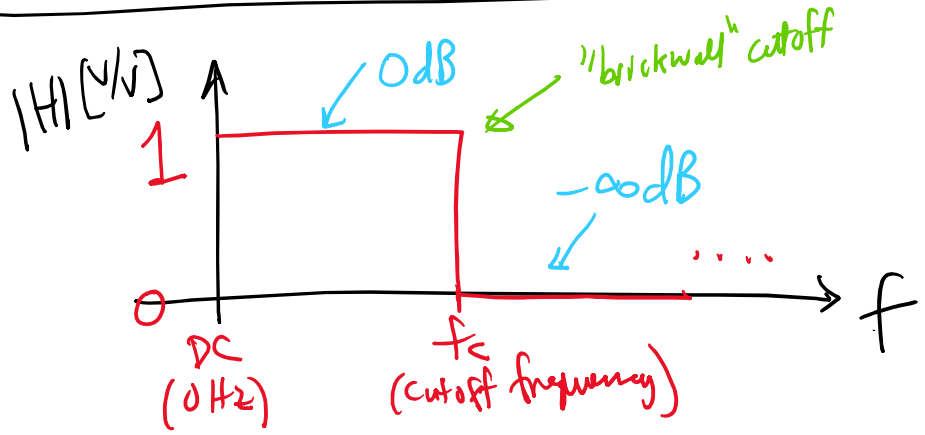
Ideal Filters (ideally, phase = 0° across all frequencies)

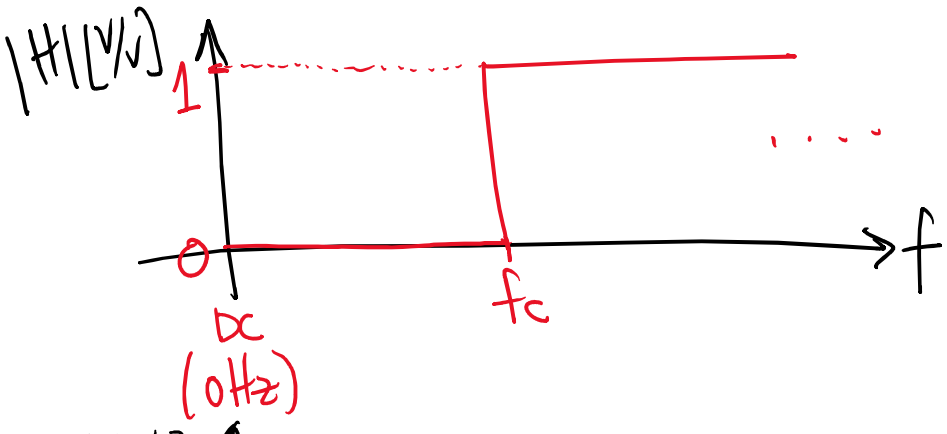
1) Ideal LPF (lowpass filter)

{ ∢H = 0° }



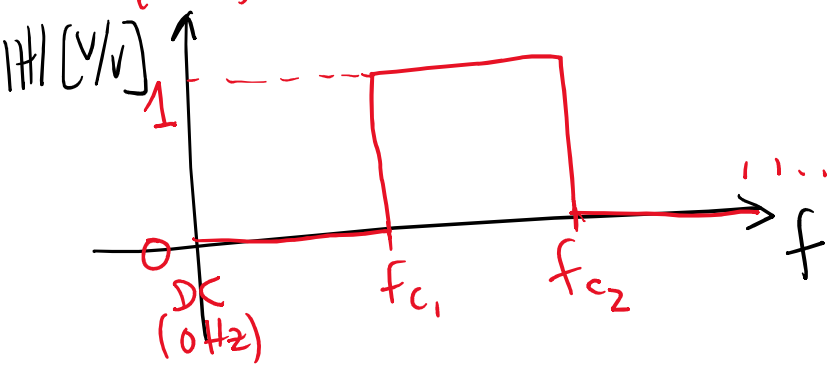
2) Ideal HPF (highpass filter)

{ ∢H = 0° }



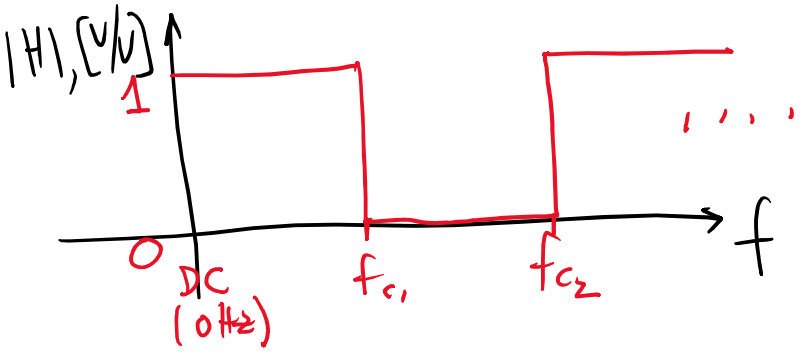
3) Ideal BPF (bandpass filter)

{ ∢H = 0° }



4) Ideal BSF (bandstop filter)

{ ∢H = 0° }



--> There are other filter types, but these are the main ones to be aware of for now

--> Sometimes an ideal filter will/can have a gain > 1 V/V in the passband; this would result in an amplification of the input at that frequency

--> The stopband attenuates input content at that particular frequency

--> Ideal filters are not realizable, but they provide a useful way to benchmark practical filter performance