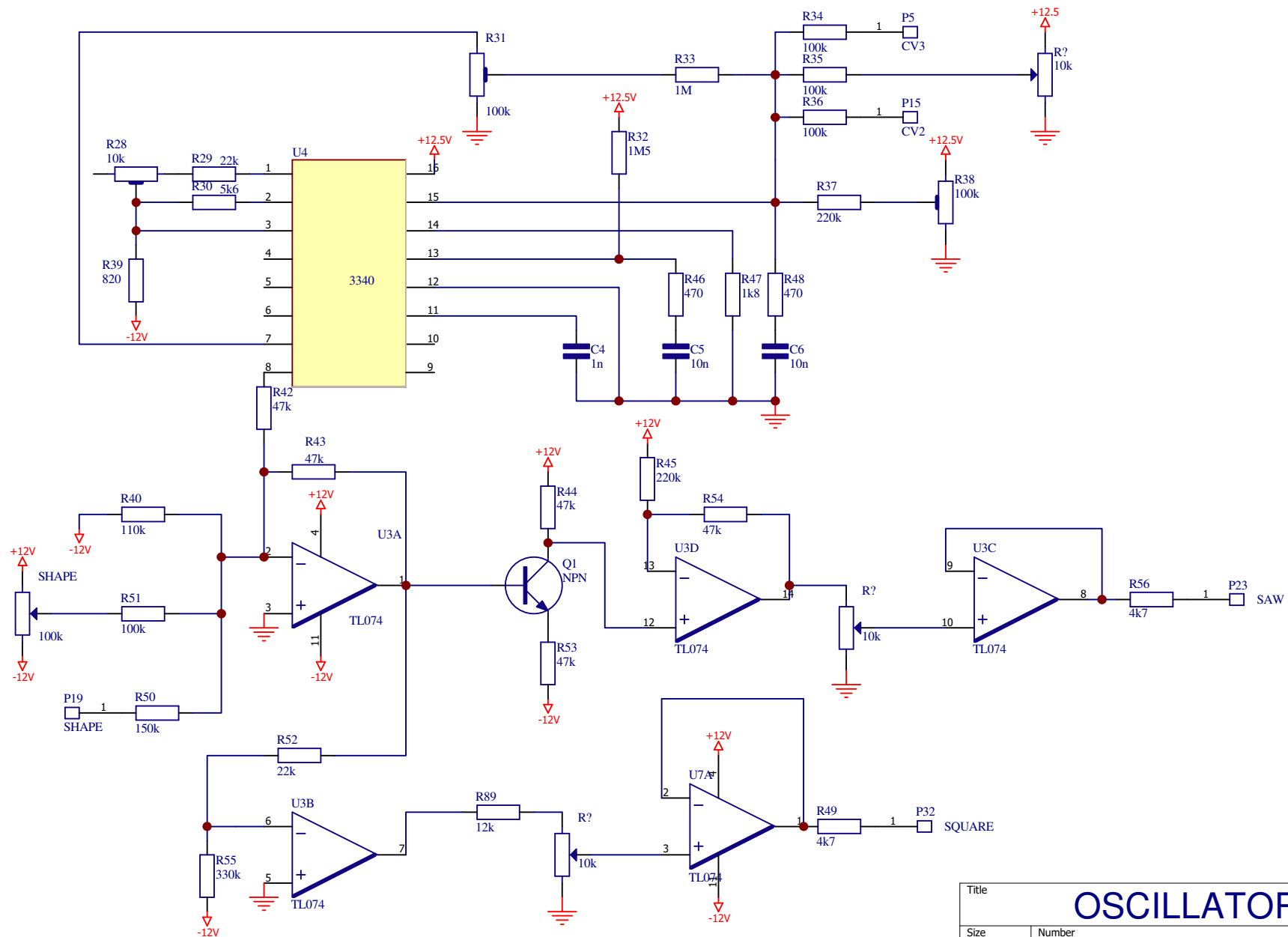
This is based on the 1496 chip and is a standard application design.

### The Reverb

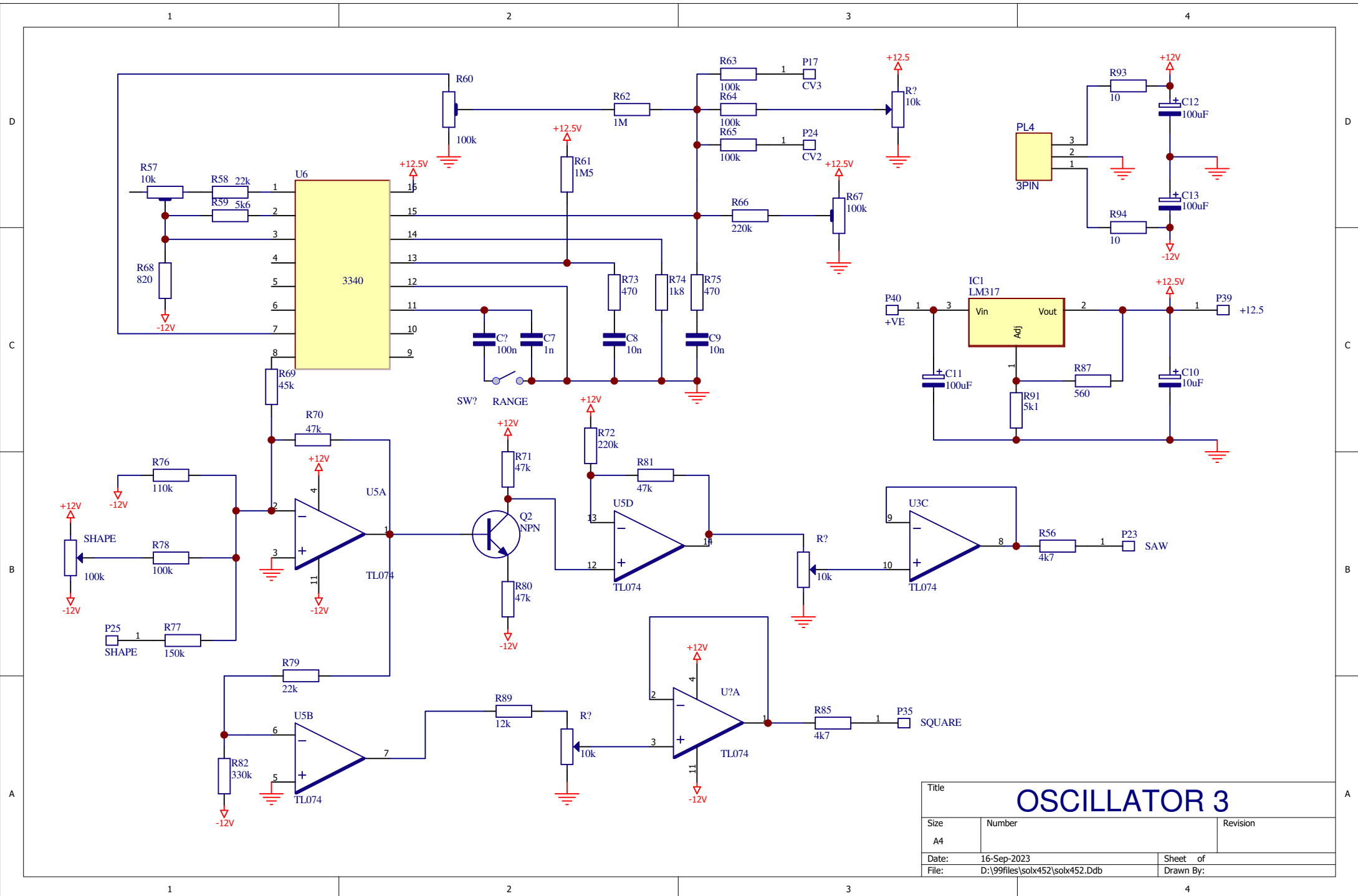
This is based on the EMS design but using opamps.



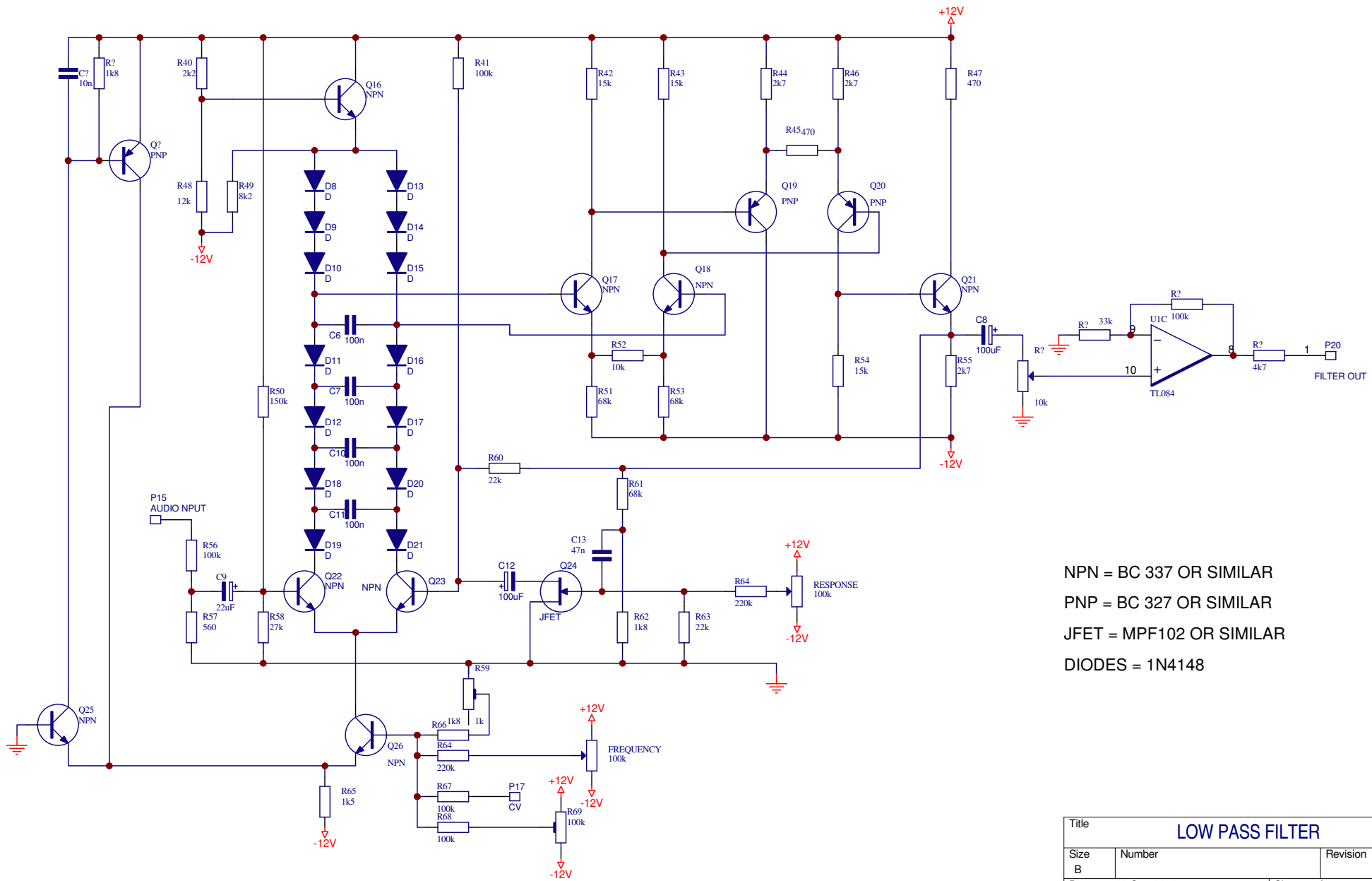
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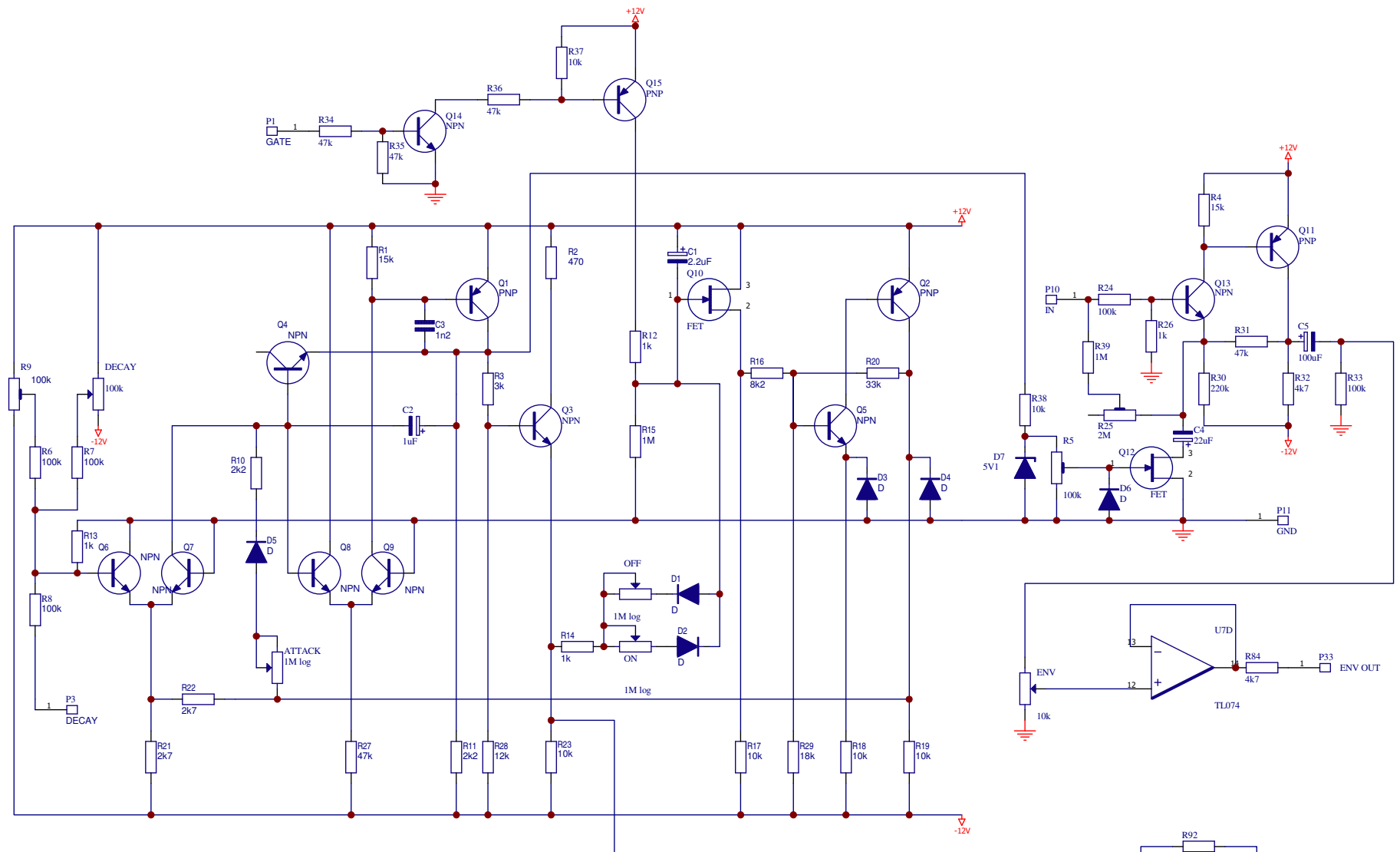


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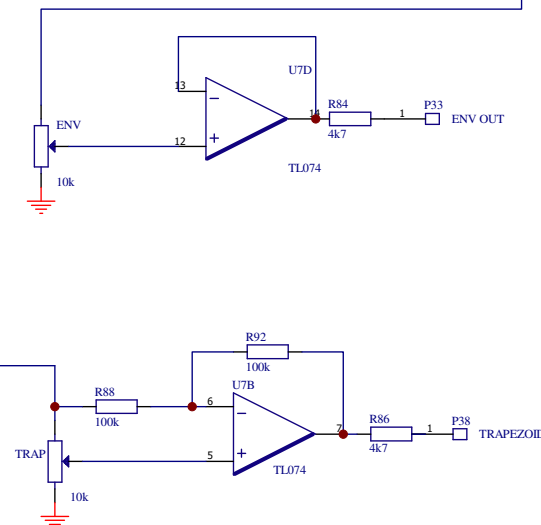


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 PNP = BC 327 OR SIMILAR  
 JFET = MPF102 OR SIMILAR  
 DIODES = 1N4148

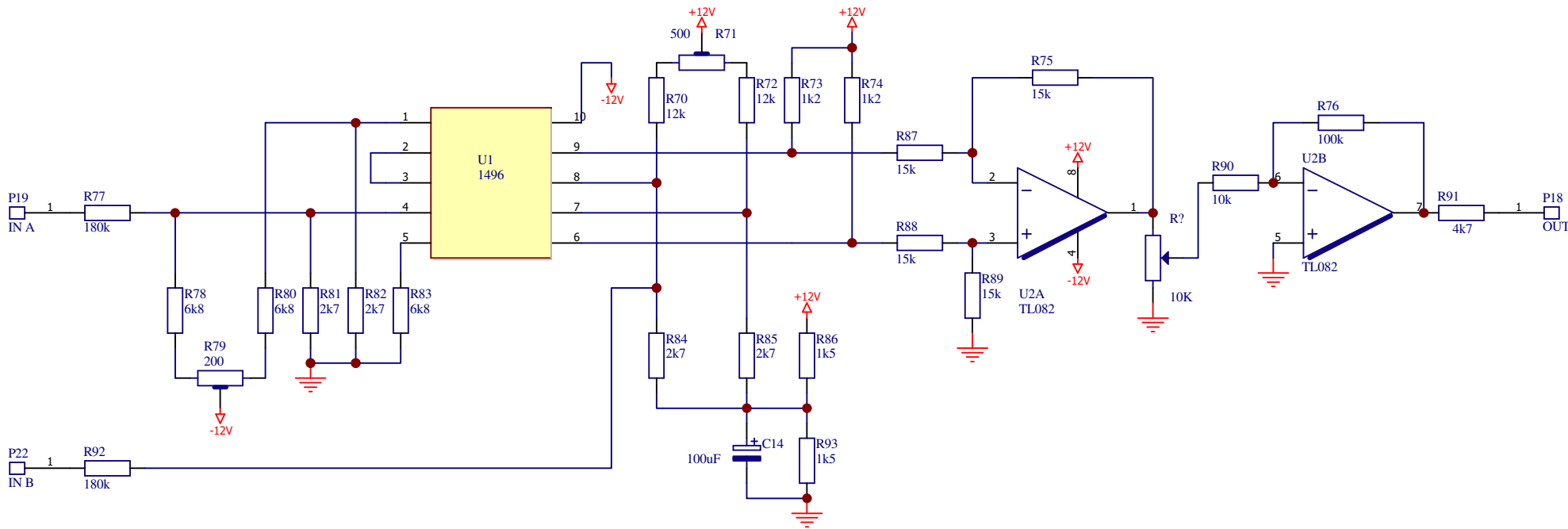
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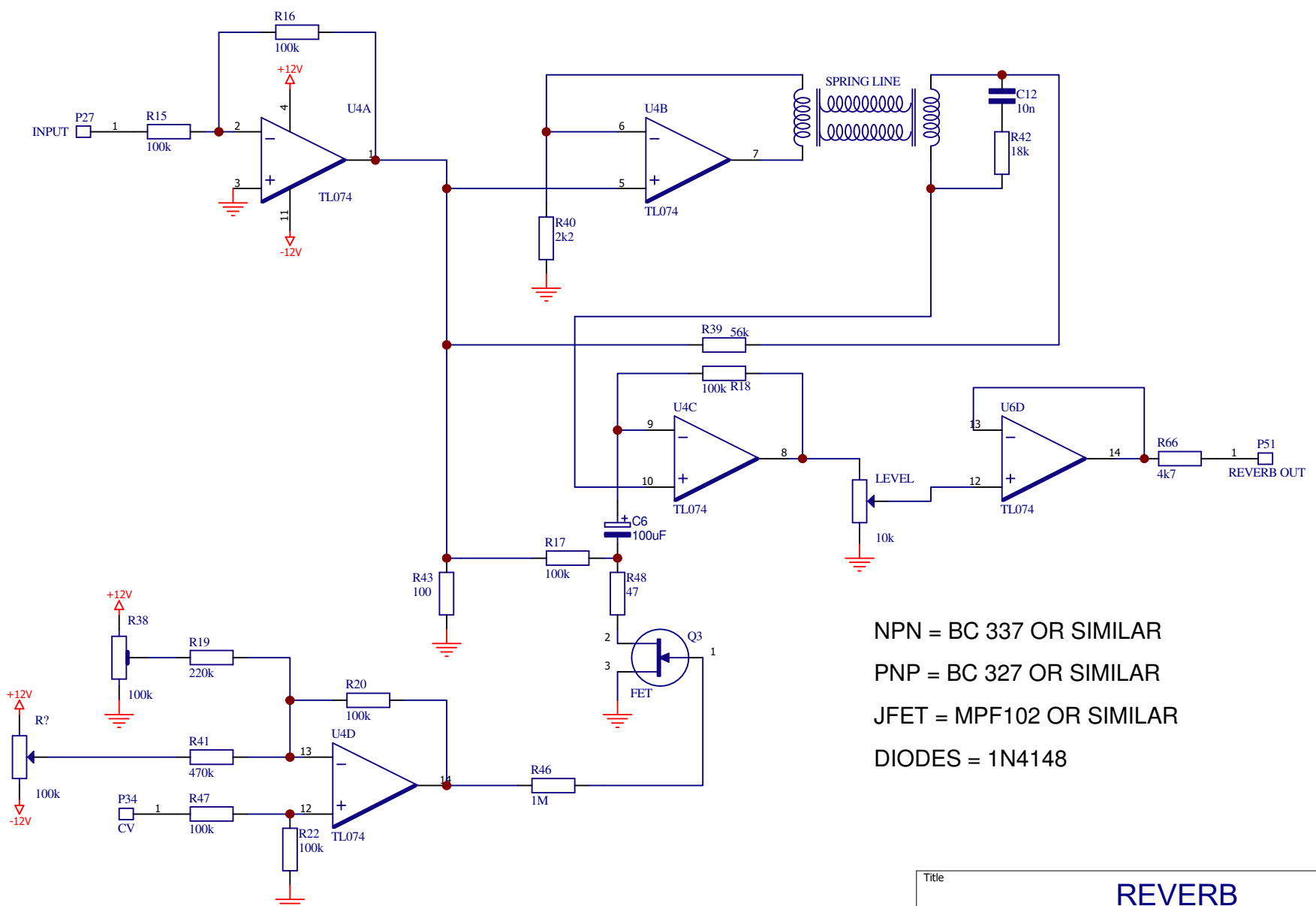
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Title			<b>RING MODULATOR</b>		
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NPN = BC 337 OR SIMILAR  
 PNP = BC 327 OR SIMILAR  
 JFET = MPF102 OR SIMILAR  
 DIODES = 1N4148

Title			<b>REVERB</b>		
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