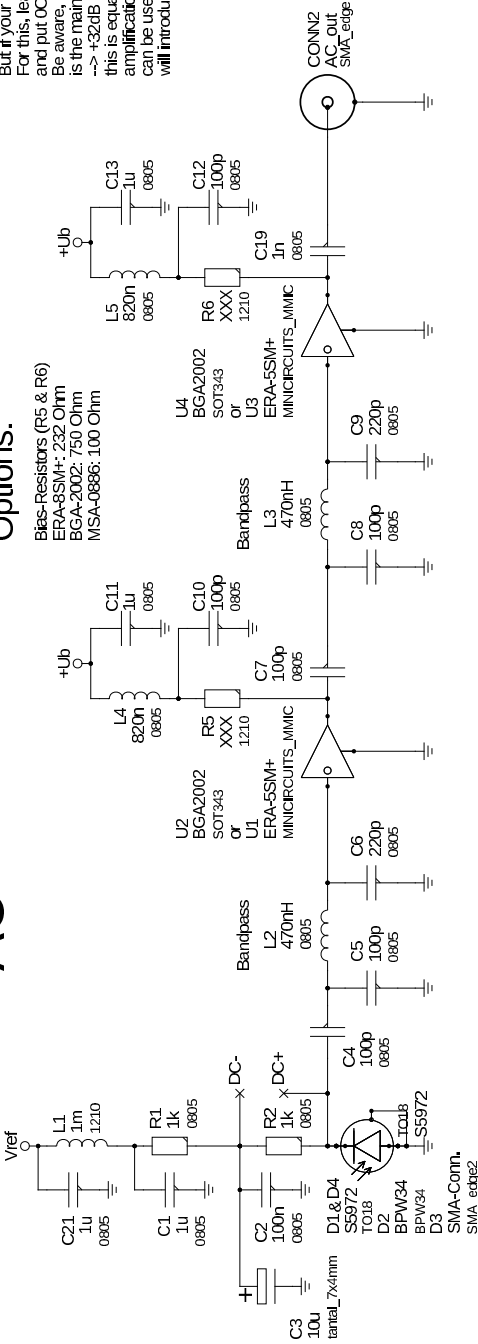


# AC

## Filtering for Reverse-Voltage

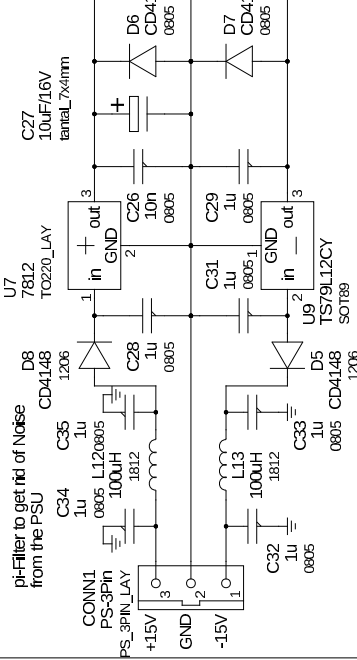


## Options:

Bias-Resistors (R5 & R6)  
 ERA-5SM+: 232 Ohm  
 BGA-2002: 750 Ohm  
 MSA-0886: 100 Ohm

In most cases you want 2 amplification stages (~ +32 dB each).  
 But if your beat signal is strong you can skip the second amp.  
 For this, leave out the second Bandpass, Amp and the Power-Supply for the Amp  
 and put 0 Ohm for L3 and C19. You also need to bridge the Amp with a wire or 0 Ohm.  
 Be aware, that the noise of the first Amp (NF: 1.3 dB ~ 1.2 nV/sqrtHz)  
 is the main noise-contribution to the signal and will be boosted by the second Amp.  
 --> +32dB = ~1.2 μV/sqrtHz. Integrated over the Filter-Bandwidth of ~30 MHz  
 this is equal to ~10 mV Noise-Floor. Further (external)  
 amplification is not really recommended. If necessary, narrow-bandpass-filtering  
 can be used to minimize the noise. But high-order bandpasses (e.g. MiniCircuits)  
 will introduce Phase-Distortion in the band so that regulation-bandwidth drops.

TO220 because the  
 ERA-8 drains a lot of current  
 Do not use TS7812 since it has a latch-up bug

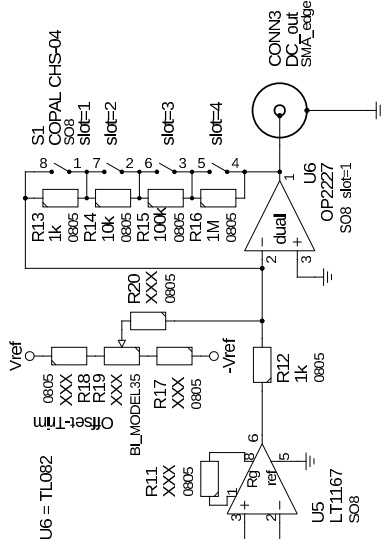


## Options:

DC-Gain Resistors  
 Low optical powers  
 R2: 10k  
 R11: 50k

If DC-Offsets and Drifts are unimportant: U6 = TL082

# DC



## Voltage Reference for DC Offset-Trimming and Reverse-Voltage

